

Search history

Search PA=(SILCA S.P.A.) and INV=(MICHELE DONADINI) (Results 0)

1:

Search INV=(MICHELE DONADINI) (Results 2)

2:

Search INV=(GIORGIO PIGATTI) (Results 3)

3:

Search 2 and 3 (Results 2)

4:

Search TAC=((ELECTRONIC AND (KEY AND DUPLICATING AND MACHINE))) (Results 53)

5:

Search TAC=((ELECTRONIC AND (KEY AND DUPLICATING AND MACHINE)) AND IPC=(B23C3/35)) (Results 7)

6:

Search pn=(US2013170693 OR US5908273 OR US5128531 OR US8287215 OR US20110297691 OR US20110176881 OR EP0779120) (Results 7)

7:

Search PA=(SILCA) (Results 87)

8:

Search TAC=(DUPLICATOR) and PA=(SILCA) (Results 0)

9:

Search KEY AND DUPLICATING AND MACHINE AND 8 (Results 16)

10:

Search pn=(EP0234568 OR EP0614717 OR US5441369 OR US5833406) (Results 4)

11:

Search pn=(WO9906179 OR US3286597 OR WO2008065052 OR WO9003867 OR EP0614717 OR EP2517826) (Results 6)

12:

Search pn=(EP0234568 OR WO0138041 OR US5441369 OR EP2581159 OR US2329269 OR US3714865 OR US6602030 OR US2002 OR US2012141221 OR US119739 OR US4051748 OR US3675536 OR US2016303662 OR US4251173 OR US2002119739 OR US2005135891 OR GB1398795 OR TWM356550) (Results 18)

Search 13 OR 12 OR 11 OR 10 OR 7 (Results 39)

14:

Search (MACHINE AND (KEY AND DUPLICATOR)) (Results 75)

15:

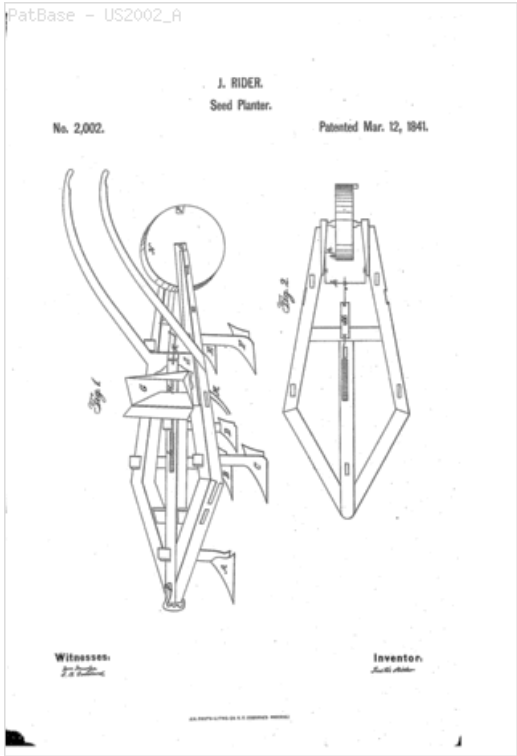
Search 15 AND IPC=(B23C3/35) (Results 12)

16:

Search 16 OR 14 (Results 48)

17:

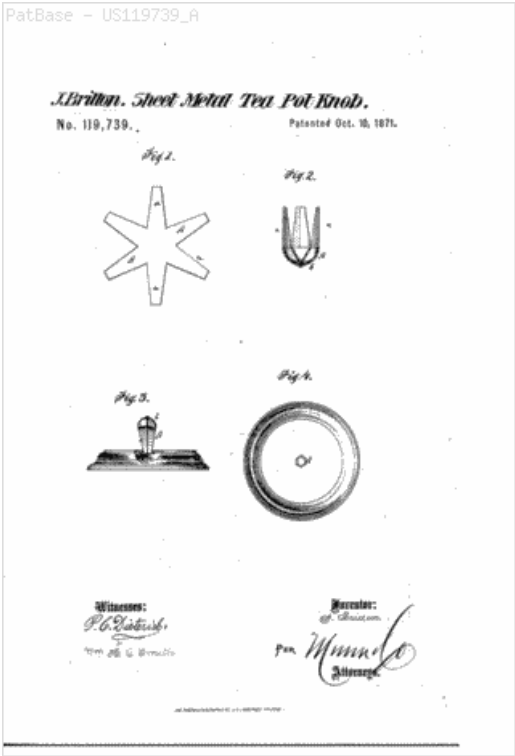
Classifications:
CPC: A01C5/06
US: 111/81



Family:

Publication number	Publication date	Application number	Application date
US2002 A	18410312		00000000

Classifications:
CPC: Y10T16/506 B21D5/02
US: 16/441 72/379.2



Family:

Publication number	Publication date	Application number	Application date
US119739 A	18711010		00000000

Title: KEY CUTTING AND DUPLICATING MACHINE

Abstract: Source: US2329269A 1. In a key cutting and duplicating machine: means for gripping keys and key blanks comprising, a base having a step in one edge of its top surface to provide a ledge upon which the key or key blank may rest, and a positioning shoulder against which the back edge of the key of KEY blank is engageable, said step having a depth substantially no greater than the thickness of the key or key blank so that the upper surface of a key or key blank in position is substantially flush with the top surface of the base; a clamping member positioned above the base and having a key engaging portion adapted to engage the top surface of a key or key blank in position; means for loosely holding the clamping member in position above the base, said means enabling a degree of lateral motion of the clamping member across the top surface of the base; means for forcing the clamping member toward the base; and means for imparting lateral motion to the clamping member as the clamping member is forced toward the base, in a direction to draw its key engaging portion across the top of a key or key blank toward the positioning shoulder.

Classifications:

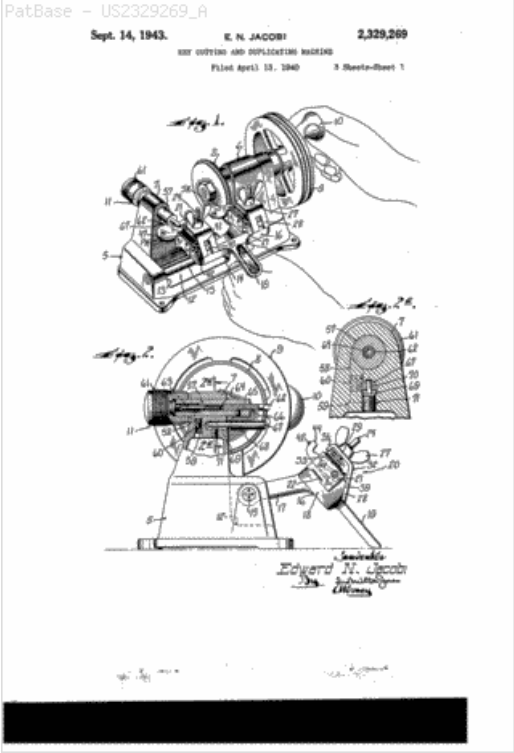
International (IPC 8-9): B23C3/35 (Advanced/Invention); B23C3/00 (Core/Invention)

International (IPC 1-7): B21D53/42

CPC: B23C3/35 Y10T409/300952

European: B23C3/35

US: 409/81



Family:

Publication number	Publication date	Application number	Application date
US2329269 A	19430914	US19400329454	19400413

Priority:

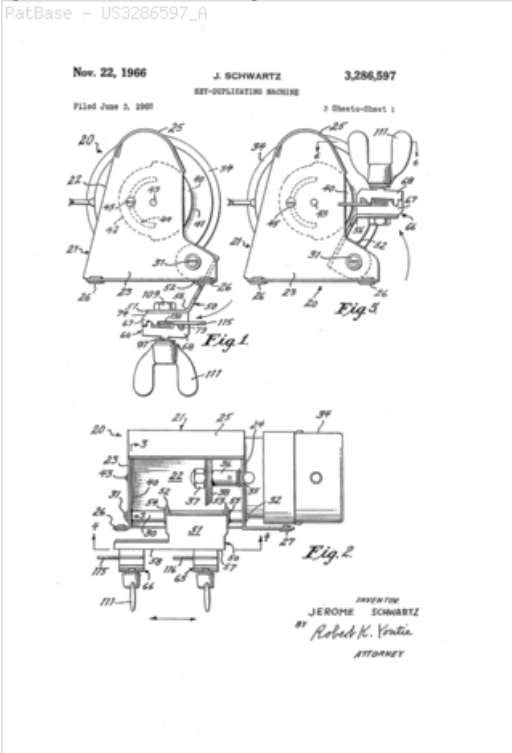
US19400329454 19400413

Probable Assignee: BRIGGS AND STRATTON CORP
Assignee(s): (std): BRIGGS AND STRATTON CORP
Inventor(s): (std): JACOBI EDWARD N

Title: **KEY-DUPLICATING MACHINE**

Abstract: Source: US3286597A 1. In a **key-duplicating machine**; the combination comprising a frame having an open front, a shaft carried by said frame interiorly thereof and mounted for rotation about a generally horizontal axis, a cutting tool in said frame and carried by said shaft for rotation therewith, way means on said frame extending longitudinally of and spaced from said shaft axis, a carriage mounted on said way means for movement longitudinally therealong and swinging movement toward and away from said shaft axis, a guide mounted in said frame spaced longitudinally thereof from said tool, and clamp means carried by said carriage for releasably clamping a cut **key** adjacent to said guide and a **key** blank adjacent to said tool, said clamp means being swingable and slidable with said carriage to move a cut **key** along said guide and a **key** blank along said tool to be cut by the latter, said frame comprising an integral sheet of stiff bendable material cut and bent to define an upstanding rear wall, end walls integral with said rear wall extending forwardly from opposite ends of said rear wall to vertically rigidify the latter, and a hood integral with said rear wall extending forwardly from said rear wall and arcuately over the space between said end walls to horizontally rigidify said rear wall, said way means extending between the forward ends of said end walls to rigidify said end walls, said carriage comprising an integral sheet of stiff bendable material cut and bent to define a generally Hat body part extending transversely from said way means, said body part being provided with a bend extending generally parallel to said way means for longitudinally rigidifying said body part, and a pair of ears integrally depending from opposite ends of said body part slidably and rotatably engaging said Way means to mount said body part for sliding and rotative movement relative to said way means, said clamp means comprising a pair of substantially identical vises mounted on said body part respectively located for swinging movement toward and away from said guide and tool, said vises each comprising a lower member on and in interlocking engagement with said body part, an upper member on said lower member, resilient means urging said members apart, and tie means for forcibly moving said members toward each other, said upper and lower members having meeting surfaces, at least one of said surfaces being oblique to the direction of member movement toward and away from each other to simultaneously move said upper member toward said lower member and away from said shaft axis, to thereby draw a clamped article away from said axis, said lower and upper members each being formed with at least a single protrusion and a single recess for receiving the protrusion of the adjacent member, said recesses and protrusions being formed with said meeting surfaces.

Classifications:
International (IPC 8-9): B23C3/35 (Advanced/Invention); B23C3/00 (Core/Invention)
International (IPC 1-7): B23C3/35
CPC: B23C3/35 Y10T409/300952
European: B23C3/35
US: 409/81



Family:

Publication number	Publication date	Application number	Application date
US3286597 A	19661122	US19650461136	19650603

Priority:

US19650461136 19650603

Probable Assignee: TAYLOR LOCK CO
Assignee(s): (std): TAYLOR LOCK CO ; TAYLOR LOCK COMPANY
Inventor(s): (std): JEROME SCHWARTZ
Inventor(s): SCHWARTZ JEROME

Title: **KEY** CUTTING **MACHINE** WITH PRESELECTED DEPTH GAUGING

Abstract: Source: US3496636A ABSTRACT OF THE DISCLOSURE

A **machine** for cutting **key** blanks, preferably using a manually operated punch or cutting die, which utilizes adjustable depth gauges in association with a movable **key** blank supporting member for varying the depth of the cuts on the **key** blank in accordance with a known or determinable code pattern. The height of the **key** blank supporting member relative to the cutting tool is established by the sequential engagement of a finger or guide pin with the series of adjustable gauging elements. Automatic traverse of the **key** blank may be obtained by a pawl and ratchet mechanism or similar traversing means which are responsive to the stroke or manipulation of the **key** cutting **machine**. The extent of incremental traversing movement of the **key** blank can be varied to conform to different pre-established spacings between the cuts on various types of **key** blanks, by adjustment of the length of stroke which actuates the traversing or spacing mechanism. The spacing of the gauge elements themselves can be fixed or adjustable. B

Classifications:

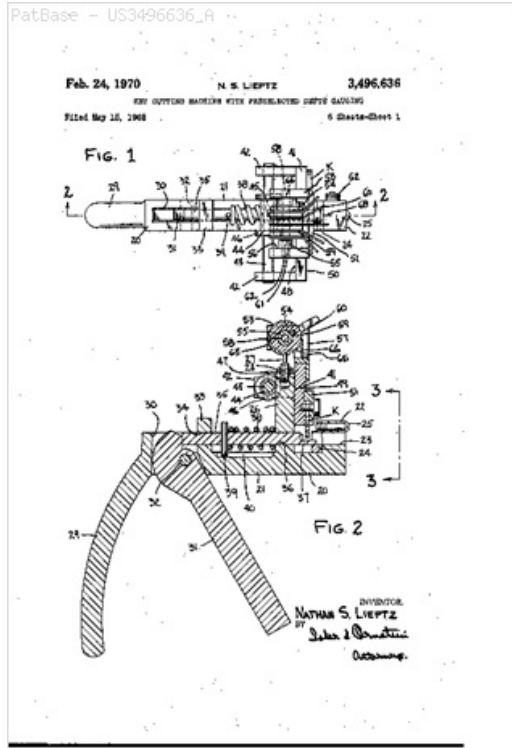
International (IPC 8-9): B23D36/00 B23P15/00 B23Q5/52 B26F1/36
E05B19/00 (Advanced/Invention);
B23D36/00 B23P15/00 B23Q5/22 B26F1/32
E05B19/00 (Core/Invention)

International (IPC 1-7): B21D53/42 B23C3/35 B23D5/04 B25F3/00

CPC: Y10S83/917 B23P15/005 Y10T409/300896 Y10T409/300952

European: B23P15/00D

US: 30/131 301/310 409/80 409/81 83/917



Family:

Publication number	Publication date	Application number	Application date
DE1924036 A1	19691127	DE19691924036	19690510
FR1600030 A	19700720		19681230
GB1193568 A	19700603	GB19680058409	19681209
JP49005870 B4	19740209	JP19690026242	19690407
US3496636 A	19700224	US19680729281	19680515

Priority:

US19680729281 19680515

Probable Assignee: CURTIS IND INC A CORP OF DE

Assignee(s): (std): CURTIS NOLL CORP

Assignee(s): HELLER FINANCIAL INC ; HELLER FINANCIAL INC A CORP OF DE ; WESTINGHOUSE CREDIT CORP ; BTIC ACQUISITION CORP ; CURTIS IND ; CURTIS IND INC ; CURTIS IND INC A CORP OF DE

Inventor(s): (std): LIEPTZ NATHAN S ; SOL LIEPTZ NATHAN

Inventor(s): NATHAN S LIEPTZ

Title: **KEY** CUTTING **MACHINE**

Abstract: Source: US3675536A A **key** cutting **machine** as disclosed which is semi-automatic operation in that the master **key** to be copied and a blank **key** are mounted in vises, a door is closed, the **machine** is turned on and it automatically cuts a **key** blank in accordance with the master **key**, brushes the **key** to remove any burr and then the **machine** shuts itself off. The door may then be opened and the **keys** removed from the vises.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

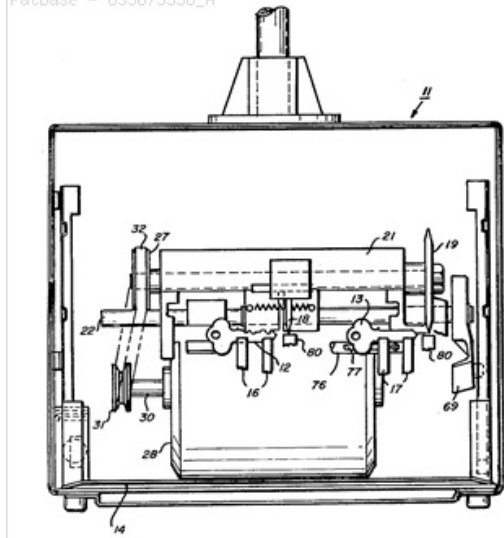
International (IPC 1-7): B23B3/00 B23C1/16 B23C3/35 B23P
B23Q35/08 E05B19/00

CPC: Y10T409/301064 B23C3/35

European: B23C3/35

US: 409/83 90/13.05

PatBase - US3675536_A



Family:

Publication number	Publication date	Application number	Application date
CA937432 A1	19731127	CA19710116766	19710628
CH543346 A	19731031	CH19710017108	19711124
DE2157798 A1	19721123	DE19712157798	19711122
DE2166056 A1	19730215	DE19712166056	19711122
DE2166056 B2	19751030	DE19712166056	19711122
DE2166056 C3	19760610	DE19712166056	19711122
FR2116042 A5	19720707	FR19710042236	19711125
GB1330976 A	19730919	GB19710052469	19711104
IT942956 A	19730402	IT19710070868	19711125
US3675536 A	19720711	US19700093145	19701127

Priority:

US19700093145 19701127

Probable Assignee: COLE NATIONAL CORP

Assignee(s): (std): GOLF NATIONAL CORP ; COLE NAT CORP ; COLE NATIONAL CORP

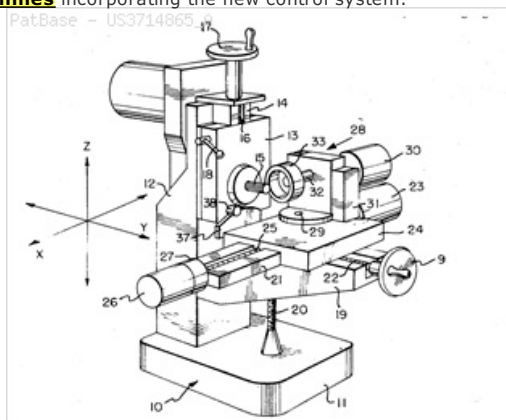
Assignee(s): COLE NATIONAL CORP CLEVELAND OHIO V ST A ; ROBERT H RICHENS ; PHILIP C HUNGERFORD JR ; JOHN L GEREBY ; AMERICAN CONSUMER PRODUCTS INC ; AMERICAN CONSUMER PRODUCTS INC 5777 GRANT AVENUE C ; AMERICAN CONSUMER PRODUCTS INC 5777 GRANT AVENUE CLEVELAND OH 44105 A CORP OF ; CHASE COMMERCIAL CORP

Inventor(s): (std): GEREBY JOHN L ; GEREBY JOHN LESLIE ; HUNGERFORD JUN PHILIP CLARKSON ; HUNGERFORD PHILIP C JR ; HUNGERFORD PHILIP CLARDSON ; PHILIP CLARKSON JR HUNGERFORD ; RICHENS ROBERT H ; RICHENS ROBERT HARRY ; ROBERT HARRY RICHENS ; RICHENS R ; HUNGERFORD P ; GEREBY J ; JOHN LESLIE GEREBY

Inventor(s): LESLIE GEREBY JOHN ; PHILIP C HUNGERFORD JR ; CLARKSON JR HUNGERFORD PHILIP ; RICHENS ROBERT HARRY BEDFORD HEIGHTS ; ROBERT H RICHENS ; HUNGERFORD PHILIP CLARDSON JR CLEVELAND ; JOHN L GEREBY ; GEREBY JOHN LESLIE WICKLIFFE ; HARRY RICHENS ROBERT ; HUNGERFORD JUN

Abstract: Source: US3714865A The invention is directed to a novel apparatus for milling Swiss-type screw machine cams. The invention provides a highly simplified and economical numerically controlled system enabling Swiss-type screw machine cams and similar articles to be milled with an ease and precision heretofore unattainable otherwise than with highly sophisticated and costly equipment. In its most typical application, the invention is utilized in the retro-fitting of an existing milling machine apparatus of otherwise conventional construction. Alternatively, the invention can be applied in the first instance, in connection with the manufacture of modified milling machines incorporating the new control system.

US: 318/573 409/131 409/80 451/4 90/1.1C 90/1.3C



Publication number	Publication date	Application number	Application date
CH554211 A	19740930	CH19720000116	19720105
CH565614 A	19750829	CH19740000457	19720105
CH565615 A	19750829	CH19740012173	19740919
US3714865 A	19730206		19710107
US3831487 A	19740827	US19720315134	19721214
USRE28559 E	19750930	US19740517291	19741023
USRE28766 E	19760413	US19740517397	19741023

US19710104662 19710107 US19720315134 19721214 US19740517397 19741023
US19740517291 19741023

VILLANO J US

Title: **KEY DUPLICATING MACHINE**

Abstract: Source: GB1398795A 1398795 **Key**-cutting **machines**, beds and frames AUGUST BOERKEY NACHFOLGER 26 Feb 1973 [26 Feb 1972] 9253/73 Headings B3K and B3B A **key**-cutting **machine** comprises a frame 1, pattern and **key** blank holders 18, 14, mounted on a slide 17 which is movable towards and away from a cutter 4 on a second slide 5 displaceable along a guide rod 6 extending parallel to the cutter shaft, and a shaft 7 extending parallel to rod 6 and being rotatable but axially non- displaceable in frame 1, gear-wheels 8 mounted on shaft 7 so as to be non-rotatable but axially displaceable thereon, and meshing with toothed racks 13 on the first slide, and a control handle 11 carried by the gear-wheels 8, which is rotatable and has a pinion 11¹ which meshes with a toothed rack. Cutter 4¹ is rotated by an electric motor 2 via a reduction gear 3. Pattern and **key** blank holders 18, 14, each comprises a vice having jaws 23, 23, Fig. 7, which are actuated by a wedge 24 connected to a handle 26. The movements of slides 5 and 17 are controlled by the single handle 11. Vice 14 can be pivoted about an axis parallel to that of the cutter axis by a handle 20. A feeler disc 19 for engagement with the pattern has parts of different thickness.

Classifications:

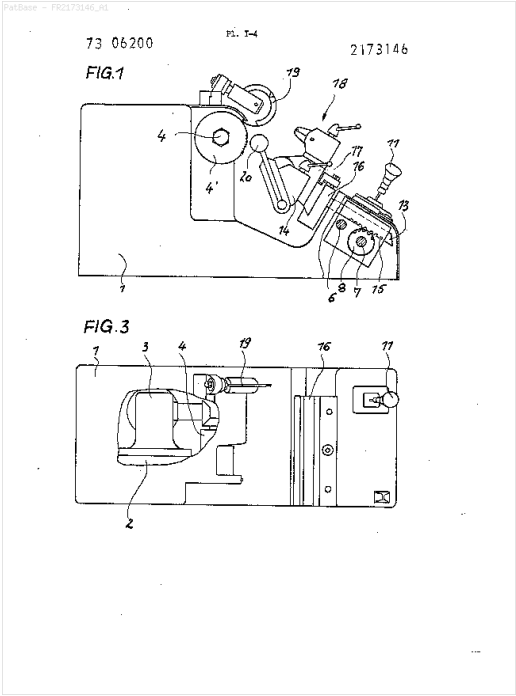
International (IPC 8-9): B23C3/35 B23Q1/62 B23Q5/54 (Advanced/Invention);

B23C3/00 B23Q1/25 B23Q5/00 (Core/Invention)

International (IPC 1-7): B23C3/35 E05B19/00

CPC: B23C3/35 B23Q1/621 B23Q5/54

European: B23C3/35 B23Q1/62A B23Q5/54



Family:

Publication number	Publication date	Application number	Application date
DE2209176 A1	19730830	DE19722209176	19720226
DE2209176 B2	19800327	DE19722209176	19720226
DE2209176 C3	19801120	DE19722209176	19720226
FR2173146 A1	19731005	FR19730006200	19730220
FR2173146 B1	19750822	FR19730006200	19730220
GB1398795 A	19750625	GB19730009253	19730226
IT979438 A	19740930	IT19730020810	19730223

Priority:

DE19722209176 19720226

Probable Assignee: BOERKEY NACHF AUGUST

Assignee(s): (std): BOERKEY NACHF AUGUST ; BOERKEY NACHFOLGER AUGUST ; BORKEY A NACHFOLGER

Assignee(s): BORKEY NACHFOLGER AUGUST DT ; AUGUST BOERKEY NACHF 5820 GEVELSBERG

Inventor(s): (std): ERLNBACH MANFRED

Inventor(s): ERLNBACH MANFRED 5820 GEVELSBERG ; TEILNICHTNENNUNG BEANTRAGT ; ANTRAG AUF NICHTNENNUNG

Title: KEY CUTTING MACHINE FOR PRODUCING OBLIQUELY ORIENTED BITTING

Abstract: Source: US4051748A A rotary cutter type key cutting machine for duplicating keys in which the V-shaped notches that define the bitting are obliquely oriented both left and right. Identical vises mounted on a hinged carrier which swings about an axis parallel to that of the rotary cutter, grip the pattern key and the key blank and present the same respectively to a position-identifying stylus and the rotary cutter. The vises are rotatable in unison about their connections with the carrier, permitting them to be so oriented that as the carrier is swung towards the axis of the cutter, the bitted and about-to-be-bit edges of the pattern key and the key blank are either parallel to the cutter axis or inclined with respect thereto in one direction or the other depending upon the direction the vises have been rotated. The stylus is yieldingly projected to a position at which its key-engaging tip is spaced a distance from the cutter axis greater than the radius of the cutter, so that a selected V-bit in the pattern key can be engaged with the stylus and rotary adjustment of the vises as needed to have the selected V bit fit the stylus can be effected before the key blank contacts the cutter.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

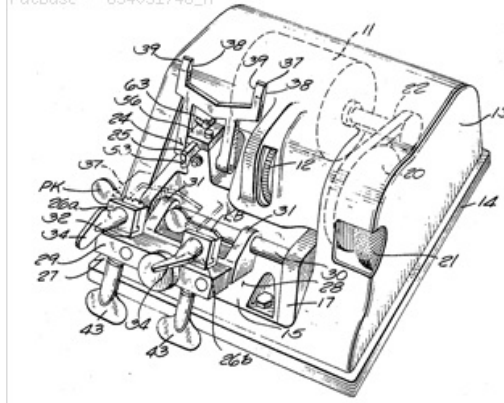
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B23Q35/00 B23Q35/04 B23Q35/10 E05B19/00 E05B19/04

CPC: Y10T409/300952 B23C3/355

European: B23C3/35B

US: 409/81 451/320 76/110 D15/127

PatBase - US4051748_R



Family:

Publication number	Publication date	Application number	Application date
AU197619676 A1	19780525	AU19760019676	19761118
AU500906 B2	19790607	AU19760019676	19761118
CA1050316 A1	19790313	CA19760265337	19761110
CH613645 A	19791015	CH19770004578	19770413
FR2358956 A1	19780217	FR19770000456	19770110
FR2358956 B1	19820716	FR19770000456	19770110
GB1560397 A	19800206	GB19760052355	19761215
JP1240745 C3	19841126	JP19760143275	19761129
JP53012581 A2	19780204	JP19760143275	19761129
JP59012407 B4	19840323	JP19760143275	19761129
US4051748 A	19771004	US19760707037	19760720

Priority:

US19760707037 19760720

Probable Assignee: UNICAN SECURITY SYSTEMS

Assignee(s): (std): UNICAN SECURITY SYSTEMS ; YUNIKAN SEKIYURITEI SHISUTEMUZ

Assignee(s): SHERMAN CHARLES F ; UNICAN SECURITY SYSTEMS LTD

Inventor(s): (std): CHIYAARUSU EFU SHIYAAMAN ; SHERMAN C F ; SHERMAN CHARLES F

Inventor(s): C F SHERMAN ; CF SHERMAN ; CHAARUSU EFU SHAAMAN ; CHARLES F SHERMAN

Agent(s): PO

Title: KEY DUPLICATOR

Abstract: Source: US4140043A A **machine** for the **duplication** of **keys** comprises a frame on which a carriage, supporting juxtaposed clamps for a sample **key** and a blank, is swingable about a horizontal guide bar and slidable along the latter. The clamps are held on a common support which is pivotable on the carriage about an axis parallel to the guide bar to facilitate the cutting of convex or laterally slanting lands in a **key** bit. Two uprights on the frame carry a cutting wheel, rotating on a shaft parallel to the guide bar, and a feeler engageable with the sample **key**, the feeler having the shape of a vertical blade with a convex **key**-contacting edge whose radius of curvature equals that of the cutting wheel. The feeler may be spring-urged toward the clamp support and repressible by its contact with the sample **key** into registry with the cutter periphery.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);

B23C3/00 (Core/Invention)

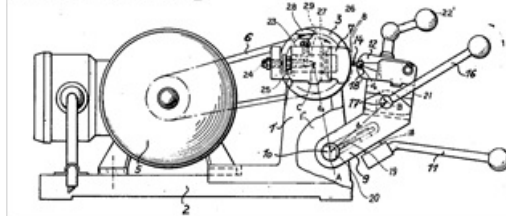
International (IPC 1-7): A01N47/30 B23C1/16 B23C3/35

CPC: Y10T409/300952 B23C3/355

European: B23C3/35B

US: 409/81 90/13.05

PatBase - US4140043_A

**Family:**

Publication number	Publication date	Application number	Application date
AT351891 B	19790827	AT19770008561	19771130
AT856177 A	19790115	AT19770008561	19771130
DE2700114 A1	19780713	DE19772700114	19770104
DE2700114 B2	19781214	DE19772700114	19770104
DE2700114 C3	19790823	DE19772700114	19770104
FR2375942 A1	19780728	FR19770038991	19771223
FR2375942 B1	19800822	FR19770038991	19771223
GB1562881 A	19800319	GB19780000160	19780104
IT1089297 A	19850618	IT19770031504	19771230
SE419183 B	19810720	SE19770014938	19771230
SE419183 C	19811029	SE19770014938	19771230
SE7714938 A	19780705	SE19770014938D	19771230
SE7714938 L	19780705	SE19770014938	19771230
US4140043 A	19790220	US19770862357	19771220

Priority:

DE19772700114 19770104

Probable Assignee: BOERKEY NACHF AUGUST

Assignee(s): (std): BOERKEY NACHF AUGUST ; BOERKEY NACHFOLGER A ; BORKEY AUGUST NACHF ; BORKEY NACHF AUGUST ; BORKEY NACHFOLGER AUGUST FA ; BORKEY NACHFOLGER FIRMA AUGUST

Assignee(s): FIRMA AUGUST BORKEY NACHFOLGER ; FA AUGUST BOERKEY NACHFOLGER ; FIRMA AUGUST BOERKEY NACHFOLGER ; BORKEY AUGUST NACHFOLGER ; BORKEY AUGUST ; FIRMA AUGUST BORKEY NACHF ; AUGUST BOERKEY NACHF ; AUGUST BOERKEY NACHF 5820 GEVELSBERG ; AUGUST BOERKEY NACHFOLGER FA ; AUGUST BORKEY NACHF ; AUGUST BORKEY NACHF FA ; AUGUST BORKEY NACHFOLGER FA

Inventor(s): (std): ERLBACH M ; ERLBACH MANFRED ; HUCKINGHAUS C F ; HUECKINGHAUS C F ; HUECKINGHAUS CARL F ; HUECKINGHAUS CARL FRIEDRICH ; HUCKINGHAUS CARL FRIEDRICH ; HUCKINGHAUS CARL F

Inventor(s): M ERLBACH ; FRIEDRICH HUECKINGHAUS CARL ; C F HUCKINGHAUS ; CARL FRIEDRICH HUCKINGHAUS ET MANFRED ERLBACH

Title: **KEY** CUTTER

Abstract: Source: US4251173A A **key** cutter is provided that includes a **machine** for cutting **keys** for most pin tumbler or disc tumbler locks. The **machine** is not a **duplicator** but is a **machine** for cutting **keys** by the code or number. The **machine** includes a base, turret assembly, and an electric motor for operating or driving a cutting wheel.

Classifications:

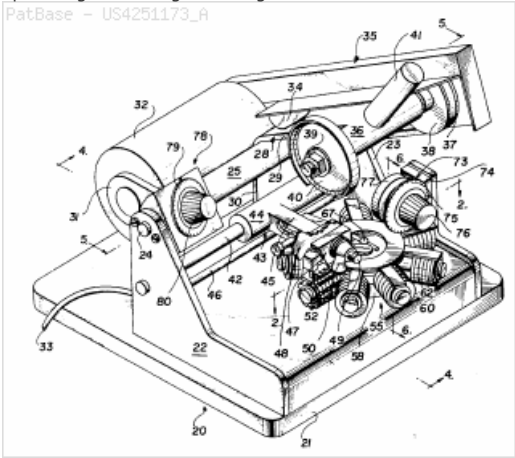
International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

International (IPC 1-7): B23C1/16 B23C3/30

CPC: B23C3/35 Y10T29/442 Y10T409/301008

European: B23C3/35

US: 29/76.2 409/82 451/237



Family:

Publication number	Publication date	Application number	Application date
US4251173 A	19810217	US19780954459	19781025

Priority:

US19780954459 19781025

Probable Assignee:

SAUCEDO EDWARD

Assignee(s): (std):

SAUCEDO EDWARD

Inventor(s): (std):

SAUCEDO EDWARD

Title: CLAMP FOR LOCK **KEY DUPLICATING MACHINE**

Abstract: Source: US4709511A A clamp for **key duplicating machines** for lock **keys** comprising a pair of jaws (1,1',2,2') which are mounted on a threaded pin (4) rigid with a clamp support carriage (3), means for approaching said two jaws (1,1'+40, 2,2') when clamping the **key**, and elastic means (8,6) interposed between said two jaws (1,1', 2,2') to keep them spaced apart. The clamp comprises, in a position misaligned with the line of action of the applied clamping force and at the opposite side with respect to the gripping faces of the jaws (1,1'+40, 2,2'), a projecting portion causing, during the clamping stage, a moment opposite to the reaction moment caused by the clamped **key**.

Classifications:

International (IPC 8-9): B25B5/10 B25B5/16 (Advanced/Invention); B25B5/00 (Core/Invention)

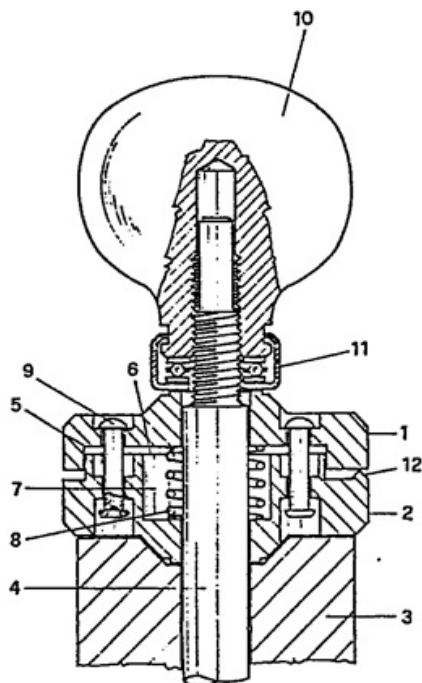
International (IPC 1-7): B23C3/35 B23Q B24B41/06 B25B5/10

CPC: B23C3/355 B25B5/16 B25B5/106

European: B25B5/10E2 B25B5/16

US: 269/254CS 269/88 451/365 51/216R 51/98R

PatBase - US4709511_R



Family:

Publication number	Publication date	Application number	Application date
EP0193859 A2	19860910	EP19860102484	19860226
EP0193859 A3	19880727	EP19860102484	19860226
IT1187441 A	19871223	IT19850084111	19850306
IT8584111 A0	19850306	IT19850084111	19850306
US4709511 A	19871201	US19860836425	19860305

Priority:

IT19850084111 19850306

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Assignee(s): SILCA S P A

Inventor(s): (std): BIANCHI CAMILLO ; CAMILLO BIANCHI

Designated states: AT BE CH DE FR GB IT LI LU NL SE

Title: **Key duplicating machine**, particularly for bitted **keys**.

Abstract: Source: EP0234568A2 A **key duplicating machine**, particularly for bitted **keys**, comprising, for the original **key** and for the blank **key** respectively, two clamps mounted on a carriage mobile horizontally in all directions about a confronting cutter unit in which there are provided two feelers arranged to sense the notches present in the edges of the bit of the original **key** and two cutters arranged to reproduce these notches in the corresponding edges of the bit of the blank **key**. The **machine** comprises a cross-table (20) on which the clamps (24, 25) for the two **keys** are mounted, this table being slidable along horizontal parallel guides (33) supported at their ends by two pairs of parallel connecting rods (34) and being mobile horizontally in all directions under the control of a horizontal lever (44), and further characterised in that the cutter unit (2) is mobile vertically through a distance at least corresponding to the maximum vertical travel of said cross-table (20) in moving orthogonal to said parallel guides (33).

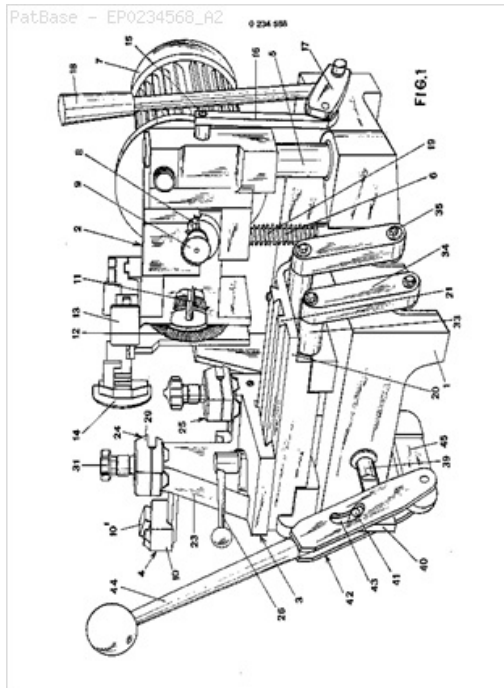
Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

International (IPC 1-7): B23C3/00 B23C3/35 B23Q35/04 B23Q35/06
B23Q35/10 E05B

CPC: B23C3/35

European: B23C3/35



Family:

Publication number	Publication date	Application number	Application date
AU198768738 A1	19870903	AU19870068738	19870212
EP0234568 A2	19870902	EP19870102655	19870225
EP0234568 A3	19891011	EP19870102655	19870225
IT1191570 A	19880323	IT19860084109	19860228
IT8684109 A0	19860228	IT19860084109	19860228
NZ219402 A	19881129	NZ19870219402	19870225
ZA8701094 A	19870806	ZA19870001094	19870216

Priority:

IT19860084109 19860228

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA ; SILCA SPA LTD CO ; SILCA S P A ; SILCA SPA

Assignee(s): SILCA LTD CO SPA ; SILCA S P A

Inventor(s): (std): BIANCHI C ; BIANCHI CAMILLO

Inventor(s): CAMILLO BIANCHI

Designated states: AT BE CH DE ES FR GB GR IT LI LU NL SE

Title: OPTICAL PROFILE READER, PARTICULARLY FOR **KEY DUPLICATING MACHINE**

Abstract: Source: US5128531A PCT No. PCT/EP89/01157 Sec. 371 Date Jun. 1, 1990 Sec. 102(e) Date Jun. 1, 1990 PCT Filed Oct. 2, 1989 PCT Pub. No. WO90/03867 PCT Pub. Date Apr. 19, 1990. A optical profile reader, particularly for **key duplicating machines**, incorporating a photoemitter (16) positioned on one side of the profile (11) to be read, and a photodetector (21) facing the photoemitter (16), but on the opposite side of the profile to be read. Stepper motors (5, 8) are included for causing the profile (11) to be read to move orthogonal to the direction of a light beam striking the profile to be read. An electronic circuit controlled by the output signal of the photodetector (21) is also provided. The electronic circuit uses a threshold discriminator (25) set at a value between the values corresponding to the maximum and minimum illumination states of the photodetector (21). The threshold discrimination circuit (25) also controls the operation of the stepper motors (5, 8).

Classifications:

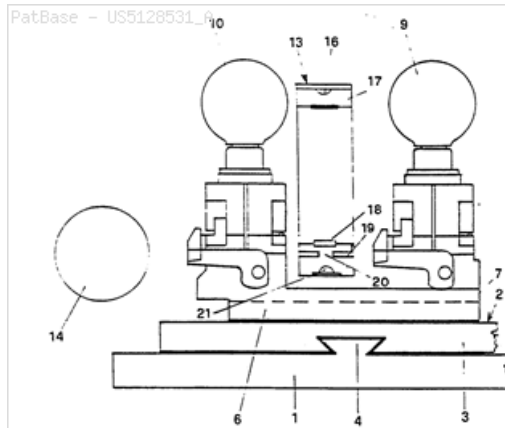
International (IPC 8-9): B23C3/35 B23Q35/128 (Advanced/Invention); B23C3/00 B23Q35/00 (Core/Invention)

International (IPC 1-7): B23C1/16 B23Q35/128 E05B G05B1/00

CPC: Y10T409/300952 Y10T409/301064 B23C3/35 B23Q35/128

European: B23C3/35 B23Q35/128

US: 250/201.1 250/202 409/81 409/83



Family:

Publication number	Publication date	Application number	Application date
AT105756 E	19940615	AT19890911365T	19891002
AU198943455 A1	19900501	AU19890043455	19891002
CA1335305 A1	19950418	CA19890614145	19890928
DE68915435 D1	19940623	DE19896015435	19891002
DE68915435 T2	19941006	DE19896015435T	19891002
EP0390903 A1	19901010	EP19890911365	19891002
EP0390903 B1	19940518	EP19890911365	19891002
IT1225998 A	19901210	IT19880084136	19881003
IT8884136 A0	19881003	IT19880084136	19881003
JP2515899 B2	19960710	JP19890510596T	19891002
JP3502556 T2	19910613	JP19890510596T	19891002
US5128531 A	19920707	US19900499260	19900601
WO9003867 A1	19900419	WO1989EP01157	19891003

Priority:

CA19890614145 19890928 IT19880084136 19881003 WO1989EP01157 19891002
WO1989EP01157 19891003

Probable Assignee: SILCA SPA

Assignee(s): (std): FADEL PAOLO ; SILCA A SPA ; SILCA S P A A ; SILCA SPA

Assignee(s): SILCA S P A VITTORIO VENETO TREVISO IT ; SILCA S P A VITTORIO VENETO TREVISO ; SILCA S P A ; SHIRUKA SPA ; SILCA A CORP OF ITALY SPA

Inventor(s): (std): FADEL PAOLO

Inventor(s): FADEL PAOLO I 31048 S BIAGIO DI CALLALTA ; FADEL PAOLO I 31048 S BIAGIO DI CALLALTA IT ; FUADEERU PAORO ; PAOLO FADEL

Agent(s): ROBIC

Designated states: AT AU BB BE BF BG BJ BR CF CG CH CM DE DK FI FR GA GB HU IT JP KP KR LI LK LU MC MG ML MR MW NL NO RO SD SE SN SU TD TG US

Abstract: Source: CA2023226. An adaptor for converting a conventional straight cut **key duplicator** into one capable of executing both straight and angular cuts. The angular cuts are necessary in **duplicating** MEDECO and EMHART type **keys**. The adaptor mounts to the vise grips of a conventional **machine**. It comprises a back plate and a front plate that is pivotally mounted to the back plate. A **key** vise is mounted to the front plate and is adjustable by means of an adjustment screw and a fine adjustment collar. The pivoting motion of the front plate allows for the angular cuts to be made on a **key** held in the adaptor. A set screw that mates with a plurality of apertures on the back plate holds the front plate in position at the desired angle.

International (IPC 8-9): B23C3/35 B23C9/00 (Advanced/Invention); B23C3/00 B23C9/00 (Core/Invention)

Pat. 2,322,226

Fig. 1

Fig. 2

McJannet, Jircham, Messer & Allen

Publication number	Publication date	Application number	Application date
CA2023226 AA	19910920	CA1990203226	19900814
CA2023226 C	19930420	CA1990203226	19900814

US19900453846 19900319 CA19902023226 19900814

Inventor(s): (std): CASTAIN DAVID T

Title: BUSH CODE **DUPLICATOR** PARTIAL SILHOUETTE METHOD

Abstract: Source: US5133127A This invention relates to the method for producing a coded reference **key** for use in the locksmithing trade. The method comprises cutting a **key** blank at a first coded depth and at a first shank position, to create a partial silhouette of a reference **key**. Upon cutting a number of such partial reference **key** silhouettes at a number of positions and common depths, a set of partial reference **key** silhouettes can be created. When a locksmith is required to reproduce a reference **key** which has certain depth cuts at certain positions, he merely assembles the appropriate pre-cut partial reference **keys**, thereby creating the required complete silhouette. This complete reference **key** silhouette may then be **duplicated** by using a standard reference **key duplicating machine**.

Classifications:

International (IPC 8-9): B23C3/35 B23P15/00 (Advanced/Invention);
B23C3/00 B23P15/00 (Core/Invention)

International (IPC 1-7): B23C1/16 B23C3/35 B23P13/00

CPC: B23C3/35 B23P15/005 Y10T29/49996 Y10T409/301008

European: B23C3/35 B23P15/00D

US: 29/558 295/580 409/82 76/110



Family:

Publication number	Publication date	Application number	Application date
AU199191040 A1	19920526	AU19910091040	19910826
EP0513320 A1	19921119	EP19920901388	19910826
EP0513320 A4	19930630	EP19920901388	19910826
US5133127 A	19920728	US19900602154	19901025
WO9207677 A1	19920514	WO1991US06651	19910826

Priority:

US19870020577 19870302 US19880204357 19880609 WO1991US06651 19910826
US19900602154 19901025

Probable Assignee: BUSH ROBERT C

Assignee(s): (std): BUSH ROBERT C ; ROBERT C BUSH

Inventor(s): (std): BUSH ROBERT C

Inventor(s): ROBERT C BUSH

Designated states: AT AU BE CH DE DK ES FR GB GR IT JP KR LU NL SE SU

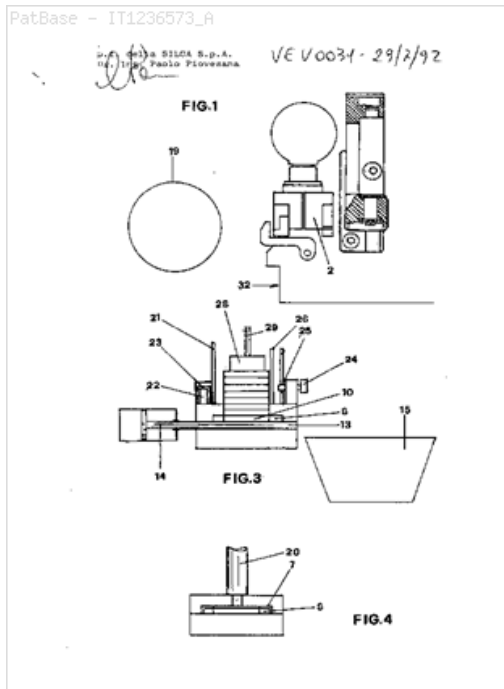
Title: Automatic feed device for **keys** for stored-code **duplicating machine**

Abstract: Source: IT1236573A Automatic feed device for **keys** for **duplicating machine** with stored coding comprising on a body (4):- a clamp (5) with mechanized action for the blank **keys** (3) to be coded,- a magazine (21) for the piled blank **keys** (3),- an input-output unit lined up with the said clamp (5) and provided with an interchangeable member (8) in which is received an imprint (10) compatible with the shape of the said blank **key** (3), said member (8) being movable between a position for taking up the said **key** from the magazine (21) and a position of inserting the said **key** between the jaws of the clamp (5),- a mechanically actuated gauge (17) synchronized with actuation of the said input-output unit (8) and the said clamp (5) for defining the correct position of the **key** (3) with respect to the said clamp before it closes,- an ejector (13) of the coded **key** towards an external collecting container (15).Fig. 2

Classifications:

International (IPC 8-9): B23P (Subclass/Invention)

International (IPC 1-7): B23P



Family:

Publication number	Publication date	Application number	Application date
IT1236573 A	19930311	IT19890084153	19890908
IT8984153 A0	19890908	IT19890084153	19890908

Priority:

IT19890084153 19890908

Probable Assignee:

Assignee(s): (std):

Assignee(s):

Inventor(s): (std):

Inventor(s):

SILCA SPA

SILCA SPA

SILCA S P A

BIANCHI MASSIMO

MASSIMO BIANCHI

Title: KEY DUPLICATING MACHINE.

Abstract: Source: EP0614717A1 A **duplicating machine** for bitted **keys**, double-bitted **keys** and the like, with a clamp (22, 22') for an original **key** (10) and, for a blank **key** (28) to be **duplicated**, a clamp (30) mounted on a carriage (26) movable in a plane in two directions perpendicular to a cutter (4) **acting** on said blank **key** (28) in order to cut it, characterised in that on said carriage (26) there are mounted: for the blank **key** (26), the clamp (30) provided with self-centering grippers (32) for gripping the blank **key** shank and also provided with a head retention member (45), said clamp (30) being rotatable in both directions about the axis of said shank and being positionable along said carriage (26) parallel to said axis, and an idle holding centre (38) coaxially facing said rotatable clamp (30) and positionable along said carriage (26) independently of said clamp.

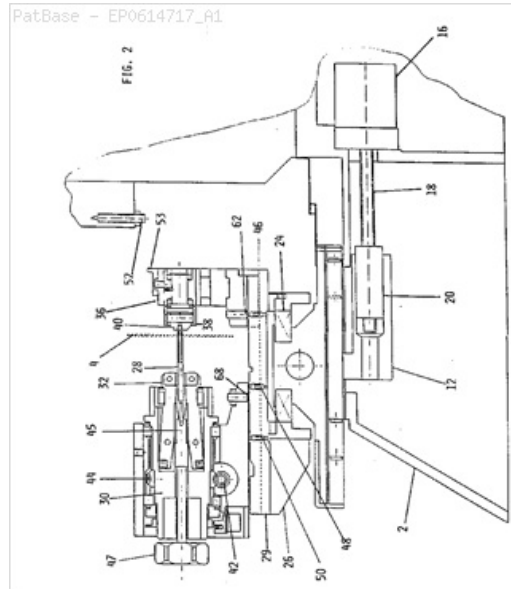
Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention);
B23C (Subclass/Invention)

International (IPC 1-7): B23C 1/0 B23C 3/35

CPC: B23C 3/35

European: B23C3/35



Family:

Publication number	Publication date	Application number	Application date
AT158209 E	19971015	AT19940102211T	19940214
DE69405611 D1	19971023	DE19946005611	19940214
DE69405611 T2	19980226	DE19946005611T	19940214
EP0614717 A1	19940914	EP19940102211	19940214
EP0614717 B1	19970917	EP19940102211	19940214
ES2108310 T3	19971216	ES19940102211T	19940214
IT1265996 B1	19961216	IT1993VE00006	19930305
ITVE930006 A0	19930305	IT1993VE00006	19930305
ITVE930006 A1	19940906	IT1993VE00006	19930305

Priority:

IT1993VE00006 19930305

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Assignee(s): SILCA S P A ; SILCA S P A VITTORIO VENETO TREVISO IT

Inventor(s): (std): FOSCAN EROS ; ROSSETTO LUIGI

Inventor(s): ROSSETTO LUIGI I 31029 VITTORIO VENETO IT ; FOSCAN EROS I 31029 VITTORIO VENETO IT

Designated states: AT BE CH DE ES FR GB IT LI NL PT SE

Title: **DUPLICATING MACHINE** FOR SECURITY **KEYS**

Abstract: Source: US5441369A A code-**duplicating machine** for security **keys** usable in cylinder locks with a bolt operable by a plug and with a plurality of pins operable axially and rotatably by a cut **key** inserted into said plug to release it and enable it to rotate. The **machine** comprises a cutter (6), a clamp (14) for a **key** (8) to be cut, and means for causing said clamp (14) and said cutter (6) to undergo mutual movement resulting in said **key** being cut in accordance with a predetermined code.

Classifications:

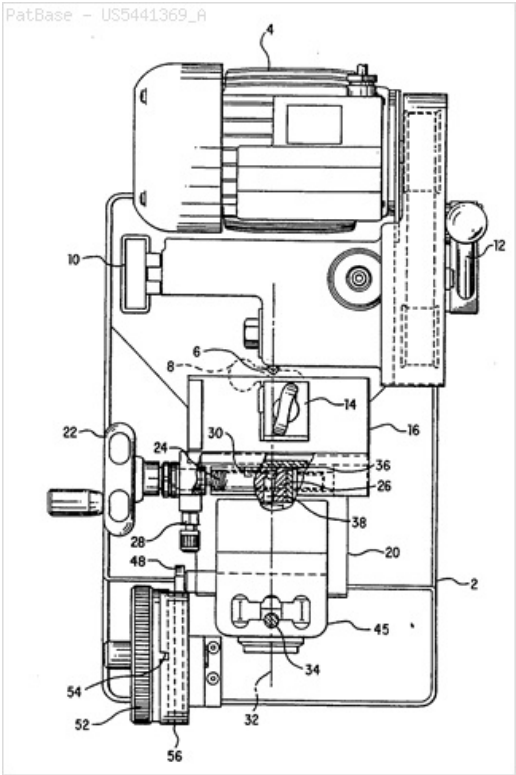
International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

International (IPC 1-7): B23C3/35 B23Q

CPC: Y10T409/300952 B23C3/35

European: B23C3/35

US: 409/81 76/110



Family:

Publication number	Publication date	Application number	Application date
DE69516260 D1	20000518	DE19956016260	19950125
EP0723831 A1	19960731	EP19950100943	19950125
EP0723831 B1	20000412	EP19950100943	19950125
IT1266760 B1	19970114	IT1993VE00022	19930729
ITVE930022 A0	19930729	IT1993VE00022	19930729
ITVE930022 A1	19950130	IT1993VE00022	19930729
US5441369 A	19950815	US19940220029	19940330

Priority:

EP19950100943 19950125 IT1993VE00022 19930729

Probable Assignee: SILCA SPA

Assignee(s): (std): FOSCAN EROS ; ROSSETTO LUIGI ; SILCA S P A ; SILCA SPA

Assignee(s): SILCA S P A VITTORIO VENETO

Inventor(s): (std): FOSCAN EROS ; ROSSETTO LUIGI

Designated states: DE FR GB IT NL SE

Title: **DUPLICATING MACHINE**, PARTICULARLY FOR PUNCHED AND LASER **KEYS**

Abstract: Source: US5833406A PCT No. PCT/EP95/00675 Sec. 371 Date Jul. 3, 1996 Sec. 102(e) Date Jul. 3, 1996 PCT Filed Feb. 24, 1995 PCT Pub. No. WO95/23666 PCT Pub. Date Sep. 8, 1995A **duplicating machine** for punched and laser **keys**. The **machine** has on a base two clamps moving simultaneously in a horizontal plane for an original **key** to be **uplicated** and for a **key** blank to be cut, and a carriage moving vertically relative to the clamps and supporting by means of self-centering chucks, a feeler above the original **key** and a cutter above the blank **key**, the height of the feeler above its clamp being adjustable independently of the cutter.

Classifications:

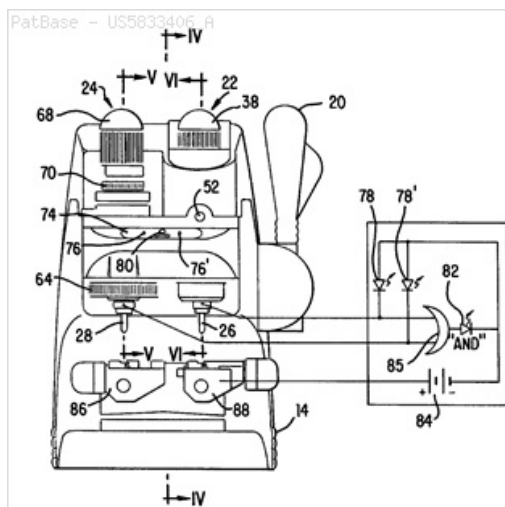
International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)

International (IPC 1-7): B23C3/35

CPC: Y10T409/300952 Y10T409/308064 Y10T409/309352 B23C3/35
B23C2235/04

European: B23C3/35 L23C235/04

US: 409/208 409/231 409/81



Family:

Publication number	Publication date	Application number	Application date
AU199518916 A1	19950918	AU19950018916	19950224
AU682260 B2	19970925	AU19950018916	19950224
DE69500530 D1	19970911	DE19956000530	19950224
DE69500530 T2	19980212	DE19956000530T	19950224
EP0746439 A1	19961211	EP19950911264	19950224
EP0746439 B1	19970806	EP19950911264	19950224
ES2105894 T3	19971016	ES19950911264T	19950224
ITVE940011 A0	19940304	IT1994VE00011	19940304
ITVE940011 A1	19950904	IT1994VE00011	19940304
JP9509895 T2	19971007	JP19950522677T	19950224
US5833406 A	19981110	US19960669307	19960703
WO9523666 A1	19950908	WO1995EP00675	19950224

Priority:

IT1994VE00011 19940304 WO1995EP00675 19950224

Probable Assignee: SILCA SPA

Assignee(s): (std): CHIES EZIO ; MARCON FEDERICO ; MET AR PLASTIC S P A ; SILCA SPA

Assignee(s): SILCA S P A ; SILCA S P A VITTORIO VENETO TREVISO IT

Inventor(s): (std): CHIES EZIO ; MARCON FEDERICO

Inventor(s): MARCON FEDERICO I 31015 CONEGLIANO IT ; CHIES EZIO I 31014 COLLE UMBERTO IT ; EZIO CHIES ; FEDERICO MARCON

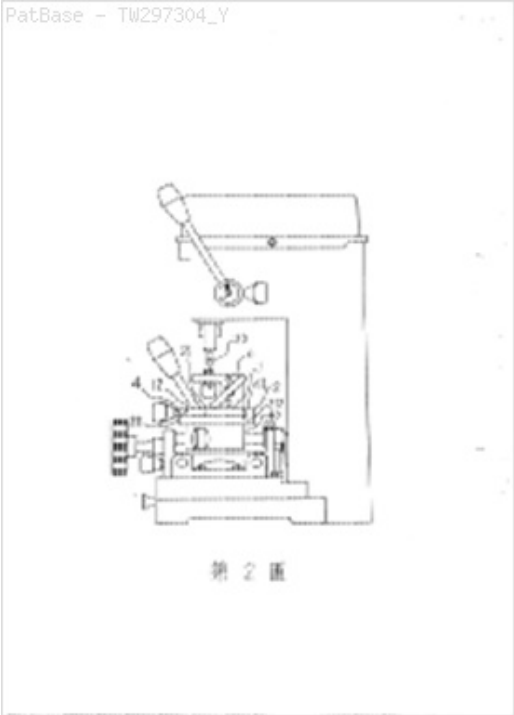
Agent(s): GRIFFITH HACK

Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IT JP KE KG KP KR KZ LI LK LR LT LU LV MC MD MG ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SN SZ TD TG TJ TT UA UG US UZ VN

Title: **KEY DUPLICATOR** WITH MOBILE HOLDER CLAMPING SEAT

Abstract: Source: TW297304Y Having a movable clamp retaining the seat of the **keys** copy **machine**, characterized in that the movable clamp retainer holder is provided at a position just below the copy **machine** to copy the **keys** of the tool and the copy of the guide pin, including a well-jig retaining seat and a female jig retaining seat, the master jig retaining seat system into a plate, its top surface has a lateral opening through the channel, the side walls of the channel into a vertical wall, while the other opposing side walls are formed into an inward and a 60 degrees angle downward slope, the male jig retaining seat system into a tablet, so that its placement jig on which side edge is formed into an outwardly and downwardly projecting a 85 degrees angle of slope, and the other opposite side edge is formed into an outwardly and downwardly projecting a 60 degrees angle of the bevel, bevel seat of the holding is consistent with the master fixture card, with the agreement of the two ramps to make the entire public jig retaining seat, along the master jig retaining the seat of lateral breaking through the channel can be set into the landscape and engaged within the channel.

Classifications:
International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/35 (Core/Non-invention)
International (IPC 1-7): B23C3/35



Family:

Publication number	Publication date	Application number	Application date
TW297304 Y	19970201	TW19960211944U	19960803

Priority:
TW19960211944U 19960803

Assignee(s): (std): EAST OF WU CO LTD
Assignee(s): EAST OF WU CO LTD TW ; EAST OF WU CO
Inventor(s): (std): WU KUO SHEN

Title: KEY CUTTING MACHINE WITH KEY TRACING AND ELECTRONIC CODE CUTTING DUPLICATION MODES

Abstract: Source: US5676504A A key cutting machine includes a cutter wheel, a key follower and a key positioning fixture for retaining a master key and a key blank in defined positions. Longitudinal and lateral displacement elements displace the cutter wheel and the key blank relative to each other. First and second electronic position sensors generate cutter wheel longitudinal and lateral position signals which electrically define the position of the cutter wheel relative to the key blank blade. A mode control system selectively operates the key cutting machine in either an analog mode where the bit notch pattern of a master key is mechanically traced and duplicated in the key blade blank or in a digital mode in which an electronically defined bit notch pattern is electrically duplicated in the key blank blade without reference to or tracing the master key bit notch pattern.

Classifications:

International (IPC 8-9): B23C3/30 B23C3/35 B23D1/00 B23D13/00 B23Q35/00 B23Q35/10 (Advanced/Invention); B23Q35/00 (Advanced/Non-invention); B23C3/00 B23Q35/00 (Core/Invention)

International (IPC 1-7): B23C1/16 B23C3/30 B23C3/35 B23D1/00 B23D13/00 B23Q35/00 B23Q35/10

CPC: Y10T409/300952 Y10T409/301064 B23C3/35 B23C2235/24

European: B23C3/35 L23C235/24

US: 364/474.03 409/81 409/83 700/161 76/110

PatBase - US5676504_A

U.S. Patent Oct. 14, 1997 Sheet 1 of 16 5,676,504

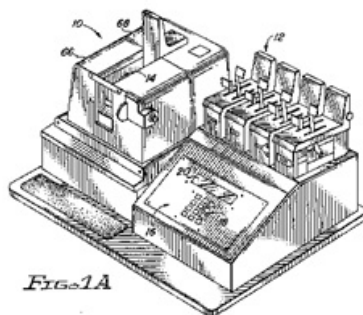


Fig. 1A

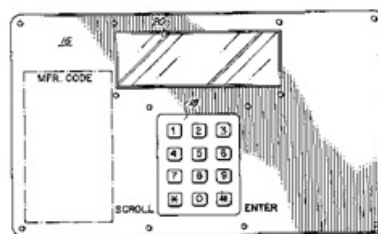


Fig. 1B

Family:

Publication number	Publication date	Application number	Application date
AU199675305 A1	19970619	AU19960075305	19961211
AU686055 B2	19980129	AU19960075305	19961211
CA2169142 AA	19970615	CA19962169142	19960208
CA2169142 C	20000822	CA19962169142	19960208
DE69624547 D1	20021205	DE19966024547	19961118
DE69624547 T2	20030618	DE19966024547T	19961118
EP0779120 A1	19970618	EP19960118450	19961118
EP0779120 B1	20021030	EP19960118450	19961118
JP3001444 B2	20000124	JP19960335903	19961216
JP9216112 A2	19970819	JP19960335903	19961216
US5676504 A	19971014	US19950572766	19951214

Priority:

CA19962169142 19960208 US19950572766 19951214

Probable Assignee: HILLMAN GROUP INC

Assignee(s): (std): ACCESS TECHNOL INC ; AXCESS TECH INC ; AXCESS TECHNOLOGIES INC

Assignee(s): AXCESS TECHNOLOGIES INC (THE HILLMAN GROUP INC) ; AXCESS TECHNOLOGIES INC THE HILLMAN GROUP INC ; HILLMAN GROUP INC ; HELLER FINANCIAL INC ; MERRILL LYNCH CAPITAL A DIVISION OF MERRILL LYNCH ; BARCLAYS BANK PLC AS COLLATERAL AGENT ; BARCLAYS BANK PLC COLLATERAL AGENT AS ; HILLMAN GROUP INC (F K A AXCESS TECHNOLOGIES INC) ; HILLMAN GROUP INC F K A AXCESS TECHNOLOGIES INC ; HEREDIA GEORGE L ; CARLSON BRADLEY DEE ; WELLS FARGO BANK NATIONAL ASSOCIATION ; WELLS FARGO BANK NA ; PNC BANK NATIONAL ASSOCIATION AS AGENT ; WELLS FARGO BANK ; PNC BANK NATIONAL ASSOCIATION AGENT AS ; MUELLER MICHAEL A ; MERRILL LYNCH CAPITAL A DIVISION OF MERRILL LYNCH BUSINESS FINANCIAL SERVICES INC

Inventor(s): (std): BRADLEY DEE CARLSON ; BURATSUDORII DEII KAARUSON ; CARLSON BRADLEY DEE ; GEORGE L HEREDIA ; HEREDIA GEORGE L ; JIYOOJI ERU HEREDIA ; JOOJI ERU HEREDIA ; MAIKERU EI MIYUURAA ; MAIKERU EI MIYUURAA ; MICHEAL A MUELLER ; MUELLER MICHAEL A ; MUELLER MICHEAL A

Agent(s): FB RICE; SMART AND BIGGAR

Designated states: DE FR GB IT

Title: **KEY DUPLICATION** APPARATUS AND METHOD

Abstract: Source: US5908273A In a method and apparatus for **duplicating** an original **key** , the keyway and keycode of the original **key** are measured and **duplicated** in a preform. The preform used in the **duplication** process need not include any keyway or keycode prior to the **duplication** process and, therefore, a single type of preform may be used in generating **duplicates** of many different types of **keys** . The apparatus may be automated to take the measurements of the original **key** and to cut the **duplicate key** , thus reducing the possibility of producing a nonfunctional **duplicate** .

Classifications:

International (IPC 8-9): B23C3/35 B23Q35/128 E05B17/00

G01B11/25 (Advanced/Invention);

E05B19/00 (Advanced/Non-invention);

B23C3/00 E05B17/00 G01B11/24 (Core/Invention);

E05B19/00 (Core/Non-invention)

International (IPC 1-7): B23C1/16 B23C3/00 B23C3/35 B23Q35/128 E05B17/00 G01B11/24

CPC: E05B17/0004 E05B19/00 G01B11/25 Y10T409/300896

Y10T409/300952 Y10T409/301064 Y10T409/301792 Y10T409/30196

Y10T409/303808 Y10T409/30112 B23C3/35 B23C2235/28

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European: B23C3/35 E05B17/00B G01B11/25 L23C235/28

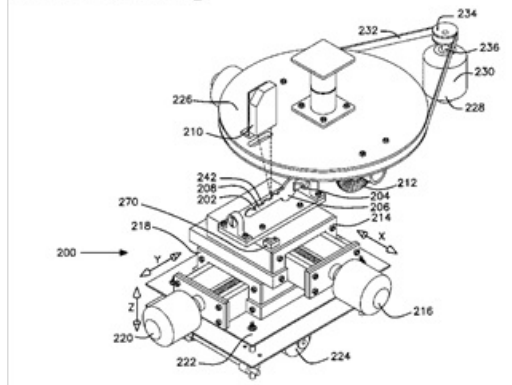
L23C235/32 P05B19/00

US: 250/202 356/376 356/607 356/613 364/474.03 409/132 409/80

409/81 409/83 409/84 409/96 409/99 700/161 700/163 700/195

76/110

PatBase - US5908273_A



Family:

Publication number	Publication date	Application number	Application date
AU199886684 A1	19990222	AU19980086684	19980729
AU2001231261 AA	20010814	AU20010231261	20010131
CA2298503 AA	20000128	CA19982298503	19980729
DE69819158 D1	20031127	DE19986019158	19980729
DE69819158 T2	20040708	DE19986019158T	19980729
EP0999916 A1	20000517	EP19980938080	19980729
EP0999916 B1	20031022	EP19980938080	19980729
EP1257782 A1	20021120	EP20010903453	20010131
ES2209178 T3	20040616	ES19980938080T	19980729
US5908273 A	19990601	US19970903561	19970731
US6152662 A	20001128	US19980122248	19980724
US6406227 BA	20020618	US20000495090	20000201
WO0157472 A1	20010809	WO2001US03196	20010131
WO9906179 A1	19990211	WO1998US15671	19980729

Priority:

US19970903561 19970731 US19980122248 19980724 WO2001US03196 20010131
 WO1998US15671 19980729 US20000495090 20000201

Probable Assignee: MACHINE MAGIC LLC

Assignee(s): (std): MACH MAGIC L L C ; MACH MAGIC LLC ; TITUS JOHN S ; BOLKCOM JOHN E ; MACHINE MAGIC LLC

Assignee(s): MACHINE MAGIC L L C MINNETONKA ; LAUGHLIN WILLIAM ; MACHINE MAGIC L L C ; APPLICATION SERVICE CO

Inventor(s): (std): BOLKCOM E ; BOLKCOM JOHN E ; BOLKCOM JOHN EVAN ; JOHN E BOLKCOM ; JOHN S TITUS ; LAUGHLIN WILLIAM ; TITUS JOHN S ; TITUS S ; WILLIAM LAUGHLIN

Agent(s): ROBIC

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Title: KEY DUPLICATING MACHINE

Abstract: Source: US6602030B A **key duplicating machine** includes a housing and an electrical motor mounted therewithin. Two rotatable machining heads are powered by the motor for forming **key** cuts on a **key** blank. A **key** blank clamping assembly securely and removably mounts a **key** blank during engagement thereof with the machining heads. A **key** blank translation assembly selectably positions the **key** blank clamping assembly such that a **key** blank mounted thereon is brought into desired engagement with the machining heads. A user controllable tumbler disk assembly operatively associated with the machining heads selectably determines the depth of the **key** cuts formed thereby on a **key** blank mounted on the **key** blank clamping assembly. The **key** blank translation assembly includes a guide wire disposed below the machining heads such that debris from formation of the **key** cuts does not tend to collect thereon and interfere with translation of the **key** blanking clamping assembly.

Classifications:

International (IPC 8-9): B23C3/35 E05B19/00 (Advanced/Invention);

E05B19/00 (Advanced/Non-invention);

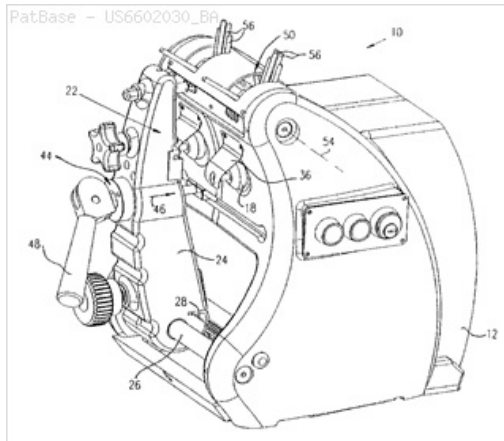
B23C3/00 E05B19/00 (Core/Invention)

International (IPC 1-7): B23C B23C3/35

CPC: B23C3/35 Y10T409/300952 Y10T409/301008

European: B23C3/35

US: 409/81 409/82

**Family:**

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AT217227 E	20020515	AT19990925260T	19990608
AU199941626 A1	19991230	AU19990041626	19990608
BRPI9911075 A	20010220	BR1999PI11075	19990608
CA2333084 AA	20001121	CA19992333084	19990608
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CN1108218 C	20030514	CN19998007204	19990608
CN1305401 A	20010725	CN19998007204	19990608
CZ20004478 A3	20010815	CZ20000004478	19990608
CZ295064 B6	20050518	CZ20000004478	19990608
DE69901448 D1	20020613	DE19996001448	19990608
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ES2177279 T3	20021201	ES19990925260T	19990608
HK1039762 A1	20031114	HK20020100542	20020124
HU0102289 AB	20011028	HU20010002289	19990608
HU0102289 AC	20011128	HU20010002289	19990608
HU223904 B1	20050329	HU20010002289	19990608
ID26918 A	20010222	ID20000002558	19990608
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JP4377057 B2	20091202	JP20000553243T	19990608
KR100575053 B1	20060428	KR20007013831	19990608
MXPA00012158 A1	20030422	MX2000PA12158	19990608
NO20006189 A	20001206	NO20000006189	20001206
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NO321245 B1	20060410	NO20000006189	20001206
PL189891 B1	20051031	PL19990344669	19990608
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UA64001 C2	20010917	UA20000126984	19990608
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Priority:

IL19980124815 19980608

KR20007013831 20001206

WO1999IL00307 19990608

Probable Assignee: MUL T LOCK TECHNOLOGIES LTD

Assignee(s): (std): MARKBREIT DANI ; MUL T LOCK TECHNOLOGIES LTD ; MULTI T LOCK TECHNOLOGIES LTD

Assignee(s): MUL T LOCK TECHNOLOGIES LTD YAVNE

Inventor(s): (std): MARKBREIT DANI ; DANI MARKBREIT

Agent(s): BULL HOUSSEY AND TUPPER LLP; SANFORD TCOLB AND CO; MASUI CHUJI; SHAMOTO ICHIO; ITOH SHIGERU; KOBAYASHI YASUSHI; TOMITA HIROYUKI

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZA ZW

Title: METHOD TO IDENTIFY A **KEY** PROFILE, **MACHINE** TO IMPLEMENT THE METHOD AND APPARATUS FOR THE **DUPLICATION** OF **KEYS** UTILIZING THE **MACHINE**

Abstract: Source: US6895100B A method to identify a **key** profile, comprising: illuminating with two laminar beams emitted by two laser light sources said two sides of said shank of a **key** driven to move axially relative to said beams, reading with two video cameras, fixed relative to said sources and having their optical axis inclined to said planes in which said light beams lie, said two light profiles formed by said laminar beams striking said two surfaces of said shank of said **keys**, digitizing said optical images read in this manner, to obtain two sequences of signals representative of said profiles of said two lateral surface portions of said **key**, as instantaneously illuminated by said laminar beams and read by said video cameras, reconstructing from said signals, by means of a processor unit, a signal representative of the entire **key** profile, and comparing said thus reconstructed signal with said signal representative of profiles stored in said processor unit to obtain data identifying said profile of said read **key**.

Classifications:

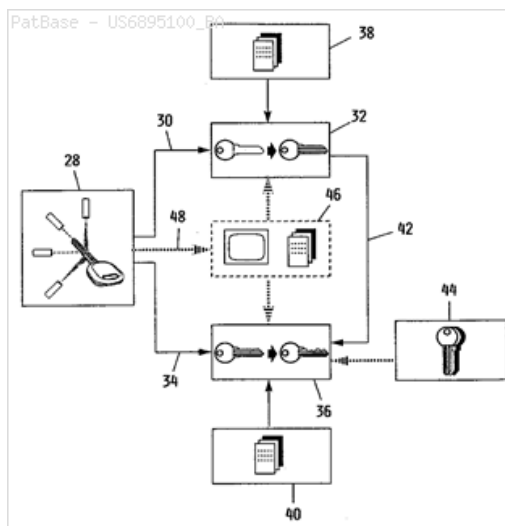
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International (ipc 1-7): B23C3/35 E05B G01B G06K9/00

CPC: Y10T409/300952 B23C3/35 G06K9/00 E05B19/0011

European: B23C3/35 G06K9/00

US: 358/540 382/100 409/81 76/110



Family:

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AT225060 E	20021015	AT20000909289T	20000302
AU200031626 A5	20000928	AU20000031626D	20000302
CA2365738 AA	20010831	CA20002365738	20000302
CA2365738 C	20090721	CA20002365738	20000302
DE60000511 D1	20021031	DE20006000511	20000302
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ES2182790 T3	20030316	ES20000909289T	20000302
IT1311781 B1	20020319	IT1999VE00010	19990305
ITVE990010 A1	20000905	IT1999VE00010	19990305
US6895100 BA	20050517	US20010890450	20010801
WO0054212 A1	20000914	WO2000EP01792	20000302

Priority:

IT1999VE00010 19990305 WO2000EP01792 20000302

Probable Assignee: SILCA SPA

Assignee(s): (std): CASAGRANDE ETTORE ; FOSCAN EROS ; PACENZIA STEFANO ; SILCA SPA

Assignee(s): SILCA S P A ; SILCA S P A VITTORIO VENETO

Inventor(s): (std): CASAGRANDE ETTORE ; FOSCAN EROS ; PACENZIA STEFANO

Inventor(s): STEFANO PACENZIA ; EROS FOSCAN ; ETTORE CASAGRANDE

Agent(s): ROBIC ; BIRCH STEWART KOLASCH AND BIRCH LLP

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Title: APPARATUS FOR PRODUCING **KEY** BLANKS

Abstract: An apparatus for producing **key** blanks, characterised by comprising: at least one clamp (14) for clamping a possibly pre-machined **key** stamping (16) in which the grooves corresponding to the profile to be obtained are to be formed in sequence, at least one milling cutter (36, 36', 36'') of shape compatible with the profile of the **key** to be obtained, means (5, 12, 28) for moving said clamp (14) relative to said milling cutter (36, 36', 36'') at least in the three perpendicular directions related to the shank of said **key** stamping (16), a memory containing stored data relative to the parameters of the different types of **key** profiles, a unit (38, 40) for acquiring data corresponding to the values of said parameters and for memorizing them in said memory, a unit for controlling said movement means (5, 12, 28) on the basis of the previously acquired values of said parameters.

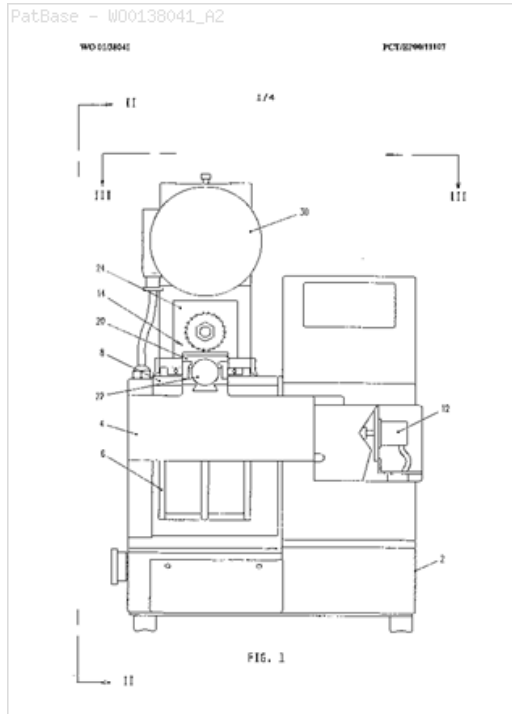
Classifications:

International (IPC 8-9): B23C3/35 B23P15/00 (Advanced/Invention); B23C3/00 B23P15/00 (Core/Invention)

International (IPC 1-7): B21D B23C3/35 B23P15/00 B23Q E05B

CPC: B23C3/35 B23P15/005

European: B23C3/35 B23P15/00D



Family:

Publication number	Publication date	Application number	Application date
AU200112791 A5	20010604	AU20010012791D	20001110
CA2388170 AA	20020419	CA20002388170	20001110
IT1311805 B1	20020319	IT1999VE00045	19991123
ITVE990045 A1	20010523	IT1999VE00045	19991123
WO0138041 A2	20010531	WO2000EP11107	20001110
WO0138041 A3	20020510	WO2000EP11107	20001110

Priority:

IT1999VE00045 19991123 WO2000EP11107 20001110

Probable Assignee: SILCA SPA

Assignee(s): (std): CHIES EZIO ; FOSCAN EROS ; PACENZIA STEFANO ; SILCA S P A ; SILCA SPA

Inventor(s): (std): CHIES EZIO ; FOSCAN EROS ; PACENZIA STEFANO

Inventor(s): STEFANO PACENZIA ; EROS FOSCAN ; EZIO CHIES

Agent(s): GRIFFITH HACK; ROBIC

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Title: **KEY DUPLICATION** ATTACHMENT DEVICE FOR ROTARY TOOL WITH PROFILED ABRASIVE CUTTER

Abstract: Source: US2002119739A A **key** grinding **duplicating** attachment that includes a base with upright bearing supports juxtaposed which supports a horizontal guide bar transporting control housing assembly. Said assembly movement being slidable on a horizontal axis, swingable upward and downward in contact with top edge of the **keys**. Base solid mount angled vise support uprights with clamping vises juxtaposed for specimen and blank **keys**. The said transporting control housing assembly supports a modulate direct output rotary tool high speed high torque motor or an equivalent, profiled abrasive **key** grinder arbor assembly, a juxtaposed profiled stylus in line. An effortless means to produce usable **duplicated keys** continually.

Classifications:

International (IPC 8-9): B23C1/16 B23C3/35 B24B1/00 B24B27/02 B24B55/04 (Advanced/Invention);

B23C3/00 B24B27/00 B24B55/00 (Core/Invention)

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CPC: Y10T409/30112 B23C3/35 B24B27/02 B24B55/04

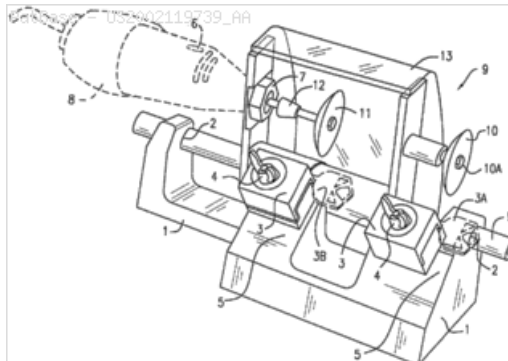
Y10T409/300952

European: B23C3/35 B24B27/02 B24B55/04

US: 409/81 409/81S 409/84 409/84S 451/125 451/178 451/178P

451/178S 451/237 451/237P 451/28 451/28P 451/45 451/451

451/451S 451/452 76/110



Family:

Publication number	Publication date	Application number	Application date
US2002119739 AA	20020829	US20010792378	20010223
US2003129930 AA	20030710	US20030373443	20030225
US2007105484 AA	20070510	US20060646140	20061227
US7210986 BB	20070501	US20030373443	20030225
US7530884 BB	20090512	US20060646140	20061227

Priority:

US20010792378 20010223 US20030373443 20030225 US20060646140 20061227

Probable Assignee: BAKER EDWARD

Assignee(s): (std): BAKER EDWARD ; PARILLO MICHAEL

Assignee(s): PARILLO MICHAEL ANTHONY

Inventor(s): (std): BAKER EDWARD ; PARILLO MICHAEL ; PARILLO MICHAEL ANTHONY

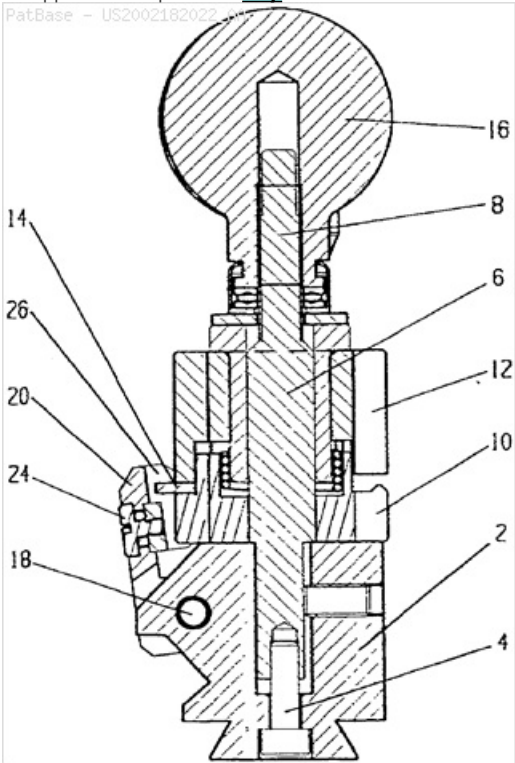
Agent(s): BRIAN DINICOLA; BRIAN K; DINICOLA BRIAN K

Title: CLAMP FOR A KEY DUPLICATING MACHINE

Abstract: Source: US2002182022A An improved clamp for key duplicating machines, comprising a pair of jaws able to approach each other and define at least one seat for clamping a key, and a gauge associable with said seat to define a correct position of said key, wherein with said gauge there is slidably associated a counteracting element which interferes with said seat when said gauge is in its operating condition and forms a support for a tip of said key housed in said seat.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)
International (IPC 1-7): B23C3/00 B23C3/35 B23Q
CPC: Y10T409/300952 Y10T409/309016 B23C3/355
European: B23C3/35B
US: 269/303 269/315 409/225 409/81



Family:

Publication number	Publication date	Application number	Application date
ITVE20010028 A1	20021202	IT2001VE00028	20010601
US2002182022 AA	20021205	US20010944168	20010904
US6641339 BB	20031104	US20010944168	20010904

Priority:

IT2001VE00028 20010601

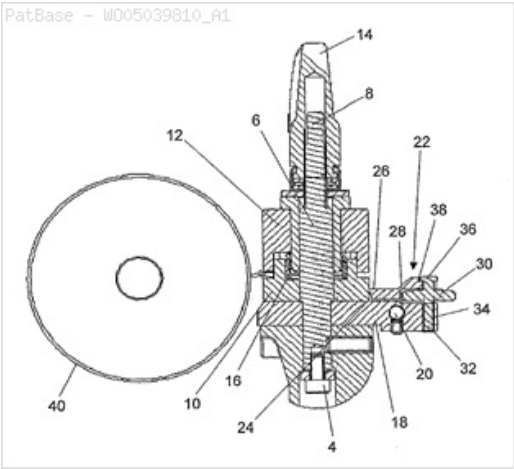
Probable Assignee: SILCA SPA
Assignee(s): (std): CHIES EZIO ; FOSCAN EROS ; SILCA SPA
Assignee(s): SILCA S P A
Inventor(s): (std): CHIES EZIO ; FOSCAN EROS

Title: IMPROVED CLAMP FOR A KEY DUPLICATING MACHINE

Abstract: An improved clamp for a key duplicating machine comprising a threaded vertical pin (6, 8) rigid with a carriage (2) and engaged in two jaws (10, 12) retained by a knob (14), Wherein, on a flat jaw face, a counteracting member (22) is comprised the distance of which from the jaw hole axis can be adjusted while always maintaining the jaw contacting surface parallel to itself.

Classifications:

International (ipc 8-9): B23C3/00 B23C3/35 B25B5/08 B25B5/10 B25B5/16 E05B19/00 (Advanced/Invention); B23Q3/06 (Advanced/Non-invention); B23C3/00 B25B5/00 E05B19/00 (Core/Invention); B23Q3/06 (Core/Non-invention)
International (ipc 1-7): B23C3/35 B25B5/08 B25B5/10
CPC: B23C3/355 B25B5/10 B25B5/16
European: B23C3/35B B25B5/10 B25B5/16



Family:

Publication number	Publication date	Application number	Application date
AT394188 E	20080515	AT20040790667T	20041020
DE602004013627 D1	20080619	DE200460013627T	20041020
EP1694459 A1	20060830	EP20040790667	20041020
EP1694459 B1	20080507	EP20040790667	20041020
ES2305867 T3	20081101	ES20040790667T	20041020
ITVE20030045 A1	20050423	IT2003VE00045	20031022
JP2007509261 T2	20070412	JP20060536036T	20041020
JP4607891 B2	20110105	JP20060536036T	20041020
WO05039810 A1	20050506	WO2004EP11859	20041020

Priority:

IT2003VE00045 20031022 WO2004EP11859 20041020

Probable Assignee: SILCA SPA

Assignee(s): (std): DA RODDA ORESTE ; PERENCIN AMEDEO ; SILCA SPA

Assignee(s): SILCA S P A ; SILCA S P A VITTORIO VENETO

Inventor(s): (std): DA RODDA ORESTE ; PERENCIN AMEDEO

Agent(s): PIOVESANA PAOLO

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: **KEY CUTTING MACHINE**

Abstract: Source: US2005135891A A **key** cutting **machine** having a vacuum port connected to the housing and capable of removeably connecting a vacuum tube thereto so that when the vacuum tube is connected to the vacuum port the vacuum tube is capable of collecting **key** shavings created during a **key** cutting operation and, when the vacuum tube is disconnected from vacuum port, the vacuum tube can be used to collect **key** shavings on or surrounding the **key** cutting **machine**. Additional improvements or features of a **key** cutting **machine** are also described.

Classifications:

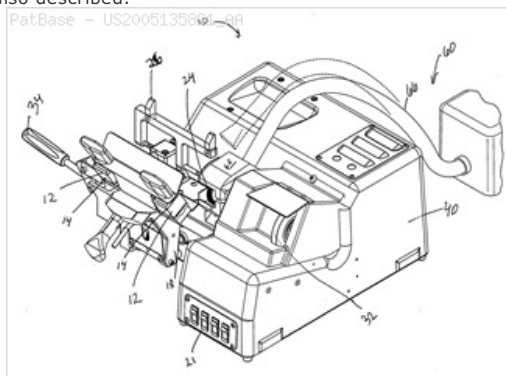
International (IPC 8-9): B23C1/16 B23C3/00 B23C3/35 B23Q11/00 B23Q11/08 (Advanced/Invention)

International (IPC 1-7): B23C3/00 B23C3/35

CPC: B23Q11/075 B23Q11/08 B23Q11/0075 B23C2235/00 B23C2230/08 B23Q11/005 B23C3/35 B23Q11/0046 Y02P70/171 Y10T409/300952 Y10T409/301008 Y10T409/301064 Y10T409/30392 Y10T409/304088 Y10T409/305544 B23C2235/48

European: B23C3/35 B23Q11/00F1 L23C230/08

US: 409/134 409/137 409/137S 409/163 409/81 409/81P 409/82 409/82S 409/83



Family:

Publication number	Publication date	Application number	Application date
DE602004048941 D1	20160512	DE200460048941T	20041020
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EP1677933 B1	20160330	EP20040796014	20041020
ES2575982 T3	20160704	ES20040796014T	20041020
US2005135891 AA	20050623	US20040970844	20041020
US2007274796 AA	20071129	US20070728174	20070323
US2009311064 AA	20091217	US20090383825	20090327
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US2014321935 AA	20141030	US20140310729	20140620
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US7527458 BB	20090505	US20070728174	20070323
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US8784020 BB	20140722	US20120647006	20121008
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WO05042196 A1	20050512	WO2004US34947	20041020

Priority:

EP20040796014	20041020	US20030512636P	20031020	US20040970844	20041020
WO2004US34947	20041020	US20120647006	20121008	US20090383825	20090327
US20070728174	20070323	US20140310729	20140620	US20170408782	20170118

Probable Assignee: HY KO PRODUCTS CO

Assignee(s): (std): BASS MICHAEL A ; HY KO PRODUCTS ; HY KO PRODUCTS CO ; HY KO PRODUCTS CO INC ; RYAI RICHARD W SR ; HY KO PRODUCTS COMPANY ; RYAI SR RICHARD WM ; HY KO PRODUCTS COMPANY INC

Assignee(s): KEYBANK NATIONAL ASSOCIATION ; HY KO PRODUCTS CO WALTON HILLS ; RYAI RICHARD WSR

Inventor(s): (std): BASS MICHAEL ; BASS MICHAEL A ; RYAI RICHARD ; RYAI RICHARD W SR ; RYAI RICHARD WILLIAM SR ; RYAI SR RICHARD W ; RYAI SR RICHARD WM

Inventor(s): SR RICHARD WM ; RYAI RICHARD WILLIAM SR NORTH ROYALTON ; RYAI RICHARD WM ; RYAI RICHARD WSR ; BASS MICHAEL A CHAGRIN FALLS ; RYAI

Agent(s): PATENTANWALTE SAMSON AND PARTNER; WILSON ALAN STUART; ARIAS JUAN; MCDONALD HOPKINS CO LPA; MCDONALD HOPKINS LLC; DAVID J; ROBERT H; EARP III ROBERT H

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: KEY DUPLICATION MACHINE

Abstract: Source: US2007224008A Apparatus, methods, and other embodiments associated with a **key duplication machine** are described. In one embodiment, an assembly for **duplicating** a master **key** includes an optical imaging device, a logic, a clamping assembly, and a cutting member. The optical imaging device is capable of capturing an optical image of at least a portion of the master **key**. The logic is capable of determining a **key** pattern of the master **key** from the optical image of the master **key**. The clamping assembly is capable of clamping a **key** blank and the cutting member is capable of cutting a **key** pattern into said **key** blank.

Classifications:

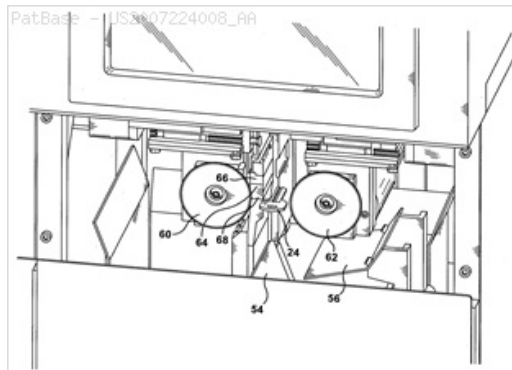
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G06K9/48 (Advanced/Invention);
B23C1/00 B23C3/00 (Core/Invention)

CPC: B23Q35/128 G06K9/2036 G06K9/48 G06K2209/401 B23C3/35 G06K9/20 G06K9/4661 B23B2270/32 B23C2235/08 B23C2235/12 B23C2235/41 B23P15/005 G06K7/10316 B23C2235/24 E05B19/0011 Y10T409/300952 Y10T409/301008 Y10T409/303808

European: B23C3/35 B23P15/00D B23Q35/128 G06K9/20E G06K9/46L G06K9/48 L23B270/32 L23C235/08 L23C235/12 L23C235/41 S06K209/401

US: 1/1 348/86 409/132 409/132P 409/81 409/81P 409/81S 409/82 409/82P 409/82S 409/83 700/161 76/110

**Family:**

Publication number	Publication date	Application number	Application date
CN101405104 A	20090408	CN200780009675	20070123
CN101405104 B	20110525	CN200780009675	20070123
DE602007039026 D1	20141211	DE200760039026T	20070123
EP1976656 A2	20081008	EP20070709849	20070123
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EP2517826 A1	20121031	EP20120003030	20120430
EP2517826 B1	20170208	EP20120003030	20120430
MX2008009440 A1	20081119	MX20080009440	20070123
US2007224008 AA	20070927	US20070656925	20070123
US2011164938 AA	20110707	US20110006714	20110114
US2011176881 AA	20110721	US20110015982	20110128
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US2012243957 AA	20120927	US20120435753	20120330
US2013294857 AA	20131107	US20130832299	20130315
US2015266110 AA	20150924	US20150629814	20150224
US2015306684 AA	20151029	US20150795397	20150709
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US2016375502 AA	20161229	US20160262714	20160912
US2016375503 AA	20161229	US20160262787	20160912
US2016375504 AA	20161229	US20160262851	20160912
US7891919 BB	20110222	US20070656925	20070123
US8128322 BB	20120306	US20110006714	20110114
US8985918 BB	20150324	US20110015982	20110128
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WO07087389 A2	20070802	WO2007US02015	20070123
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Priority:

EP20070709849	20070123	US20060761293P	20060123	US20070656925	20070123
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Probable Assignee: HY KO PRODUCTS CO

Assignee(s): (std): BASS MICHAEL A ; DRAKE ROBERT E ; FIORE THOMAS ; FIORE THOMAS F ; HY KO PRODUCTS ; HY KO PRODUCTS CO ; HY KO PRODUCTS COMPANY ; THOMPSON CHESTER O ; MUTCH WILLIAM R ; RYAI RICHARD W SR ; PORRAS RANDALL A ; RYAI SR RICHARD W ; THOMPSON III CHESTER O D ; THOMPSON CHESTER O D ; ZONZA JR JOHN E ; HY KO PRODUCTS INC

Assignee(s): HY KO PRODUCTS CO NORTHFIELD ; KEYBANK NATIONAL ASSOCIATION

Inventor(s): (std): FIORE THOMAS ; RYAI SR RICHARD W ; ZONZA JR JOHN E ; THOMPSON III CHESTER O D ; THOMPSON CHESTER O D ; THOMPSON CHESTER O ; RYAI RICHARD W SR ; RYAI RICHARD W ; PORRAS RANDALL A ; MUTCH WILLIAM R ; FIORE THOMAS F ; DRAKE ROBERT E ; BASS MICHAEL A

Inventor(s): RYAI RICHARD W SR ; THOMPSON CHESTER OD ; THOMPSON CHESTER O D PAINESVILLE ; RYAI RICHARD W SR NORTH ROYALTON ; PORRAS RANDALL A NORTH OLMSTED ; MUTCH WILLIAM R NORTH RIDGEVILLE ; DRAKE ROBERT E WILLOUGHBY HILLS ; BASS MICHAEL A CHAGRIN FALLS ; THOMPSON CHESTER ; THOMPSON III CHESTER OD ; BASS MICHAEL ; DRAKE ROBERT ; MUTCH WILLIAM ; PORRAS RANDALL ; RYAI RICHARD

Agent(s): LORENZ AND KOLLEGEN PATENTANWALTE PARTNERSCHAFTSGESELLSCHAFT MBB ; WILSON ALAN STUART ; MUELLER BORE AND PARTNER PATENTANWALTE ; MUELLER BORE AND PARTNER PATENTANWALTE PARTG MBB ; MCDONALD HOPKINS LLC ; CUPAR DAVID B

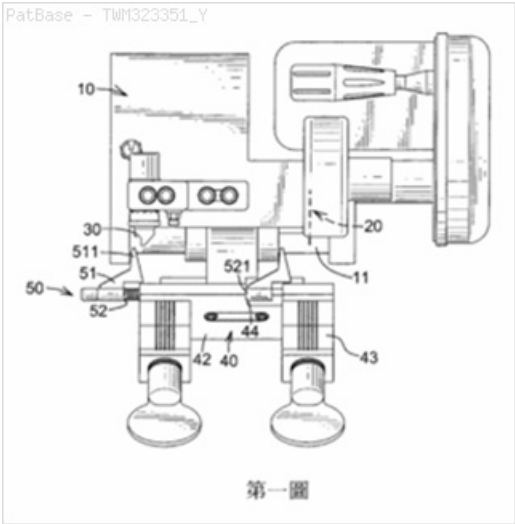
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MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST
SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Alignment apparatus for **key duplicator**

Abstract: Source: TWM323351Y

Machine translation: This creation is one kind of **duplication key machine** of positioning device, on its organism is equipped with a jig installment, is located in on the bridge joint department which the jig installs to put on is equipped with one may the affiliation elastic part return position finder of the home position, the position finder is equipped with corresponds localization block to the jig, the localization block returns after the home position may with the bridge joint department card system, therefore, the position finder may turn over to the position localization voluntarily after the use, has may guarantee its localization block not to be able to move in the cutting work to the work end place.

Classifications:
International (IPC 8-9): B23C3/35 (Advanced/Invention);
B23C3/00 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
TWM323351 Y	20071211	TW20070211627U	20070717

Priority:
TW20070211627U 20070717

Probable Assignee: EAST OF WU CO LTD
Assignee(s): (std): EAST OF WU CO LTD
Assignee(s): EAST OF WU CO
Inventor(s): (std): WU KUO SHEN

Title: CLAMP FOR A **KEY** CUTTING **MACHINE**

Abstract: Source: US2010059916A Clamp for **key** cutting **machines**, of the type comprising a pair of jaws (6, 10) mounted on a single pin (2) fixed to the **machine** structure and associated with a knob (22) screwable on a threaded portion of said pin (2) and acting in the sense of causing said jaws to forcibly approach each other, against the elastic reaction of a spring (14) tending to repel them, and to retain a **key** positioned between them, characterised by comprising a friction type overload clutch (18, 20, 30) interposed between said knob (22) and said pin (2).

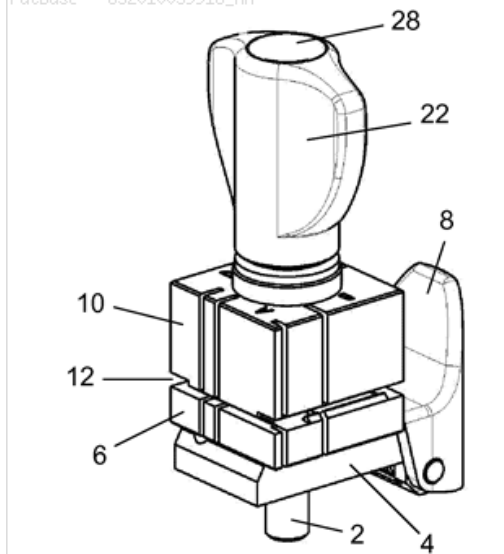
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B25B1/24 (Advanced/Invention);

B23C3/00 B25B1/00 (Core/Invention)

International (IPC 1-7): B23C3/35 B25B1/10**CPC:** B23C3/355 B25B1/103 B25B1/24**European:** B23C3/35B B25B1/10B B25B1/24**US:** 269/157 269/157P 269/240 269/240S 269/254.0CS 269/254CS 269/257 269/257S 269/285 269/285S

PatBase - US2010059916_AA

**Family:**

Publication number	Publication date	Application number	Application date
AU2007327692 AA	20080605	AU20070327692	20071123
AU2007327692 BB	20130404	AU20070327692	20071123
CN101594958 A	20091202	CN200780039249	20071123
CN101594958 B	20111214	CN200780039249	20071123
EP2086709 A1	20090812	EP20070822848	20071123
EP2086709 B1	20160727	EP20070822848	20071123
ES2591032 T3	20161124	ES20070822848T	20071123
IN00836KN2009 A	20090522	IN2009KN00836	20090304
ITVE20060075 A1	20080601	IT2006VE00075	20061130
TR201612360 T4	20161121	TR20160012360T	20071123
US2010059916 AA	20100311	US20070312507	20071123
US8196914 BB	20120612	US20070312507	20071123
WO08065052 A1	20080605	WO2007EP62758	20071123

Priority:

EP20070822848 20071123 IT2006VE00075 20061130 WO2007EP62758 20071123

Probable Assignee: SILCA SPA**Assignee(s):** (std): PIGATTI GIORGIO ; SILCA SPA**Assignee(s):** SILCA S P A**Inventor(s):** (std): GIORGIO PIGATTI ; PIGATTI GIORGIO**Agent(s):** GRIFFITH HACK; PIOVESANA PAOLO; CURELL MIREIA; MUESERREF AKYOL; MARTIN P HOFFMAN,HOFFMAN WASSON AND GITLER; MARTIN P HOFFMAN HOFFMAN WASSON AND GITLER; THEMIS LAW

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: FULLY AUTOMATIC **KEY DUPLICATING MACHINE** WITH AUTOMATIC **KEY** MODEL IDENTIFICATION SYSTEM

Abstract: Source: US2008145163A A fully automatic **key duplicating machine**. A master **key** alignment module is movably disposed into and out of proximity with a master **key** clamping module, the master **key** being aligned by the alignment module within the master **key** clamping module. A master **key** identification module is disposed in fixed relation to the master **key** clamping module and identifies a type of **key** secured in the master **key** clamping module. A central positioning base is provided automatically movable into and out of engagement with the **key** cutting module and optionally the alignment module, adapted to move the master **key** alignment module into proximity with the master **key** clamping module and adapted to secure a **key** blank to be cut at the **key** cutting module in accordance with the tooth pattern of a clamped master **key**.

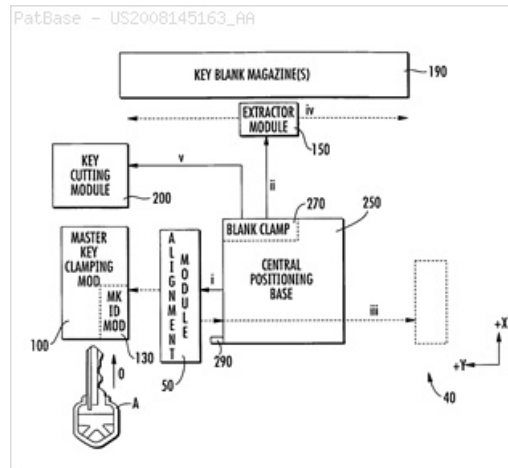
Classifications:

International (IPC 8-9): B23C1/16 B23C1/18 B23C3/00 B23C3/35
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B23Q7/10 E05B19/00 G01B1/00 (Advanced/Invention);
B23C1/00 B23C3/00 B23Q3/00 B23Q35/00 E05B19/00
G01B1/00 (Core/Invention)

CPIC: Y10T409/30616 B23C3/35 B23C2230/08 B23C2235/24
B23C2235/28 B23C2235/32 B23Q35/08 Y10T409/300952
Y10T409/301008 Y10T409/301064 Y10T409/306048

European: B23C3/35 B23Q35/08 L23C230/08 L23C235/24
L23C235/28 L23C235/32

US: 1/1 33/539 33/539S 409/172 409/174 409/174S 409/81 409/82
409/83 409/83P 76/110



Family:

Publication number	Publication date	Application number	Application date
AU2007325754 AA	20080605	AU20070325754	20071128
AU2007325754 AB	20100107	AU20070325754	20071128
AU2007325754 BB	20150122	AU20070325754	20071128
CA2707184 AA	20100528	CA20072707184	20071128
CA2707184 C	20130212	CA20072707184	20071128
CA2797774 AA	20080605	CA20072797774	20071128
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EP2089177 A2	20090819	EP20070862307	20071128
EP2089177 A4	20160824	EP20070862307	20071128
JP2010511113 T2	20100408	JP20090539310T	20071128
JP5349321 B2	20131120	JP20090539310T	20071128
US2008145163 AA	20080619	US20070998101	20071128
US2013017030 AA	20130117	US20120622036	20120918
US2016059324 AA	20160303	US20150920060	20151022
US8287215 BB	20121016	US20070998101	20071128
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WO08066857 A3	20081016	WO2007US24522	20071128

Priority:

CA20072707184	20071128	CA20072797774	20071128	CA20122707184	20121218
WO2007US24522	20071128	US20120622036	20120918	US20070998101	20071128
US20060867403P	20061128	US20060867796P	20061130	US20150920060	20151022

Probable Assignee: MINUTE KEY INC

Assignee(s): (std): FREEMAN ARI ; FREEMAN DANIEL ; KEY TECH INC ; KEY TECH LLC ; MINUTE KEY INC

Assignee(s): KEY TECH INC A DELAWARE CORPORATION ; MAIN STREET CAPITAL CORP ; KEY TECH INC (A DELAWARE CORPORATION) ; KEY TECH INC A DELAWARE CORP

Inventor(s): (std): FREEMAN ARI ; FREEMAN DANIEL ; MINUTE KEY INC

Inventor(s): ARI FREEMAN ; DANIEL FREEMAN

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; MARKS AND CLERK; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAEUSSER ANWALTSSOZIIETAE; PRYOR CASHMAN LLP; NIXON PEABODY LLP; JONES DAY; NEGRIN BARRY E ET AL

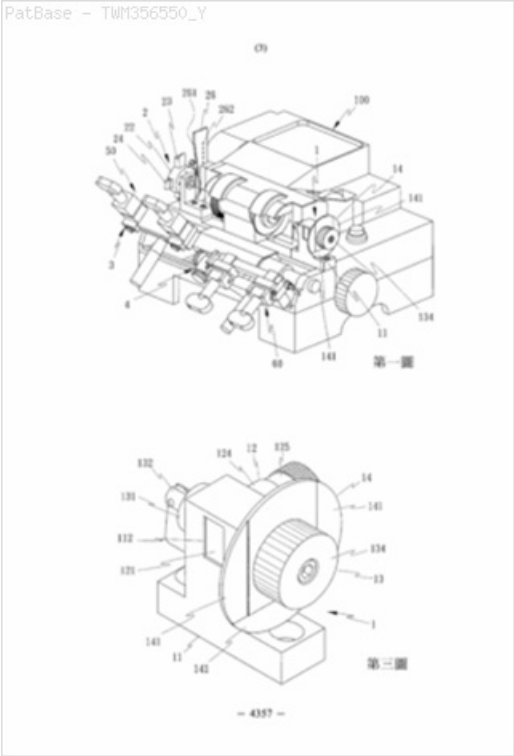
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Title: Structural improvement of **key duplicator**

Abstract: Source: TWM356550Y

Machine translation: Structure of improvement one kind of **key** copy **machine**, is contains in front a **key** copy **machine** active fixture unifies a disc survey organization, and may in a designation place union rotation type survey organization, be supposed to move the fixture one side to unify an angle detent mechanism, also should move the fixture the designation place to be possible to be equipped with an adjustment organization, its characteristic lies in: This disc survey train of mechanism union may rotate a piece of survey plate, should survey the plate the circumference to be equipped with the plural number width different survey piece, may willfully rotate this survey plate replacement survey piece, the affiliation this survey piece survey right angle tooth profile **key**, enables the achievement to **duplicate** another new **key** the machining datum.

Classifications:
International (IPC 8-9): B21D53/42 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
TWM356550 Y	20090511	TW20090200163U	20090107

Priority:
TW20090200163U 20090107

Probable Assignee: KE QING SHENG
Assignee(s): KE QING SHENG
Inventor(s): KE QING SHENG

Title: STROKE CONTROLLER FOR A KEY DUPLICATOR

Abstract: Source: US2012141221A A stroke controller is mounted on a key duplicator and has a base, a drive shaft, a knob and a driven shaft. The base has a longitudinal shaft hole and a transverse shaft hole. The drive shaft is mounted rotatably through the transverse shaft hole. The knob is mounted on the drive shaft and has a drive gear. The driven shaft is mounted slidably through the longitudinal shaft hole and has a rack section engaging the drive gear so that rotating the knob drives the driven shaft to slide relative to the base. The stroke controller precisely controls the movement of an original key and a key workpiece clamped on the key duplicator to manufacture a fine key duplicate.

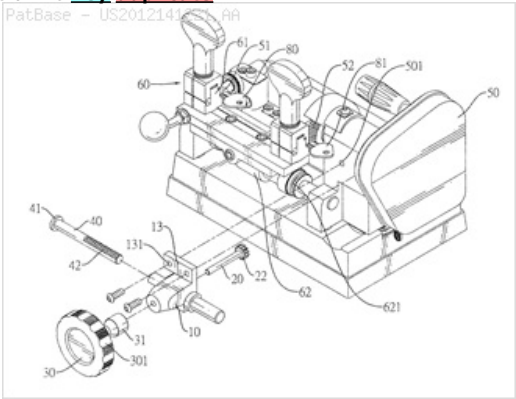
Classifications:

International (IPC 8-9): B23C3/35 B23C9/00 (Advanced/Invention)

CPC: B23C3/35 Y10T409/300952

European: B23C3/35

US: 409/145 409/81 409/81P



Family:

Publication number	Publication date	Application number	Application date
TWM405922 Y	20110621	TW20100223385U	20101202
US2012141221 AA	20120607	US20110282566	20111027
US9004828 BB	20150414	US20110282566	20111027

Priority:

TW20100223385U 20101202

Probable Assignee: EAST OF WU CO LTD
Assignee(s): (std): EAST OF WU CO LTD ; WU KUO SHEN
Assignee(s): EAST OF WU CO
Inventor(s): (std): WU GUO SHENG ; WU KUO SHEN
Agent(s): ROSENBERG KLENI AND LEE

Title: FULLY AUTOMATIC SELF-SERVICE **KEY DUPLICATING** KIOSK

Abstract: Source: US2011297691A A self-service, fully-automatic kiosk for **duplicating keys** includes a kiosk housing having a customer interface for receiving payment from a customer for the purchase of at least one **duplicate** of the customer's **key**. A **key**-receiving entry in the housing receives at least a portion of the customer's **key** to be **duplicated**, and a **key** analysis system within the housing analyzes the blade of a **key** inserted in the **key**-receiving entry to determine whether the inserted **key** matches one of a group of preselected **key** types and, if so, which preselected **key** type is matched. A **key** blank magazine within the housing stores **key** blanks for each of the preselected **key** types. A **key** blank extraction system extracts from the magazine a **key** blank for the preselected **key** type matched by the blade of the **key** inserted in the **key**-receiving entry. Then a **key duplicating** system within the kiosk replicates the tooth pattern of the blade of the **key** inserted in the **key**-receiving entry, on the blade of the extracted **key** blank.

Classifications:

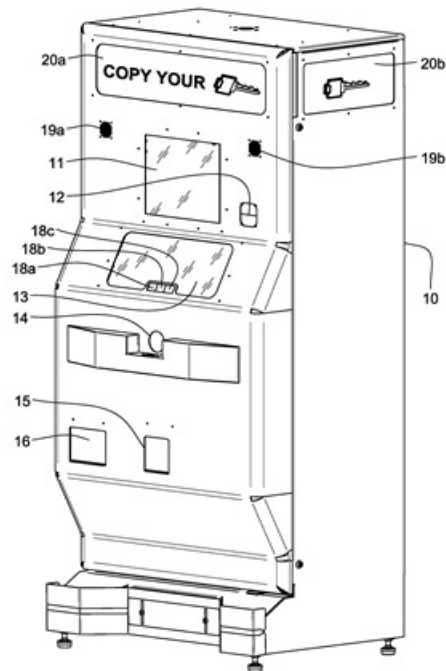
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CPC: B23C2235/12 B23C2235/32 G07F11/70 G05B15/02 B23C3/35 Y10T409/300952 Y10T409/301064 Y10T409/301624

European: B23C3/35 G07F11/70

US: 1/1 194/353 194/353S 221/194 221/194S 221/8 221/8P 409/81 409/81S 409/83 409/93 700/106 700/106P 700/117 700/159 700/161 700/164 700/180 700/232 700/233 700/83

PatBase - US2011297691_AA



Family:

Publication number	Publication date	Application number	Application date
AU2011261228 AA	20111208	AU20110261228	20110603
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WO12170321 A2	20121213	WO2012US40656	20120604
WO12170321 A3	20130221	WO2012US40656	20120604

Priority:

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US20130743053 20130116	US20130961519 20130807	US20130964017 20130809
WO2011US39128 20110603	WO2012US40656 20120604	

Probable Assignee: MINUTE KEY INC

Assignee(s): (std): FREEMAN DANIEL ; MINUTE KEY INC

Assignee(s): MAIN STREET CAPITAL CORP

Inventor(s): (std): FREEMAN DANIEL

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; MARKS AND CLERK; BRION RAFFOUL; GRUENECKER KINKELDEY STOCKMAIR AND SCHWANHAUESSER; NIXON PEABODY LLP; JONES DAY; JONES; RUDISILL STEPHEN G

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT

MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM
SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD FOR VERIFYING TOOL INTEGRITY IN AUTOMATIC MULTI-TOOL **KEY DUPLICATING MACHINES**, AND **MACHINE** FOR IMPLEMENTING THE METHOD

Abstract: A method for verifying the integrity of a tool in automatic multi-tool **key duplicating machines**, characterised by bringing each tool (8, 8'), mounted on the relative tool holder, into contact at predetermined frequency with a reference plug (14) applied to a fixed point of said **machine**, then determining, by means of an electrical signal generated by the contact of the tip of said tool with said reference plug, the position of the tip of said tool (8, 8') relative to said reference plug (14), monitoring the variation of this position with time, and considering the tool no longer integral if a predetermined value of said position variation is exceeded.

Classifications:

International (IPC 8-9): B23C3/35 B23Q17/09 (Advanced/Invention)

CPC: B23Q3/15722 B23Q17/0909 B23C3/35 B23C2235/21

European: B23C3/35 B23Q17/09B2 L23C235/21

PatBase - WO12016934_A1

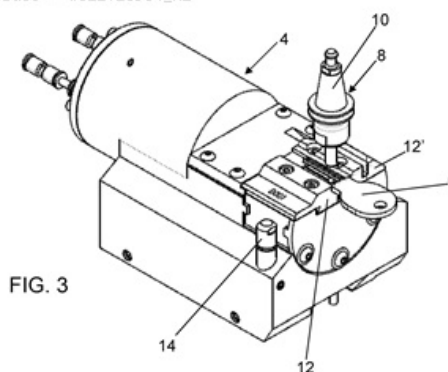


FIG. 3

Family:

Publication number	Publication date	Application number	Application date
DE602011007039 D1	20140618	DE201160007039T	20110729
EP2601012 A1	20130612	EP20110739050	20110729
EP2601012 B1	20140514	EP20110739050	20110729
ES2476217 T3	20140714	ES20110739050T	20110729
IT1401390 B1	20130718	IT2010VE00048	20100806
ITVE20100048 A1	20120207	IT2010VE00048	20100806
WO12016934 A1	20120209	WO2011EP63162	20110729

Priority:

EP20110739050 20110729 IT2010VE00048 20100806 WO2011EP63162 20110729

Probable Assignee: SILCA SPA

Assignee(s): (std): GUSMEROLI ROBERTO ; SILCA SPA

Assignee(s): SILCA S P A ; SILCA SAN VENDEMIANO SPA

Inventor(s): (std): GUSMEROLI ROBERTO

Agent(s): DR ING PAOLO PIOVESANA CONSULENZA TECNICA E LEGALE PER BREVETTI; PIOVESANA PAOLO; CURELL MIREIA

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

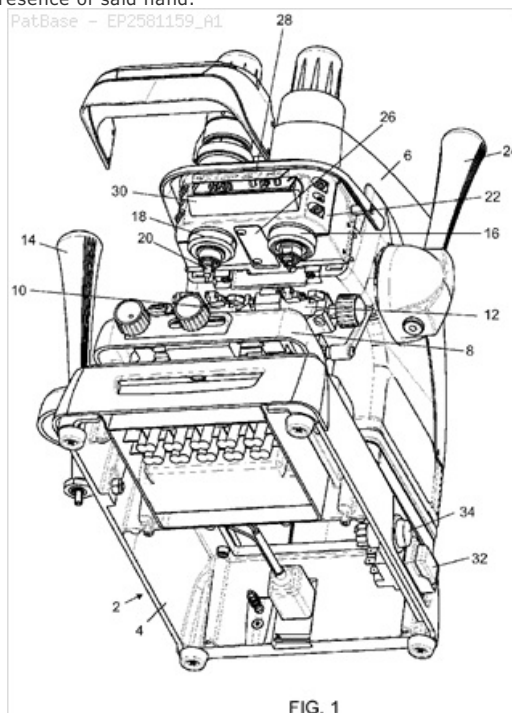
Title: IMPROVED **KEY DUPLICATING MACHINE**.

Abstract: Source: EP2581159A1 An improved **key duplicating machine** provided with an illumination lamp, comprising: - at least one proximity sensor (30) positioned within the **machine** operative area, - an electrical power circuit for said lamp, activatable by said sensor when an operator's hand enters said operative area. - means for deactivating said power circuit a predetermined time after said sensor (30) has ceased to sense the presence of said hand.

Classifications:

International (IPC 8-9): B23C3/35 B23P15/00 (Advanced/Invention)

CPC: B23C3/35 B23P15/005 B23C2235/24 B23C2260/76



Family:

Publication number	Publication date	Application number	Application date
DE602012003048 D1	20141023	DE201260003048T	20120925
EP2581159 A1	20130417	EP20120185923	20120925
EP2581159 B1	20140910	EP20120185923	20120925
ES2519643 T3	20141107	ES20120185923T	20120925
ITVE20110018 U1	20130415	IT2011VE00018U	20111014

Priority:

EP20120185923 20120925 IT2011VE00018U 20111014

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Assignee(s): SILCA VITTORIO VENETO SPA ; SILCA S P A

Inventor(s): (std): CETTOLIN MORENO ; PIGATTI GIORGIO

Agent(s): DR ING PAOLO PIOVESANA CONSULENZA TECNICA E LEGALE PER BREVETTI; PIOVESANA PAOLO; CURELL MIREIA

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Title: SYSTEMS AND METHODS FOR MANAGING **KEY** INFORMATION

Abstract: Source: US2013170693A Systems and methods for managing **key** information are provided. In some embodiments, systems for managing **key** information are provided, the systems comprising: at least one hardware processor that: receives security information from a user; receives an image of a first **key**; determines geometric information about the first **key** based on the image; causes the geometric information about the first **key** to be stored in a storage device in association with at least a portion of the security information from the user; and causes the geometric information about the first **key** to be retrieved from the storage device upon validating at least the portion of the security information for use in creating a second **key**.

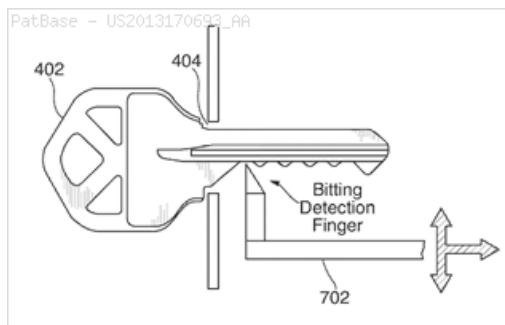
Classifications:

International (IPC 8-9): B23C3/35 B29C67/00 G05B15/02

G05B19/042 G06F19/00 G06K9/20 G06Q20/18 (Advanced/Invention)

CPC: G05B15/02 G06K9/00 B29C67/0088 B33Y50/02 B23C2235/12 B23C2235/41 G06K9/2054 G06Q20/18 G05B2219/49004 B23C3/35 G05B19/0426 B33Y50/00 B33Y80/00

US: 382/100 409/83 700/106 700/117 700/119 700/161 700/186



Family:

Publication number	Publication date	Application number	Application date
US2013170693 AA	20130704	US20130734064	20130104
US2013173044 AA	20130704	US20130734032	20130104
US2014148941 AA	20140529	US20140169981	20140131
US2015286201 AA	20151008	US20150747377	20150623
US2017008097 AA	20170112	US20160273347	20160922
US8626331 BB	20140107	US20130734064	20130104
US8682468 BB	20140325	US20130734032	20130104
WO13103774 A1	20130711	WO2013US20231	20130104

Priority:

US20120582990P 20120104	US20120602456P 20120223	US20120656832P 20120607
US20120683794P 20120816	US20120691396P 20120821	US20130734032 20130104
US20130734064 20130104	US20140169981 20140131	US20150747377 20150623
US20160273347 20160922		

Probable Assignee: KEYME INC

Assignee(s): (std): KEYME INC

Assignee(s): BSP AGENCY LLC AGENT AS ; CITY NATIONAL BANK

Inventor(s): (std): BORER KRISTOPHER ; KIM JAYEON ; MARSH GREGORY ; PRUITT PAIGE ; SALZBANK ZACHARY

Agent(s): BYRNE POH LLP; DURNFORD DILLON E ET AL

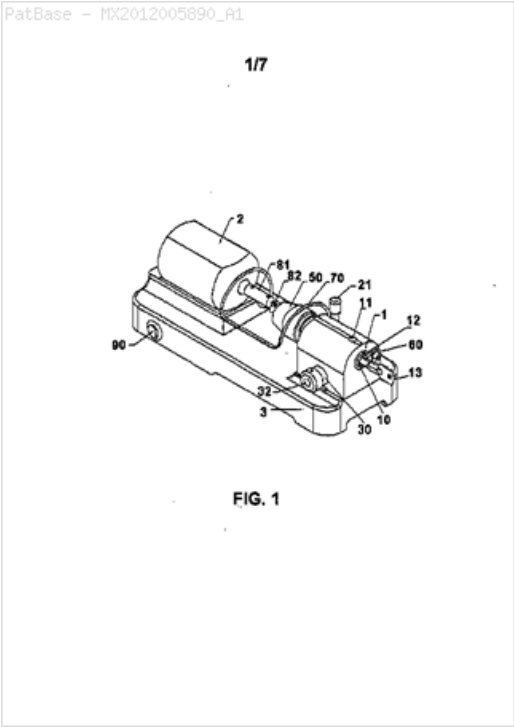
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Title: MACHINE FOR DUPLICATING SAFETY KEYS OF THE TUBULAR TYPE.

Abstract: The present invention refers to a machine for duplicating safety keys of the tubular type, which comprises: a) an electric motor (2) having a shaft (80) where a cutting device (82) is coupled, this latter element having an axis co-linear the shaft axis (80); and (b) a duplicator device (1) having an axis parallel the axis of the cutting device (82); which is characterized in that the duplicator device (1) has (a) a main shaft (51) with (i) a device for fastening (50) a white key in the end portion closer the cutting device (82); and (ii) a horizontal cylindrical-shaped cavity (10) located in the furthest end portion of the cutting device (82) for containing an exchangeable insert (100) and (b) an exchangeable insert (100) coupled inside the horizontal cylindrical-shaped cavity, the insert (100) having a support portion to be coupled to an original key to be duplicated.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
MX2012005890 A1	20131122	MX20120005890	20120522

Priority:

MX20120005890 20120522

Probable Assignee: CRUZ HORACIO ALBERTO BAUTISTA
Assignee(s): (std): CRUZ HORACIO ALBERTO BAUTISTA
Assignee(s): HORACIO ALBERTO BAUTISTA CRUZ
Inventor(s): (std): CRUZ HORACIO ALBERTO BAUTISTA
Inventor(s): HORACIO ALBERTO BAUTISTA CRUZ

Title: ELECTRONIC **KEY DUPLICATING MACHINE**

Abstract: Source: US2016368067A An electronic **key duplicating machine** includes a base, on which a first support is mounted for a clamp for, at separate moments, an original **key** and a blank **key**, an optical reader sensing the bitting of the original **key**, and a milling cutter reproducing the bitting on the blank **key**, which are mounted on a second support rigid with the **machine** base, the clamp being movable along the X axis and the Y axis relative to the second support, a unit memorizing the bitting of the original **key** sensed by the optical reader and controlling and commanding movement of the clamp and operability of optical reader and milling cutter, wherein the second support is of C-shape with its opening facing the clamp, and the optical reader is mounted on horizontal branches of the second C-shaped support, while the milling cutter is mounted in the cavity defined by the horizontal branches.

Classifications:

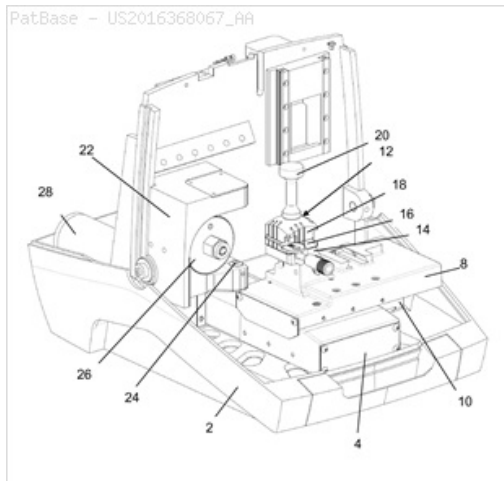
International (IPC 8-9): B23C3/35 B23Q35/128

G05B19/18 (Advanced/Invention)

CPC: G05B19/182 G05B2219/45145 B23C3/35 B23C2235/24

B23C2235/32 B23C2235/41 G05B2219/45245

US: 409/81



Family:

Publication number	Publication date	Application number	Application date
AU2014295284 AA	20150129	AU20140295284	20140714
AU2014295284 BB	20170511	AU20140295284	20140714
CN105431244 A	20160323	CN201480041491	20140714
CO16031590 A2	20160520	CO20160031590	20160209
CO7610704 A2	20160520	CO20160031590	20160209
EP3024614 A1	20160601	EP20140747316	20140714
EP3024614 B1	20170517	EP20140747316	20140714
ITVE20130040 A1	20150125	IT2013VE00040	20130724
KR20160036575 A	20160404	KR20167004001	20140714
US2016368067 AA	20161222	US20140902110	20140714
WO15010936 A1	20150129	WO2014EP65033	20140714

Priority:

IT2013VE00040 20130724 WO2014EP65033 20140714

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Inventor(s): (std): DONADINI MICHELE ; PIGATTI GIORGIO

Inventor(s): GIORGIO PIGATTI ; MICHELE DONADINI

Agent(s): APT PATENT AND TRADE MARK ATTORNEYS; MARGARITA CASTELLANOS ABONDANO; PIOVESANA PAOLO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: CLAMP FOR A **KEY DUPLICATING MACHINE**

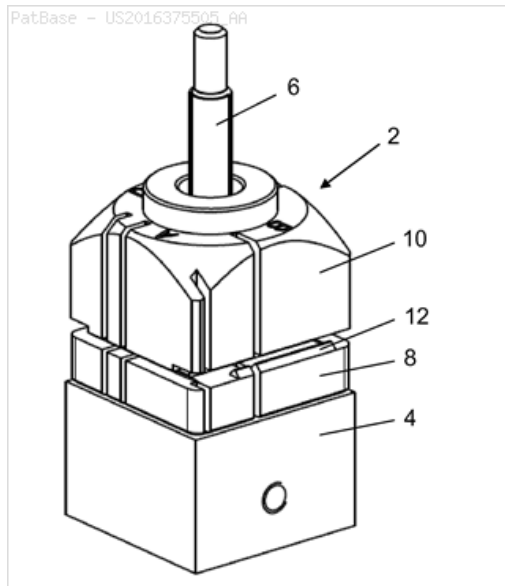
Abstract: Source: US2016375505A A clamp for **key duplicating machines** includes a support, a pin emerging therefrom with a threaded upper end engagable by a knob, the support base having a pair of upper parallel projections on opposite sides of the pin, a lower jaw of square plan, positioned on the support and having a central hole rotatably engaged by the pin, with four grooves in its lower surface parallel to the jaw sides and engagable in pairs with the projections, an upper jaw of square plan, having a central hole rotatably engaged by the pin and cooperating with the lower jaw to clamp a **key**, wherein the pair of projections are shaped as parallel cylindrical pegs emerging from the upper surface of the support. When the clamp is active, its lower jaw rests only by two grooves on the two projections, otherwise the lower surface is spaced from the support upper surface.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention)

CPC: B23C2270/08 B23C3/355

US: 409/81



Family:

Publication number	Publication date	Application number	Application date
AU2014295119 AA	20150129	AU20140295119	20140721
AU2014295119 BB	20170511	AU20140295119	20140721
CN105451919 A	20160330	CN201480041490	20140721
CN105451919 B	20170524	CN201480041490	20140721
CO16031618 A2	20160510	CO20160031618	20160209
CO7600654 A2	20160510	CO20160031618	20160209
DE602014008404 D1	20170511	DE201460008404T	20140721
EP3024615 A1	20160601	EP20140747325	20140721
EP3024615 B1	20170405	EP20140747325	20140721
ITVE20130039 A1	20150125	IT2013VE00039	20130724
US2016375505 AA	20161229	US20140902449	20140721
WO15011095 A1	20150129	WO2014EP65634	20140721

Priority:

EP20140747325 20140721 IT2013VE00039 20130724 WO2014EP65634 20140721

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Assignee(s): SILCA VITTORIO VENETO SPA

Inventor(s): (std): DONADINI MICHELE ; PIGATTI GIORGIO

Inventor(s): GIORGIO PIGATTI ; MICHELE DONADINI

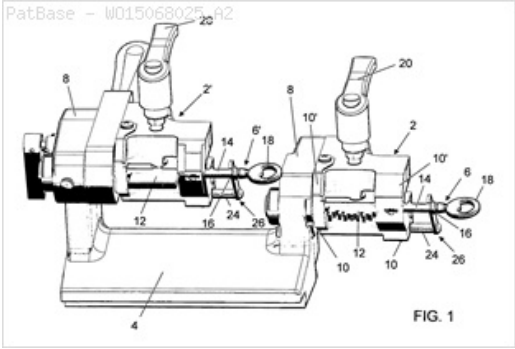
Agent(s): APT PATENT AND TRADE MARK ATTORNEYS; MARGARITA CASTELLANOS ABONDANO; DR ING PAOLO PIOVESANA CONSULENZA TECNICA E LEGALE PER BREVETTI; PIOVESANA PAOLO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: CLAMP FOR A **DUPLICATING MACHINE** FOR BITTED AND DOUBLE-BITTED **KEYS** PROVIDED WITH A COLLAR ON THE SHANK

Abstract: A clamp (2, 2') for a **duplicating machine** for bitted and double-bitted **keys** provided with a collar (16) on the shank (14). The clamp has jaws (10, 10') for clamping the **key** (6, 6') and further comprises a locator element (26) of adjustable position such that, when a **key** (6, 6') is clamped between the jaws (10, 10'), the collar (16) of the **key** (6, 6') rests against the locator element (26). The locator element (26) comprises a portion (24) which can be withdrawn from the clamp in a manner parallel to the axis of the shank (14) of the **key** (6, 6'), when the **key** is clamped between the jaws (10, 10') of the clamp, and a locator bar (34) extending in a direction substantially perpendicular to the withdrawable portion (24), which can interact with the collar (16). The withdrawable portion (24) of the locator element (26) is provided with a plurality of notches (28) spaced apart in the withdrawal direction and selectively snap-engagable by an elastic engagement element (30, 32) provided on the clamp (2, 2').

Classifications:
International (IPC 8-9): B23C3/35 (Advanced/Invention)
CPC: B23C3/355 B23B2260/12



Family:

Publication number	Publication date	Application number	Application date
EP3065904 A2	20160914	EP20140845033	20141106
EP3065904 B1	20170517	EP20140845033	20141106
ITVE20130059 A1	20150507	IT2013VE00059	20131106
WO15068025 A2	20150514	WO2014IB02391	20141106
WO15068025 A3	20150924	WO2014IB02391	20141106

Priority:

IT2013VE00059 20131106 WO2014IB02391 20141106

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Inventor(s): (std): DA RODDA ORESTE

Agent(s): PIOVESANA PAOLO

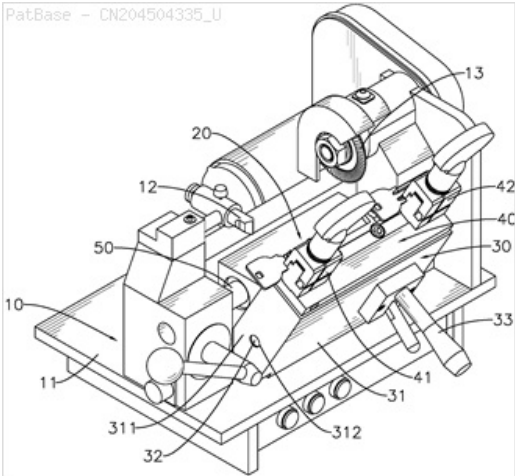
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Title: THE **KEY** DOUBLING **MACHINE** DISTANCE SECURE ARCHITECTURE THAT MARCHS

Abstract: Source: CN204504335U The utility model discloses a **key duplicator** distance secure architecture that marches, it is installed on a **key duplicator**, and it has a fixing base, and the fixing base is installed in an axis body in order to connect in the imitative **machine** of cutting of the **key duplicator** to a sliding seat is established to the pivot, and the sliding seat receives an abut against of replacing of the fixing base, simultaneously by the sliding seat according to an adjustment piece of the fixing base of abut against of pulling, see through the elasticity abut against that the sliding seat was replaced, simultaneously by according to an abut against adjustment piece of pulling to relative position between control activity seat and fixing base makes to install in the anchor clamps seat of sliding seat and in order to improve **key duplicator** operation process, to touch because of the mistake and to cut too much **key** embryo according to selecting pivot orientation guide and cutting to move, in addition, at the **key** course of working, the sliding seat be replaced the piece push away to, the event can be assisted the operation and moved with laborsaving completion pivot.

Classifications:

International (IPC 8-9): B23C3/35 B23C9/00
B23Q35/04 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN204504335 U	20150729	CN201520148528U	20150316

Priority:

CN201520148528U 20150316

Probable Assignee:

EAST OF WU CO LTD

Assignee(s): (std):

EAST OF WU CO LTD

Assignee(s):

EAST WU LTD ; EAST OF WU CO

Inventor(s): (std):

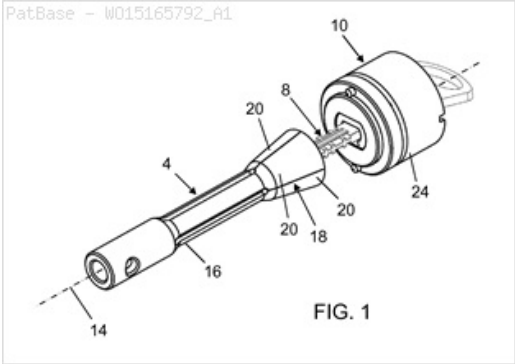
WU GUOSHENG

Title: CLAMP FOR A KEY DUPLICATING MACHINE

Abstract: An improved clamp (2) for an electronic key duplicating machine, characterised by comprising: - a first structure (4) for gripping the tip of a key (8) by a self-centring gripper (16) intended to immobilize the tip (6) of said key, - a second structure (10) for gripping a portion of the key shank (12) by immobilization elements (28, 30) intended to come into contact with said portion of the shank (12) of the key (8) and engage it by friction, - said first structure (4) and second structure (10) being aligned and mutually spaced apart along the axis (14) along which the key (8) to be clamped extends, and being associated with means (48, 50, 52, 54, 56) for its rotation about said axis and its immobilization in the desired angular position.

Classifications:

International (IPC 8-9): B23B31/20 B23B31/22 B23B31/34 B23C3/35 (Advanced/Invention)
CPC: B23B31/22 B23B31/223 B23C3/355 B23B31/202 B23B2231/2032 B23B2231/2035



Family:

Publication number	Publication date	Application number	Application date
AU2015252236 AA	20151105	AU20150252236	20150423
EP3137251 A1	20170308	EP20150722094	20150423
WO15165792 A1	20151105	WO2015EP58784	20150423

Priority:

IT2014VE00026 20140430 WO2015EP58784 20150423

Probable Assignee: SILCA SPA

Assignee(s): (std): SILCA SPA

Inventor(s): (std): DA RODDA ORESTE

Agent(s): APT PATENT AND TRADE MARK ATTORNEYS; PIOVESANA PAOLO

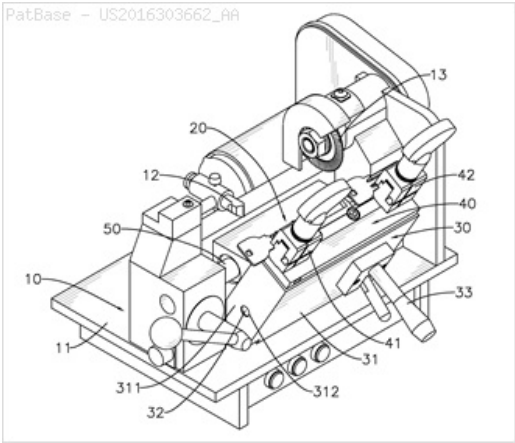
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: STROKE SAFETY DEVICE FOR A KEY DUPLICATING MACHINE

Abstract: Source: US2016303662A A stroke safety device for a key duplicating machine has a fixed mount and a movable mount. The fixed mount is mounted around a connecting shaft of the key duplicating machine and has a first body, multiple first resilient members, multiple pressing elements, and an adjusting element. The first body has a through hole, an inclined segment, and a mounting recess. The movable mount is pivotally connected to the fixed mount and has a second body and an operating element. The second body is pivotally mounted on a base of the key duplicating machine to cover the inclined segment, and has two opposite side segments. The abutting rod is inserted into the mounting recess of the first body to selectively abut against the adjusting element.

Classifications:

International (IPC 8-9): B23C3/35 (Advanced/Invention)
CPC: B23C3/355 B23C2235/48 Y10T409/300952 Y10T409/301064 B23C3/35
US: 409/81



Family:

Publication number	Publication date	Application number	Application date
US2016303662 AA	20161020	US20150690210	20150417
US9592561 BB	20170314	US20150690210	20150417

Priority:

US20150690210 20150417

Probable Assignee:	WU KUO SHEN
Assignee(s): (std):	WU KUO SHEN
Inventor(s): (std):	WU KUO SHEN
Agent(s):	JOHN D