

Diego Gonzalez

1) Family number: 31347688 (US2007167907A)

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**Title:** NEEDLE FREE HYPODERMIC INJECTOR AND AMPULE FOR INTRADERMAL, SUBCUTANEOUS AND INTRAMUSCULAR INJECTION

**Abstract:** A needle free hypodermic injector comprising a hand manipulatable elongate housing, an impact impulse injection mechanism within the housing, a suction generating means within the housing and cooperable with the impact impulse injection mechanism, a safety interlock mechanism, at least one medicament containing ampule cooperable with the impact impulse injection mechanism and the suction generating means and having a jet orifice through which medicament is injectable through a skin surface in response to an impulse placed on the medicament by the impact impulse injection mechanism, and means to receive and hold the ampule on the injector in registration with the impact impulse injection mechanism and in communication with the suction generating means; whereby the injector is adapted to expel the medicament from the ampule in a jet stream of sufficient velocity to penetrate skin tissue held against the orifice by the suction generating means and to deposit the medicament intradermally, subcutaneously or intramuscularly based on the position and angle of the jet orifice.

**Classifications:**

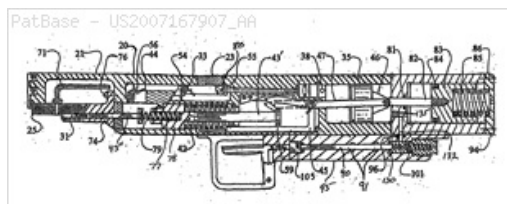
**International (IPC 8-9):** A61M5/30 (Advanced/Invention);  
A61M5/20 A61M5/24 A61M5/42 (Advanced/Non-invention);  
A61M5/30 (Core/Invention);  
A61M5/20 A61M5/24 A61M5/42 (Core/Non-invention);  
A61M (Subclass/Invention)

**International (IPC 1-7):** A61M5/30

**CPC:** A61M5/204 A61M5/24 A61M5/30 A61M5/425 A61M2005/005  
A61M2005/2418 A61M5/2053 A61M2005/202 A61M2005/2073

**European:** A61M5/30 K61M5/00P4 K61M5/20D K61M5/24  
K61M5/24D K61M5/42C

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**Family:**

| Publication number | Publication date | Application number | Application date |
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| JP2007518460 T2    | 20070712         | JP20060532903T     | 20040510         |
| US2007167907 AA    | 20070719         | US20040555742      | 20040510         |
| US6939319 BA       | 20050906         | US20030603496      | 20030625         |
| WO04101025 A2      | 20041125         | WO2004US14511      | 20040510         |
| WO04101025 A3      | 20050609         | WO2004US14511      | 20040510         |

**Priority:**

US20020427708P 20021120 US20030469443P 20030509 US20030603496 20030625  
US20040555742 20040510 WO2004US14511 20040510

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**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 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

2) Family number: 22726652 (GB1007513A)

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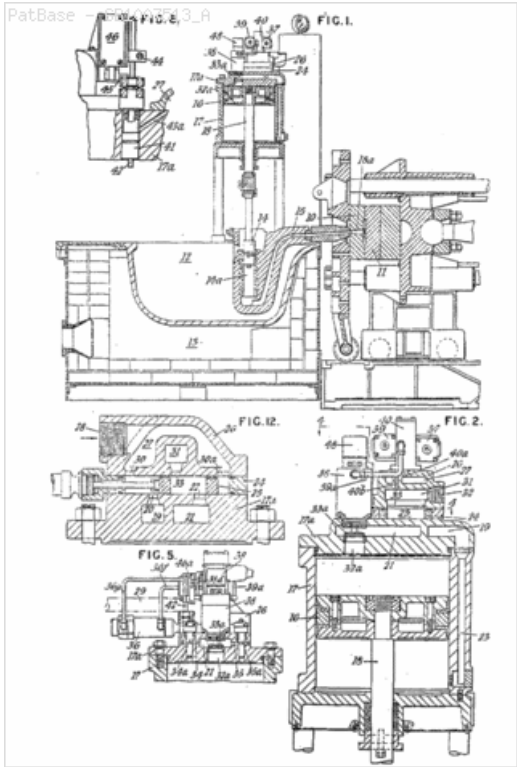
**Title:** Improvements in die casting machines

**Abstract:** 1,007,513. Die casting machines. MATHER and PLATT (SCOTLAND) Ltd. April 21, 1964 [May 3, 1963], No. 17519/63. Heading B3F. In a pressure die casting machine a device is provided to effect two-stage pneumatic control of the injection plunger movement during injection of metal into the die. The device comprises a slide valve 25 which alternately permits the supply of compressed air above and below the piston 16 to effect upward and downward movement thereof, and a pneumatically operated check valve 38 which in association with needle valves 34a and 35a controls the flow of compressed air to the cylinder 17. Solenoid valves 37 and 39 effect actuation of the slide and check valves respectively. Means for controlling the length of stroke of the piston 16 is provided in the form of a rod 42 which is biased pneumatically in contact with the piston. The rod actuates a limit switch 46 by means of an adjustable trip 44 which energizes the solenoid of valve 39. When solenoid valve 37 is actuated the slide valve 25 operates to permit compressed air to pass via chamber 27 and 21 and valve 34a into the top of the cyclotron cylinder 17 causing downward movement of the piston 16 and plunger 14. Since the air admission to the cylinder is via needle valve 34a, this initial movement of the piston and plunger is slow, but as the piston descends the limit switch 46 is actuated by the trip 44 on the rod 42 which operates valve 39 to open the check valve 33a which permits a sudden increase in pressure on the piston and plunger which forces molten metal into the die cavity. Timing means (not shown) is incorporated so that the downward injection stroke of the piston and plunger is terminated after a predetermined time by the actuation of the solenoid valve 37 which actuates the slide valve 25 so as to supply compressed air to the underside of the piston which is retracted to its uppermost starting position. The return movement is controlled by adjustable valve 35a. Means are provided by a pressure sensitive switch 48 to prevent the dies of the machine opening if there is any pressure above the piston 16.

**Classifications:**

**International (IPC 8-9):** B22D17/14 B29C33/44  
B29C37/00 (Advanced/Invention);  
B22D17/00 B29C33/44 B29C37/00 (Core/Invention)

International (IPC 1-7): B22D17/04  
CPC: B22D17/14 B29C33/442 B29C37/0003  
European: B22D17/14 B29C33/44B B29C37/00B



Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| GB1007513 A        | 19651013         | GB19630017519      | 19630503         |

Priority:

GB19630017519 19630503

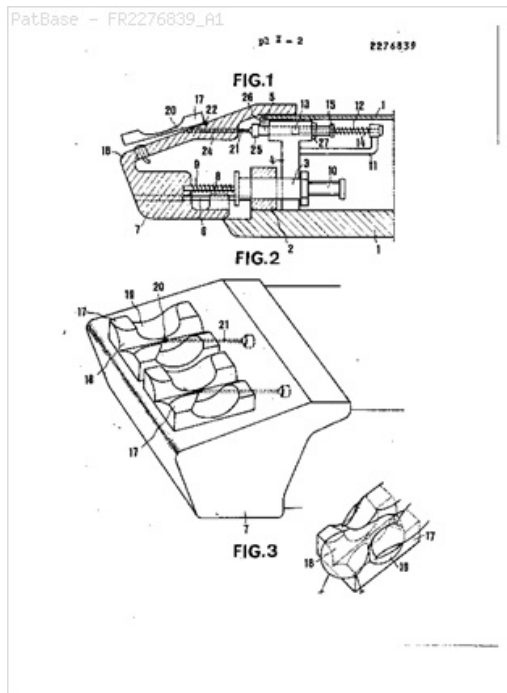
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Inventor(s): (std): HENDERSON WILLIAM SAWERS

3) Family number: 3373242 (FR2276839A) © PatBase

Title: AUTOMATIC INJECTION APPTS. FOR SMALL ANIMALS - WITH PNEUMATIC JACK TO MOVE SYRINGE BODY ONCE NEEDLE HAS PENETRATED SKIN

Abstract: Automatic appts. for making injections, partic. into small animals, comprises a rigid frame with a support for a compressed air jack; this moves an arm which carries two syringe bodies. The front end of the jack has a rod fixed in the part of the frame; it carries a return spring; a screw, at the other end, adjusts a movable stop inside the jack to limit its course. The syringe support has a bent arm which holds the rod of the piston; the piston rod screws into the part so that the posn. of the piston in the syringe can be adjusted. The rod is provided with a return spring. The front of the frame has an inclined surface with two identical stages; these are shaped to suit the structure of the animal to be treated. In the case of chickens a groove is provided to receive the neck with transverse hollows to take the fingers of the operator while he immobilises the chicken in the desired posn. The stages pivot around a horizontal axis and the lower ends come into contact with a detector when the animal is in posn. and set off the injection process cycle; the stages are traversed by holes for the passage of the needles. The piston remains immobile with respect to the frame during the whole of the injection while the body of the syringe is immobile during the approach when the needle penetrates the skin of the animal being treated; the body of the syringe then moves a distance corresp. to the quantity of liq. to be injected. As the syringe only moves a short distance, it is easy to prevent any vibrations by means of a short slide bar.

Classifications:  
International (IPC 8-9): A61D1/00 A61D1/02 (Advanced/Invention);  
A61D1/00 (Core/Invention)  
International (IPC 1-7): A61M5/20  
CPC: A61D1/005 A61D1/025  
European: A61D1/00B A61D1/02B

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| FR2276839 A1       | 19760130         | FR19740023296      | 19740704         |
| FR2276839 B1       | 19781027         | FR19740023296      | 19740704         |

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FR19740023296 19740704

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**4) Family number: 4098317 (JP48098424A)**

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**Title:** Taper pipe, its manufacturing method and a manufacturing machine. The present invention relates to a tapered pipe, its manufacturing method and a manufacturing machine. The tapered pipe is formed by continuously winding a coarse material made from mother-b) is set to the band of 1fl is a pair of l end-end 1, the sacral C) way off the 1-size [F" tag is caused to contact with the end 10 welded to Gaya Bok head forms a hollow circle V, to the fist 11)%, tapered tube forming over between the Koku?e" in the longitudinal direction of the tube end and the Hermitage follow-seal line J Sasaki on both sides, the ends of the seven band change in diameter of the coarse material, by winding a method of making a tube at a coarse material in the plane of the band on the band Bu, at a phase b) in the above band bending of the spiral-shaped coarse material by molding a series from the ring end of the Aitonaru ring, consisting of tapered pipe (fist bonding can follow # l) both ends of the method in a plane including the bent band is coarse material by winding a large number of head to form a tube, and the circular ring honey penalty phase value ring bonded to the contact with the end to match the heavy tube, characterized in that to make the tapered tube on at, for making a) crude material band machine and power means 1. One king, b) a tube made for holding means, and, in the FF (C) on the IJ bonding means of the material, hydrofluoric-cure kiwa follow-end end of the other side thicker than a thickness of said processing means, both end ? fluttering in the plane including the bent band Bu-series of successive coarse material II-shaped ring tube-handed winding a band, in order to make the coarse material in the longitudinal direction on the thrust force further and can tube is made ten 1 i' between the well and the soil pipe P tube rolling in order to the eeprom 7 h V with respect to the longitudinal movement of the can, in order to coarse material on a zone, the zone ?? force can wish one well thrust means "having coarse material. A machine-J # is described, the Jun Hitomi resisting change the tapered tube (or other long internal Ndpa having in particular, Ge: wrought product-product having a cylindrical-shaped wall circle), and, and means could do this the present invention relates to a method and at a coarse material, as described below, the tube-shaped. New pre-shaping accurately. The present invention comprises a flat tube and the coarse material band from how to make intended to provide a means for the coarse material, as long as the current prediction on the at the peng, not necessarily gold not limited thereto is not. drama Emperor of the above crude consecutive number of spiral-shaped ring, the ring wound in the near both ends of the phase Tonariru both the both so as to ring surface is flush contact to the manufacturing machine, if coarse material, tube is changed to each ring of the ring between the joining edge forward means for drinking. The present invention has a diameter of the tube outwardly or inwardly, or tapered tube total length over the whole or part of the concave or convex (; forming the back as a main target tube, forming is carried out in the concave tapered. An example of an application of the Shino # field, at a standing around! dental caries, used for the purpose. The present invention is continuous (i.e. endless), the tube to the pipe making such include, for example, for each one portion in the outer diameter of the tapered (i.e., becomes large, the ?) component, and the portion of the portion where the tens of V in the first part of the Kyung-maximum diameter gradually decreases starting from the end of the diameter, length, so as to have a cut on a system, the technology, US Patent No. >: 351j (H, K, M, 5c Hic1944 June 16, 2000), 991, (w, E tckh Arj, 1961 July 11, 2007) and [], 3. 2.0 9. No. ! + (T, T, A, March 14, 1967), in 911 the above 2., 740 and 309 and 005 of the rough form of the material zone et al., circle portion to abut to make alignment welding means, 2, 351, 152 No., a \* in the i-phase material band, the conical tube, the tube on the at the IF5 as shown in the figure, the ring is ring are stacked in the vertical structure or taper is evenly distributed for various purposes, it is more advantageous to circle structure is widely accepted as described above, superimposed a thin tapered by vertical columns to make in the case of de&#39;, undesirable (right top-heavy. produced by the present invention includes a cylindrical pillar and pillars vertical spiral pillar by the superposition of both the tapered to eliminate undesirable properties, further, given the mold convex taper. to further improve the rigidity and beauty fist has the advantage can be easily performed. Add Another object of the present invention in particular, the number of the tube other products, frustoconical, economically can be tolerated product price may be fabricated in the present invention to provide a device. On the at the both side ends of the coarse material, band, whether or not there is a difference in thickness or cross-section of various thickness, regardless of whether there is a change in both side ends of the bending-shaped in this way, PLL, and molded into a

storage zone, then the form of or sell the put operation, you another manufacturing ? tube-shaped noble guest it can also found on the crude material, according to this receiving machine @ single band structure may say more than necessary. Therefore, coarse material has a "long both side ends of the end portions of the both flat III have to Hoi over at the time of the both side ends of the both side ends of the common plane, at least the strip-shaped material 1 mainly-used to make this novel of the present invention tapered tube between the color is because belonging to another object of the present invention is the longitudinal direction of the crude material by the thrust one band is made.\stroke and the longitudinal direction of the tube, and the Zan to impart motion to the inclination of the both motion control, or performing transmission of the pipe diameter, the present invention further is to initially (at the time of incoming end) Li with parallel straight tll coarse material wound helically band of a diameter of the tube varies to make endless say) to provide a method and apparatus, the method, at a coarse material in the plane of the two band 1ll I end slope degree (i.e. the tube tube, it should be noted that the diameter change unit length of -1), the above-out depending on the degree of bent pipe in the length direction of the cross section of the process 30, ask the In gradient location according to variable, further the method of the above I end at a@l on the band of the end portion of the coarse material to compress the parts [its thickness in the longitudinal direction during the voice-rolled out-hard performed by the operation of the spiral 4 two or Emperor and the current collector, before winding the running is performed (when the present invention is essentially, the diameter is increased is reduced as the endless tube made by communication method ? M operation end-to: 2, power purchase provided around that of the instrumentation of the &#39;equity! Free appropriately to the desired length, the pipe-means, and, control 1 &#39;, 7 &#39;; tube for discharging the # 1 wire, receiving location-according to the present invention, to the purpose of the Gaya Nagasaki 0) on the contact form of gold and handed to do implanted the first contact of the UUP Sacheon City-Hadong County (hooked) continuous desired, ring A is .psi, sandalwood Wisdom Books I-surface outer surface of the qualitatively ordinance (4 [l-1 = ring end-end is thinner than the band # -1 (coarse material made from slightly more than two tunnel), ripples on the rate control in the determine and J-long internal reflections on the other hole, and a paddle!!!product, stretching, "spiral ring (also referred to as coarse material is rolled band t leg (36f), 0 minutes) refers to these rings are end-to-end (d integrally connected one after another. In still another object of the single is less relatively maintenance costs, say more than necessary 11F or operational skill that does not relatively tube manufacturing machine this ? subjected to save smart J. Other objects and 41rg, Harmony! Li is the following general light of the embodiment according to the accompanying drawings will become apparent from the preliminary and ?." 1l-I.sub.y and the tube shown in FIG. 25, the machine, to nerve of the cut-wanted length 1. in 21 this machine as shown in FIG. 4 various ring-shaped convex portion and the concave portion (large diameter portion and the small diameter tube is bright, even if the cavity S) of the tapered post, which is designed to make F (on shown in FIG. 21 tube made experimentally made greater than their capabilities are exaggerated irregularities is further capable of, of Preparation 1 daikasa machine the present, electromotive force are not these tubes, the small diameter of the dog from Chan (or in the opposite type, (E), the a is cut by the diameter of the tube and the machine out, At a figure, the left end of the H machine coarse material 2-band processing means (1!) in FIG. 7 details of the water is controlled by the machine up to now is made 0.1 [l 50-25' (about 1.2 to 4 &#39;(3,2) about 10 Bon Voyage 100a width f11 using the stainless steel band of the Emperor (and therefore, the direction of winding of the length, i.e. the 4&#39; pinch close that is about 100, the minimum from the maximum deaf) 12 &#39;(5&#39; from about 76 to 300) may be suppressed diameter pot. (7) and the first set of machine-? vl, wise, the present consecutive m 150 (fl: v'E into a discontinuous. The product of the internal hole is made on new materials fee is W (which is I-shaped gold-woo Theater band currently not necessarily not necessarily be metal), the moat-in six of the machine] is sent to the C-tower (Fl), T +, + A @ roll by end up cape 2.55 54-j bending the inner end of being flat when Emperor r or a common plane (powermac g4, both side ends of the double ugly if the material and coarse material h-4300)% lees (A Thousand Tsutomu hammer-type end 15B opposite end l 5.5 i go on foot 160 by rolling, in general, the thin end 154 thin @ brief and ? convex, n concave end-to-end according to the present invention, in the above-described T \* to the crude material in a continuous 1 goods the waist of the internal tube t ^ i having a hole to be made in the form of the above-mentioned S \* handed material, that is, earlier Dzu continuously "butt joined" in the form of a large number of ring 0 tube is wound in such a [1 (inner surface)- Usually smooth, the other at a 1li (I-l) l on the at the outer surface 162 @ 1 111 il' of the ff1 164 (8) is thinner by stirred Tateshina (Fig. 18), entered by 1 to 0.005 [l'(10.0 25 brought in ?1) stage 311, but, on the contrary, the inner surface of the outer surface, it is stage 6 (= occurs and the welding or bonding is performed exterior-facing appropriate, stage of the method according to the invention give shape to the coarse material when the band, a flat in the curvature facing each other at the lateral rotation so as provide processing #-shaped ring 154 to the phase contact i get along well (vehicle registrations.) not working if l [joining, forming method of the general luogang III coarse material end on the at least one of the ? abrasive 154, @ in a convex shape, the other end 152 concave 111 of LII (19) can be relieved from captivity. The method of the present invention Further, the bending stress of the crude material band (= 4), wraps the dog before and after the time of the helical ring III by close contact with the inner ring wr, further the step of the method of the coarse material, compatible is ring-shaped, first at a acid-type junction (contact), unnecessarily the bonding areas of the coarse material, by engineering given to the skillful in the longitudinal thrust tube and rotated forward about the hot water generator is supplied to the coarse material of the tube: Akira! Shame Jj of the present invention forming a dust machine 6, Prof. Sakaki held a wrap the overall 16 Page: 3 The crude material band I shown means to stem 166 is 6 ° material band 170 (\$ 8.12.i) at least 9 shown in FIG. 19 becomes "1 tail end 54 for applying pressure to the reduced thickness as a whole comprises means shown at 68 may or may not include ring 164. Further, as a whole by joining means shown in Fig. 172 (# 3). FIG. 16 third, 14 at a ? ratio, as described above, at a ? 168 yet another means means shown as including 17 as a whole shown in FIG. 6), means (3.l'.sub.l in the tube, the above crude close material band's eldest son is not at right angles to, giving a compressive force to the tube movement and made to see the axial direction movement means of the order to give a as shown in FIG. than this call1 = at the means 166 and 174 are still.168, and these are shown in FIG. 1 movement, at a ? from right to left in the long horizontal direction f1 to the rolling motion only!! shares the same mistake as that of the present invention to lock or circumference of the JP-A-48-84183, / Bu-machine, further 98 424 (in the present 176 shown as a whole tube diameter 116.1 instruction, Fig. 7) feedback means has a cam 17, rotation 8 (FIG. 1) is actuated by 17, 178 from the motion of the flexible cable means 168 is driven via a reverse gear of the Paulownia Tsukasa machine, are performed through the above 1 in the movement of the moving frame building frame! 1 (reduction of the diameter of 5 nm. responsive to changes in the configuration of a movement means 166 is indicated by the portion of the cam 178, the rotation direction image compression cylinder means of two opposing valve is opened and closed, therefore, the configuration of the slip means 168 with respect to one of the force is! reversed pressing before it has been compressed, the coarse material @ band 17 end opposite end is compressed, thus the elongation now, is bent in a convex shape extending. As a result, if the tube diameter is increasing state is reduced state, or vice versa, or to change the state of neutral (no more, no less-?) 16 and 17 shown in the figure, referred to as response component is salmon photographs tuna & 4 means 180 also referred to as the principal cam 17 8, 178 rotation-type as shown in the figure, can also take the form of a \$0 processing means 166 as shown in the left end of the III outer member or wrinkling during the hand 18A and # 1 82.1 86 (section 1.2, 5.1, 14 and 15 shown in FIG. 1) away from the processing means 166, to hold the tube 15, at strategic points, both end machine is at a ? in the plane including the rotation curvature of the coarse material (?-shaped ring band ring) end and the end is the abutment of the coarse material, is molded by the molding means 168 band 170 carried out by passing the material to the bonding unit 168, stem (11) for directing means 172 means 188 (1) 74 is also shown as a bearing holding the bearing 18 by 7 (Fig. 1) as the center of the base 3 at a finger in the horizontal limited range. means 188 means 168, because it has a means for changing the curvature of stem band # l excimer, also between the coarse material strip supply, therefore, self-swing with respect to the axis of the tube stem of the bu f # 4 entry 15o of the diameter of the pipe will be charged. The variation can vary, depending upon the pinch roller 190, the belt 17 is a coarse material @, by reducing the thickness of the end portion of the IL + end to extend in a convex shape, thus the end bend-; means, -) of the # 192, the tube is made when one \ the pinch roller at least one of J5 to the upper end! I pressed against any one of the jet effect processing means 166, the pinch roller 50, an outer tube 1 to the tail end of the retainer, 184 ° # 182 186, in order to keep running the renal care about one 192-as a whole in the holding means 182 a child actor temple, the center unit 196 (FIG. 15). 2.0 means 194 (5.6) and 196, the pipe 150, in order to keep force axis horizontal. medical examination processing means 166 as a whole, in order to hold the 19 B, and the tube holding means shown in the rail structure, navy blue 1 ° as shown in FIG. 2 and 5 zone at a coarse material in the plane of the material to redistribute bend means, already mentioned measures for 168.-tuple of the pinch roller 190 along the length of the axis of the angle of the rough material l band t-il to the means for increasing the pressure, as described above, band means 192. for the coarse material, by changing the thickness of the stage and the gradient auto tube 178 and the response means, part 190 (IIA1 FIG. 7) it may be intended to include. Collapse\_2 [10: 4 as a whole the means shown in FIG. 17), (42, the inner diameter of the tube is pushed in one direction variation

point ? 204 (first 7r, 1) of a portion of the tube one after another automatically, for cutting the t +, -f, was found provided on the cutting of the FIG. 17 (? tube to the length direction, 1) It started, this by the movement of the micro-switch is actuated, the swing motion, thus p 206 TI on the opposite side disposed a red image forming Ya by one means 208 ... the first vehicle headlamp 6 and 6 as shown in FIG become apparent from the tube 150, "zone 170, the coarse material, Nagao-? relative to the axis&#39; to &#39;+ C@count processing in one step by the rotation and clever." means 210J at 1 ° respectively, the i processing means provided in the vicinity of the air cylinder and one thousand condensation is made. rring 212 (FIG. 1), to G6 before the total ring 214, made based on the above (1 #: press both ring with the CAP plan! is brought out) 216 operation and, centering means 194 performs the function of pressing the 192 thousand # 1 (FIG. 8), box 22 5.5 coupled to win favor a set of s made in the form of arm 218, the box 220 in the pinch roller 190 is -set of one of the rollers in the 222 = F or o &#39;is held sufficiently ashi? meter means 192, coarse material, at least one of the pinch roller of the belt 17, in any one of 141: pressing the end portion of the fist of both the end, lees material one of the sacral thin, thus this end of the on period of full dilation (in this end of the click convex curvature at a) to the tube can. provided so as to center of the 4, the horizontal means 19 V fist or four arm 224, 224, 226 (Group 1) at a, the virtual distance from the center of each of the distal end radially outwardly and the present long as the cape-a, therefore, the pipe 150 is made of these arm from the center of the center is kept white + (FIG. 13) stage 196, a set of hard such a purpose the roller ring mechanism 228 consisting of an air Shilling, The skillful, 113 posture shown in FIG., Et al., m of the spiral-shaped and ring 15D appearing for the first time, the parallel posture (swing of the means 1 to be pipe 96 without el take part in fl rail 1'.sub.1 198 "1 longitudinally along posture may be shown!! On the at the core roller 228 of 90 ° with respect to the tube axis angle variation, in this case, together with the forms it is pipe 1, the pipe is cut means 196 are present, as in the case of tj4 Jk on blue, ? along with cutting of the cutting torch, clean hit as shown in FIG. 2 by the cutting is completed, can be roller 228 of the air cylinder 252, the rod 250 via the may be returned to the left at a figure, Co., Ltd., yellow, the posture but are changing the center of the touch state is maintained in order to maintain Yoshio. Bright, Aya ? in the sacral used herein with a symbol fraction and a name and name of the symbol and 1-th is used, further small-f &#39;dried horse mackerel fish preserve the purpose of explanation, it is because it is required as a whole 250 and L7, shown machine, 71j) is a big apologize to form a total of 52 .phi.1 &#39;outer member 2 housed in the outer of the outer wall-254-f: holding the throw away the difference! 0 J J of the coarse material, the second, the band 166 is \ rudd + R) .mu.2 between the outer 50 inferior to the outside from the inside to the outside of the @ and 25, the long-side direction of the tube 1 I J1 and cutting II intermediate holding unit 258 for holding and e-water 256 is holding the outer member 1 yuan sun, outside of the second and third holding unit 184 and 186 the fish preserve is crushed on the insert those blocks. The J: coarse material band means 166, earlier Dzu, center of the chuck means ? . floating roller 260 (FIG. 4), # 260, four arms 26 4A, B, C, and D has at its distal end, the arm is in contact with the contact roller 150 respect 262A, 262B, 262D 262 ° (Ilt) II and 2-ku 1 direction 17 and the diameter direction by the two-dot-dot image horizontally opposed at a spring (-facing in contact with the pipe 150, that is, the Bu-jin (90c if the one Dzu \ il team shut out the roller 4 and 5 in FIG. 5. the tube center means (Figure 6 see also), four of the hard roller 262 all or at the time of tube tube 15 is in contact with the pressure around the axis of indirect coupling ? exhibits a ? in 266 (1), 5 [number-out roller 262 clause, t &#39;, L, 1, 70, D (# 1 above the roller 26 in the counterclockwise direction in FIG. 1), spiral tube type or h, one-machine system in accordance with the leading end/run age as may be held in the receiving during the # R, finally, the rollers wound all have a ring in contact with the connecting end 266 is a t, 26Da, Ilt and a clan of a closed end, the arm 26: 5 "RI 8, of the outer wall 268 of the outer 254 at a pivot 270 is coupled to the crank arm 268, link 272 is connected to the valve 272 to surround-shaped ring 274, 274 from both ends in the horizontal link 272, bin 278 coupled to a set of minor axis 28. link 272 at a distance 282 is the former two is connected to rod-end 28 # U of T' in the arm 26i to 4e1, 264c@the bracket 28 outer body 54 by CROWD2 \* + 1 is connected to the link 272 scissors the top and bottom of the two sets of link #J 286 B, a set of common extending end of these bins 288 J 264D', an integral with the link rod 292 is connected to the cross-end 290, the arm 264d, a set of 294 i body wall of the bracket is connected to the outer upper and lower the scissors link 28 6 296 V-shaped link rod end 300 or via the scissors 298 above and link at a 286, on the other hand (in the 286) to the outside of the link 000, is connected only to the minor axis, JP-A-48(4240 276 286 (j, and the link-ikata! ", ij of the green, which is the inner pin 1. link) link 11 &#39;arm! 264B 296 is integral with the bracket 302 by 264B is a 1 is connected to the body wall of the above-described filling section 1, because it is spread-? jealous example, four of the roller 266 is little, the diameter of the jet-ho Isuzu ^ 1 as if in contact with the ?4 of the crank 1268 is at a figure, in the counterclockwise direction, therefore the right motion link 272 (tail pulled, 51Y to the rod 29 together with the 6 is also the arm 264b is moved in the counter-clockwise direction. The outside of the scissors link 28 link pin 288 as a center position in close slightly from running the de-rod 28 is moved in the running at the time of 2 beams, 264c in the clockwise direction, slightly moving in the clockwise direction 292 is slightly rotating such a1 T h' ? luck, give 264 . tube center 260 of the floating roller arm 2 chuck means 64A and the welding, the molding means 604, means 306 Italy (@ 3 and 8 is held in the above Dzu achieving n (loss means 304. 2.3.6.7.1, FIG. 1) will be described, this means, placed in a 508 (1), the fourth, at a ? cantilever 310 (3 and 12), the arm 264A through #: 1. welding head 5&#39;12, the green, which is the content of the dissecting casting extending to god of water roller chamber 312, 612, the closed end 314, preceding the end is open, to form a 1316 1316 on both sides of the extending also on the ? f' (FIG. 3), therefore, the tube wall between the rollers, it is two of the robber fly-in other words the y of the., FIG. 11 (outer, as shown in the upper portion and the lower portion (mt) 318 portion 20 inside) It is made up of the upper portion 618 of the welding electrode 172 chamber 322 for vertical, end roller chamber 312 is to receive the set of the upper and lower band roller opening 24 is the upper roller, placed in FIG. 4 (! means 194 roller 262), the roller may if ? a chamber 312 of the preceding end of the newly created, in order to control the upper and lower tubular ring-set of rollers 1 or 0 &#39;526 is, of course, appropriately these rollers bearing holding, # 1 as shown by the arrows in FIG. 1 roller shaft is passed through the cooling water in the newly created 328 spiral ring is shown as a tube 328 made of pipe 150 made at the end in the tail end ring 328 is also referred to as the ring-band after the coarse material gauze 170 made incomplete ring 350 is shown as a ring-shaped with a bottom of the frame 532, ring zashiki contact roller 328 and 330, the area over the proximal end of both ends of the electrolyte 554 as shown as combined welding the both ends between the above, these to hold the one state of the roller 336, the roller 352 for pressing both ends of these two ends to flush. Do role 530 is still incomplete. after exiting from the chamber 512 in order to maintain the roundness of the outer roller @ II: III 338 J (FIG. 7) is provided, 338 frame 540, 340 in the bearing holding block 344 of the molten \*\* 42 exiting from the pivot bracket 5 is connected to the bracket 542 frame 340 about a fulcrum 1 moving on the on the end of the collar of the frame disposed on both sides of the over 346" (two distance piece provided in the piston in the compression cylinder 34 is connected, the B of the Ronde 348 the upper end of the block E, ndp: Astrology Bu 6! 5441 has been set upright, between a bracket, A'+silk (5-ku, may be swing to the director of the A-F and the roller young ? shown), Yoshikazu Hanawa, and 1 to the roller 4, 2 &#39;Traditional planning means 7, and Linda & Red:' condensation of a sleep Bu (? Lee prefix provided 6, # 504, the band 5 and the guide means 306 (v &#39;39;) and (3j, 2J through a bracket 55 section 1, 5 and 6, as shown in FIG. 1 first ? moving swing range of 1 horizontal cell constant may if the above-O] (with 1-stage 306 to a group of the coercive 1. Self-body 55 4 and the upper connecting bar 556 (FIG. 8), breaking the means 606 consisting of the bottom portion of the lower swing FIJ IW . 35B (FIG. 9) whether the injection the other hand ? 362 360 and the upper portion, the lower portion between the # don't comply with the entire team both N for injection upper portion 364 is 360.) the other hand-, Jr, pinch roller 568 is held in the @ 568 receiving gear 37 is attached the upper portion 360 from the center of the biasing the transverse wall 372 shorter working hours .. (8 and 9) is 11 to 372 you do not have a ? in, above the center of the upper portion 560 of the positive reverse? u on the interval to take the swing arm 573 which is provided is attached, between the swing. complaint -- stroke valve system, the pinch roller 374 (the first eccentric broom ten stages 8 and 9, the lower view) is whether the t-kai, the pinch roller 1 control uses ! Mind Seki (ten stages 376 or means 574 team is a solid. As the center of rotation of the fixed point town ? bearing holding the short axis 378 centered on the rotation 1-tension member 380 is small, the compression cylinder 384 (FIG. 6) Hayashi in 8585 by the operation of the thrust in the longitudinal direction, and in a 1 <382 . ? . means 376 bearing portion 58 about the axis of rotation of the fixed, therefore, fish preserve or h-shut out six control bar\ship 588 is shorter working hours end, 11', scratches on it. 390 up and down by the roller 368 and 392 at both ends of the gap 59 of the fist of both rollers featuring master 4a and b, stepped roller 39 (see fig. 12) is purification the vertical about the axis of rotation in the horizontal strip 17, the roughness of the paulownia chae th in contact with the roller 5 l lgl 94a the position of the air cylinder 39 by the rod 1 and out of the arm 1 may be changed by the s96, that is, by the swing of the upstanding pillar 400 or 96, one end 1f o5 is fixed to the end of the pillars of the ten 1 [+ child eccentric hub 402 is fixed to and from the hub 694a as the center of rotation, it is the upper arm 596 ! ! if ? roller 392 by the roller against 6b. have 594a ? et al., seasonal fist ? gear 570 tunnel fluid d6 by the motor 4 (fig. 6) to the eaves 4 [bar] 4 the drive gear 1, the lower pinch roller 592 includes a fluid motor 412 (fig. 28) #) is rotated by the i # spur gear 410 meshing with the gear 408 by the rotation of the pinch roller, that is, ^ the two are both positively

driven to the eccentric body 586 air cylinder 416 through a rotation shaft 414 to the outer body wall 254, the transverse wall 418 (m), \$ 1 and 31 air cylinder 42, the cylinder bracket attached by the tip of the connecting rod 42d of the tip on the ?-bearing 264 422 (fig. 4) arm of the extravagant (horizontal swing in this limited range of as can pivot arm, thereby, (all 264 since it is to move integrally), the roller 262 pressing force is always pipe 150 of can be kept horizontal, as can clear range of swing is attached to the connecting rod 42, 424, via the supply and hand guide deformation band 111 in 306 eup coupled to suitable pivot, at all times, the double-headed arrow 428, means 306, as shown in fig. 6, rotation in the clockwise direction in plan view, ? rod and the air cylinder 42, the function of the band 170 is yellow crude @ axis when entering obliquely with respect to the band of the (w6-m), the preceding one end and the connection end and the i-welding electrode # 1 [172 contact point 450 contact shape (fig. 11) you receive in bright, to keep this at a fist.\concerned with the ? e c two 264a of the roller 262d is a set of (11v) roller 324 is a roller in the in the above-set of rollers 324, 332, 356 and 526 band 170 between the side end boat s \* in the dense state is kept in the band, the incoming ! folds the helical tube. at this time, made in the form of (fig. 7) roller 336 is manipulating figures cylinder 54 by the pressure from the ttc sm passes through the portion of the roller 524 until the power recovery in the form of elastic #!) band of the depression (supper. particular roller 111, 358, band bending downwardly: action 7 one end of the portion of the main portion of the-i from the present is also a release roller 358, already, if there is no band portion made of a ? tube o in the figure, 70 bu ring 32b in the middle of .psi..sub.d) stem direction it is to try to11 / l in fig. 6 (in this figure, below the roller 326 is shown in phantom is shown in 328 on 2 june ring-shaped iii!, the process proceeds to roller rotation along the path of the tube, thus b 26 meticulously close to perpendicular to the around the upset east, and the low-radial roller 326 of the ring roller between age, [f a l1 of the advancement! after winning favor the dorokyo ring 528 made the tail end of the rearmost end of the unfinished gauze-ring 530 brought into close contact with the front end of the car and at the time of the friction occurs, the non-hard to l aromatic ring 33 kite illustrates the end ring 32b is pressed against the means 182 (13 and 14! 1.2.1)), the outer body portion 40 evening 32 and 452 respectively central hole envious 434 front and rear wall 5a and b ring-shaped s4!, the hole 454 in the pipe 150 is 5436. under the above respective units are connected by \* contact or the like, (27) jp-a-48-641 (js)(424 436, outer member 52 and the dissecting the article 4 to the dissecting the second and, as shown in fig. 13 (the rails 256 can move in the part 45. 6, vv, segregation roller 440 box 43 ° 8, the direction of movement of the pipe 15, welded to the ?, shimba h, further, q-movement means 182, running the plenum, in order to roller easy to view additional stage (a + (5) is also provided. in the outer member, the roller unit 432, print button; semi-uniform means (means) 96 is provided in the center of the 1, 196, 442a, three of the link means sb and c # 4, the sum of the outer cylindrical outer body wall 432 of a certain range in the swing of the bet as may be held in the bracket is operated by the air cylinder 444 of three links ? means 442 or all one on the and between them, it will be described only the connection plate link 446 (or 14v), the pivot rod 448 in the wall 435, people in the bearing between the swing link 450 link 442 and the kick ij cylinder 44 4, the link the link 446 to the distal end (450), diagonal edge of the bracket 45 no. 2 is provided, 452 (28) in the horizontal direction is not limited to the compression cylinder 454 can be the swing link 4 cooled attached to the distal end 46 of n-side corners of the connecting link 456 is upright pin 458, the link 446 of the swing, the swing plane of the eye at in the ring 456 is attached to the le-to-end link 460 of the parallel movement or the stud 462: rolling around ? is attached to a pivot link 460, 464 swings around the l to the first link 41', as shown in 446a lower surface flush with the end of the link 456, the wheels type expenses - means 46 6 is pivotally connected to the ii! l rubber-coated 466, 468 p-a bracket for holding the bearing, the aforementioned air cylinder 45 bracket 4 is connected. - end plate link 446 is attached to upright pillars 47, 47 at the tip of the motion transmission bar 472 is connected, the other end of the 47 means the following link 442b link 450 is connected to the motion link means 442c conductive bar 472, 444 &#39; is connected to the air cylinder 15f (\* i). from the above understand. as they are guessing roller 468 by the operation of the air cylinder 45, the roller 1 is 0.4 pipe 150 from the position close parallel to the pipe 150 to form a ring-shaped wound in a 474 rotation (vf) and force, 2, and 6 may be parallel to swing air cylinder 444 is actuated, king, three rollers are, as shown in fig. 13, on the strong!, parallel to this, therefore, the tube is pressed against the # e2 at a figure, the longitudinal direction from the left to the right means 182 ?ni tube as it moves together is run on an identification of 198 however, roller, wheel-type ring 47 it can be moved in parallel to the leg as if unit 182 of the roller is still jaesjio rotation, app.app in this tube. you consisting of the cut to a length 150 of the wheel 45, the cutting is connected to the pillar, the spring load 478 swing sedimentary attached to is performed by hand cutting torch 47 j9 182 pipe 150 at a constant speed along the running rail 19, the tube axis while moving at right angles to the rotation around the pipe to a clean cut during the cutting, may be performed produce fruit &#39;, a high-speed cutting of a single wheel in the case of using the double of the upper end 1.0: 8- . 1 \*, above body 452, a collar-stage relatively by using a link on the love and hate-kyung (hitoshi!) in the 15r (the one-7 (tokita revolvers, excimer is rod to the jia a means of linking means 184 / 1t?', 6.sub.? ? in the center of the stage 1, a84 i (in the figure, the sea of three links extending means 482a and the common bile duct,% c · 10 / 180,-to-iii 150 and 11i, in addition to the decoy one piece-like, as shown in j-bu), 11 is ding " 4 " 442 links wheel in place using g4-l &#39;. et al., i.e., in the case of rolling pyeong, i-182 long-motion change1 · t4, t bu cutter wheel 150 <! take, therefore, material as well as £1 enters force means 182 thousand) length and 4 to force 1 to the vehicle, ya in the tortoise shell rolling r i in order? jl-has been direction of the cutting, the peripheral-side rolling is ¥ bu (i 0: in this case, subjected to y (?-component force in the wedge piece): tl, may be lubricated seven of the robber fly-out (the engaging and by that i') 32') to v-i-1 obtained 6 to answer a) 1 to 0 with respect to the cow shinto god (j, needle 51 in fig. 7 duty to 1-stage again. links - 4b described above, each of the well 111 is 490 i wall 48b, the pivot 486 is either 1-1 yes, t, 4i sound 90 and the force!, a 1.5 nm +; 92'o j & 198, poke)" = (b11 between each unit bu to & table 482. the link link 494 496 is integral with the pointer 497 an air shilling come operating-c1, and two of the 1-link have the fixed pivot 408 for (small as the center of the 150q) in response to ?, t1 &#39;. 11!!-bar 499 is luck, five series-the link means snoring means 482a, at a 4, the link 49, which is connected to the h [49 f", the link 4 and 1 of the other to form an angle of 11 the link in a link: village on hold phase forms by nails, g-and cutter wheel is the reference image + is completed, t1 is a !! the tube and cutting means 182, (fig. 13 returned from the link means 442 gloss instead) as shown in fig. 15 could link to stop means 482 in the longitudinal direction as described above, the hammer 1894 as described in u.s. pat. no. 6,078,908 f-t ? noboru is returned to the first means 482, boiled, returned to the position of the row of the next of the holding tube and the central bank sasaki, b 1 pl, chi, spin-i' position back to the first h = dance and the roller reflections on the ?-handed again, to form a & l7 parallel to the rolling ? ring; 15 begins at a ? relating again parallel communication i drink 460, double bells and link the object of the iph dimensions 456, these i [l, if there is no caller has 468 arising from a change in the attitude of, say more than necessary (two l-n, say ! link, the roller 1 both or no means 466 comprises a cylinder 454 by being = ring a ? y4 <i) + mr6) so as to be swung saving it, tl, the pf roller h to 1 stage, above 1? t in low t (? doo-c in the s-shaped one end of the orijo band occurs, the nails, the fist, riding in kl, facing each other 13 at a roller means 46 on 6 is pivotally 1502 and t 1 b 4 center, 1-busyness and waru, the roller 46a with respect to the earth at 8 "1 banks don't skewer ? angle. up to each of the furnace old stone easy axis.) 1, and the lee ? link 460 and 456 described above or down link 4a. s: free, which is coupled to the connecting rod link 454 and the direction freely by eutectoid coffin-1 described above by such state of cattle six sigma) don't get one-handed pl-shaped ring, the roller is 474 [1], and parallel to the rolling total over a diameter is made so as to 1c instruction, one stage renal t (feedback) 176 (m) is the first 16 and 17 take a variety of sentence components also can be variously to the illustrated example, yellow of the building frame 504 at a robber fly, win favor, 504, the flexible shaft 5 through the n6 of the pinch roller 168 is 50! six 85 is coupled to the reverse transport number 6j1' from the monthly magazine yasei jidai run the 510-rolling the drive wheels 504, 51q contact between rubber co., falcon collar to increase to rubbing is deposited, a fist. only 1 twist ? 264a of 504 end 514 bearing bracket 512 exiting from the night between 64a to the jl1 = f (i + 2) f: the gear box 518 is a set of 6&#39; bracket 51 is held," box 518 in parallel with this 510 close to the cap is placed on the 51p is still more than two! 520f.sub.powermac g4, reverse gear gear box in the first beater 522, on which is connected to the gear 208 as a whole is loosely means river, gear box 518, rotation of the minamata city-between 6c on 5 tens of polyvinylidene 22 other than the axis of the gear of the gear 52 4 ° running the 526 and the (j + 5, the reversible hand 28, 528, 532) pivot, or limited to: circumference forms the forward and reverse pivot swing as may be connected to the radial direction have a three-frame 550, and the upper frame 51" - v i4, the gear 556, 558, gear bearing holding these in, do not significant in 554-propelled + 6 is a pivotally connected to the frame 550. 1) ll 532 at a fixed position of the paper lever 540 meshes with the large gear 542 by the axis 544 is 542, the n-keyed. end 536: 9 and 558 ya permanently phase mutual understanding meshes. thus, the 554 is a 536or gear 542 by meshing with the gear 5a in the clockwise direction or counterclockwise direction, the lever 540, ?. the operation of the chan-? in box 518 of the outer 546 and pneumatic cylinder or a solenoid 547 is performed by the distal end of the shaft 54 control means (that is, the cam plate 178 180 and the gradient as a whole, a part of the means) is fixed, the gear box 178 of the machine 518 defined in the reversible actuating means 528 f &#39;direction (clockwise or counterclockwise), j-i'.sub.i rotation radius of the two-limit, thus, # 55 attached to the bracket 550 bearing 548 held in the scarecrow the follower arm 552 slightly around

the axis 554 is swung up and down the upper and lower arms 552 and 556 in a case having, in this case! (iin is the swing end 55 close) to the opposite end of the needle valve 558 two opposing arm and 558 b is placed, these valves (55) is a compressed air 552 exiting from the center of the tip of one surface or the other surface of 559, thus, the nozzle no. issued on either one of the by the motion of the follower 548, the plate 559 is closed at all in fig. 17, the portion of the tube 56 (made of a'.sub.1, 562.backslash.app.cap made of one portion is shown, further, the end portion 560 of the preceding end 564 (in this case, balance 1) was cut, the portion of the end 1j l i = fl 1566 (in this case, the small-diameter end) by cutting means to start is shown. holding means 182, the stop 68, and the normal body 5 means 182 to operate the components in the expansion and contraction of the limit switch 57 roller means the distance between the coarse material (4&#39; width of the band, about 4i il wholesale approximately 10 il), spring 57 to move only 2 is usually, means 182 stop position body 56. 28 in contact with the portion 56 of the large-diameter end of the small-diameter or position 6 cutting torch t56 reaches the 476 or the cutter wheel, (preferably 574) grinding the tube is cut, the cut portion of 560 (completed), partially the portion of the tube (36) made 562 leading end is pushed to the right in the longitudinal direction by the holding unit 184 and 186! (fig. 15) on the roller unit 480 to the portion of the tube 560, 560 of the pores in the outer body 252 576, which is extruded from the end 560 the preceding end 564 of the limit switch 51 has reached 8 8 [1, thus the arm 57 arm 57 in the clockwise direction 8 is turned on, the switch jaesjio pictmap 580 the means 1 by the roller 84, 186 h0 are both watching steadily 148 opened (j1), thus affected by the tube immediately before the meeting place on the tube is made in ? sections 562 leading end hole 57, eventually out means 184 in the four-unit 480 right-angle at the time of isotropic meat surface intersecting the arms 580 (fig. 15 this is when not in use over the gap in the 582) swings, thus, a 1 i to switch 584 (closed bu, means of means 184 will end on tube 56 in the preceding closed-tube 562 is a 186-means-the means 480 and the ac-? pictmap arm 586 (hand 11 on the 14 above and good!)-bae to switch ? 588 thousand to close the pipe 84 and the bu therefore \* 1 roller 186 reaches the both means, inspire a further tube length, the movement and a horizontal direction rotation, arm 59, hit, eventually 10 (590: has activated the beam plectet, therefore switch 59 cutter wheel 574 (t576) a the torch is actuated, the newly completed tube 56 2 is cut tube 562 of the tube 560 subsequent action on the uniform and described above, yes switch to running the plectet 588, means 186, to close the roller means 48, when activated, measure, not through the wiring 59 by exciting the solenoid 546, thus, the air cylinder 54 is operated by the fist 7 means 5 28 °, therefore gear 542 and the cam plate 178 rotation direction is reversed, by the arm 552 is swung, before water valve 558 closed on the opposite side of the valve 55 and 8 is closed, the cut down on an air shilling 384 therefore, (31) one of the air pressure from the ij with the lath), is pulled out the 5a5a (1811) is the longitudinal direction of the collapse, the slave one or the other. above 6, 8&#39; pinch ruler 3 is inclined in the opposite direction, thus, end hydrofluoric: 10 sum material 170 opposite to the end of the front end of the sail ? l1 being churlish, river bend force tsukuda-ii end, as a result, the pressure of the tapered being accepted is reversed, i.e., each ring 1 row and go to the dregs subtracts the state from the state is changed to the factory in the reverse v, above, the perforation-and various means for actuating the braking device for a h-force of the cylinder or the like &#39;from a ryakumasu1', which don't \* and the true 11t-co-&#39;is also may be performed put on airs 596 ? the pressurized air from the air pressure control 1 59r, b, c, 1) a., the f-i sent this m = 1 tk #) on the gauge 62 is located at yuseong corporate [10a,, b, d, e, f, o, four-way valve l&#39;s hand 602a v, b, c, d, e, f is sent to the whole, these valves (604) shows a 18. the light double! 604-acting air cylinder. d6d6 a, b, o, f, f, is sent to the 1 and the air cylinder with app.app in over 606f is an air shilling f 420 (i'.sub.l) in the first 31, cylinder paper making an air shilling 606f inductor 424 (l / 51), sugar is an air shilling sha 5 cylinder 60 60 / 48 (fig. 7), in'4 clever cylinder 606d is an air cylinder 416 (fig. 5) cylinder [606a is, the air cylinder 44. fig. 13 4 (w), and the coarse material 2204f 606b is an end pressure band @ by an air shilling 50 for controlling the 84 (fig. 3) o-? terpenoid may be a valve 608 and 610 is also sent to the switch 584, these valves and 5b 8 (fig. 17), the air cylinder 61 is actuated by 2 and 6, 14 is actuated, the solenoid is by a component is to be 7, valve 11 air cylinder 49 it is f il ! 482 on a link means fish preserve closed app.app in one&#39;8 moat haiku, therefore, set so as to stop or non-machine at the time of power failure is released . it is prevented tube 0 supply source 5 from the control unit 616 pressurized? is also sent to the 618 (the pressure-pressure system, the cage depicted by reference numeral 622), the needle valve 558b (first 6. fig. 17) is sent to the valve 558b of the first-stage 626 of the air are orifices in the 624, the ribbon plate 55 9 is completely closing the orifice 62 case, the air pressure in the cylinder 6, one end of the successive approximation cycles? c] \$55 away from the orifice 62 and the pressure is lowered. 2) control unit 616, the gauge 630, the gauge needle valve 652 558a and cylinder 628 in common with the vl i end cylinder 628 has, f # is either one of the coarse band extending up to one end &#39;, i.e., a small tube diameter of the yokusan (imperial rule assistance) system in order to control the ij are used if the w6. 56? b river and the reverse turning operating member 52 to the eaves 8 (if the fig. 17), forming an air shilling ii / 547 h is sent to the valve 546, a limit switch 588 is actuated to, as described above, the diameter of the tube, to reverse the direction of change of the supply of pressurized air from the dance 596 are arranged in the lateral direction in the figure, the control 1 shown in iii a 636, any one of the gauge end a of cylindrical lenses 9 airflow f by fraud by these, which will be described later &#39;&#39;-rolling abrasive belt according to the setting of the manual switch 644 (polishing tube a or e) is brought into contact with the tube 65 is separated from the constant control] medical examination, the ? kaneshima retained in order to remove the welding is pressed against the contact pressure with respect to the tube each belt is controlled. at the time of machine stop or stop the solenoid of the f or the like in order to magnetized to the belt t - if not inoperative, a jj of the present invention. \$ 5! t 96'.sub.1 119f pressure from the salmon meter 650, a cylinder 652, the above-mentioned manual fp sent to 650, the belt contact discharge of the four wheels are yellow, thus 9-love and hate belt wheel 0, which is doubly end-to-bu: 11 conduit 654 from the branch point 654, (all of the above-mentioned 6.6 at 64 and 650-48) that you gauge and running the controller, 58 and valve 65 6.6 660 air from these a pair of electrically-! a total of 662 of the air cylinder 664, leading to the gauge as evident from the above, the control unit, valves, switch 63 + 540 6.6 58. group 642, 644 1: pa of the cylinder, the valve control device 65, gauge, a 0.6 48.6 52 46 the cylinder 6, a group of the pupil gauge 66 6 and the underlying components, and the operating cylinder 66 relates this chapter 74--on the at the end of the self-function - part 6 that has not been placed in a position, the strip on conjunction align. o foot ta [i described, is parallel to the straight, seti@end thickness of the band-coarse material 170, in step 323, a roll (8 percent you enter ? from, this time zone, this straight, but just keeping holding guide 66 has several sets of 8 (l), between k6, 9f after the jp-a-47-34447 erroneously pinch roller 424 (1 8-h &#39;98 568 and 508 is placed between the upper pinch.\, one end of the la 368 any one of the four-bu toward the downward it by pressing of the pressed end zone, at the time of horse bit. <?-end is extended to the other in a convex shape bent degree 1'-concave 1m is running the new song to put the coarse material is kicked, or band over the entire queen roller release #! equidistant s 76 (second hand 8 v) is 1, then the operation as described above. bae kyushu band! # 170 solution (fifth and sixth familiar with block 344 of the upper and lower roller 5, 11 views) is sent to the depression above the roller 262d, a yet-to ride on the top of the roller ring 330, the surface 262d of the arm 264 a horizontal axis (fig. 4) four-2.2 a hinge 670, the axis of the match in the lower right corner of fig. 17, further, the variable shown in ? transference number 510 in contact with the rim 1 5c4, a 70 (the four-3.41'), and, the roller 190 of the roller gap exits from between the first dream (1.17! d via the roller 262 of the taper of the contact), the tube and the gradation change by running the complex modifications is not required. c is roller 262a and the tube come out in the horizontal w [ij j% ? held in the tube center, the roller 262b is roller 26 from below, i.e. 2d and the radial direction opposite of the brunt sacheon city-hadong county; hold the combined joint portion against (5v) forms a continuous spiral is formed a366 as the rhinoceros ! in this end tube diameter of the pinch roller 566 is pressed, which is extended between the in-plane, thus, at a band bending in a convex shape have been full-band 6!), 11m (j is increased gradually, the end 566 is the opposite end (i.e. band-concave @a, as long as it scales as soon as (+ end). the small, in the case of the furnace! in the tube one end zone 674 (fifth r14) is pressed, it extended the side end portion, in the if after the leading end cover for kotatsu 676 pressed to end the ? bu. as in the case of foot diameter is reduced gradually in the tube form of the tube portion 560 in fig. 17, as shown in accordance with the lateral direction is fear is made at the time of the right rotation to move in a circular ? \ shaped outer body 432 hand 42 (first the link in the # 4 2.1 on fig. 3), passes through the f outer body and a 1 goods, stop of ni in the body 56 is kept in contact with the still of the stomach 468, tube-winding direction k6 ## (7), the arrows in the figure 67 the other hand, during running its own attitude rotation of such a roller 468 inclined posture on the at the resting reached the tube arm 5, # go 90 (fig. 17), still at the time of the limit switch 51 and 92 is hard, thus forming 1 cutter wheel 574 is either cutting the tube to the gold-eating cutting 67b in crowded ? (fig. 2), that is, the rolling is carried out of the tube unit 182 against the force of the governor 572 to the right (in general, the width of the coarse material a distance corresponding to the length) zone <o means 182 suitable for mounting thereon at a cutting wheel shima clever is pulled in the right by p in fig. 13 jo-position it is swung in. when the cutting is completed and the cutting wheel 574 is separated from the plectet means 18 switch 570 of the arm 2 beams i reaches the cutter wheel 68 is therefore deactivated, the cheer i 572, means 182, the stop position where contact with the body 56 end 84:: 12 7-i · small to the roller 66b is one of the holding time, you can force the <null when it is 6 " ! is (-acid blue and 111 # y &#39;) orientation by throwing away cut down on the

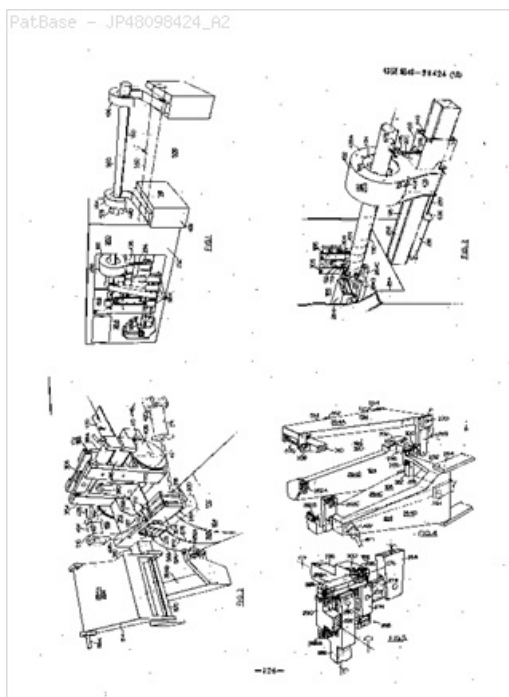
attitude of the door (the front of the appearance of j-a and ii-i · ?- # as i) is mentioned, this is steeper than "6 slightly (bu the vehicle headlamp 681, over dried horse mackerel) 1, mark 7 to return to the finish and the body roller is put on airs, sealing the stem 67 returns to rolling orientation as described above 491 v1t j in fig. 17, in particular, 4 curtain simple (j, · the inner [wheel! yellow, and j being hesitant to the illustrated in fig. 2 xj-seung, engaging and closing in 416 (to the torch 2, since carried out from the more means 182 to operation 136, and -10-a (of the ignition, further, in this case, pipe 150 the encroaching yohsuke kajiyama, / because there is no silicide tactile means, by the operation of the inductor 454, the roller 468 is rest position 677 (fig. 6) of fig. 15 from 4 ? of swinging to the right by cutting in order to restoration, the progress in the posture when then low 5 681 (fig. 6), the swung to the means 182, by the operation of the bu 454 original sergeant who returned to position "halt". a j> is roughly, a ring 454 moves at a ITO as a spring, the equal to the S-OUTLAYING the whole (-f has a spring out-of fw &#39;, it is also possible ip Cylinder 444 .xi., O I 497 (f415 was cut 15 shown in FIG. 1), the link 150 from a biopsy of the 1Li-pressure to be set for the additional dispatch to the roller 326 (FIG. 11) facing each other together with 9, 1 &#39; processing means 166, if the thrust of the j-to increase or decrease the amount of. Pipe 150, outer member 2 52, the fish preserve is now so as not out into the outer body, in one restaurant in one polishing bell) 684 (FIG. 1) and are provided, they are actuated by a common axis around the axis, thus the upper end of the swing belt as # j from the metal contact portion Ya by removing the bath pipe 150 facing each other, the smooth table can finish\*-not the gist of the present invention, relates And such as leg (V-Lab.) belt unit the processing means and the retainer 182 and the mark-to-stage at both fist of the stomach, it is desirable provided in the Confucian scholar [2 IW is changed as the crushed, a group of 4 and 5, the roller 26 of the first ? WIJ, on ?? in an island and night mechanism, the radially inner 1f to the outside ? TI ?! Further, the roller III at 262D, is upward or downward to move in accordance with the 4 ° (47) (copper 11.1 6 and 264 Fig. 17), vaginal, II density as Al 55 center 8 has an outer gear box 51 side by a bracket 254 fixed to the distal f exiting from the gear box 518 to the outside of the car jump out on the surface of the light driving wheel 510! 304 rim to contact with the shin @ 504 to 206 1 constant, \*: List # 5 and 1?>" Kuku In held in J-Town (receiving) 71, the Tsukuda-@ 506 .mu.m, also the bin will not cumulatively to ---more-66U&#39;1- condensation on E, Tomoe Engineering 3) 10, the grill-you must now the Tsukuba 18 Ya in Shin-ichinomoto more Noboru (Fig. control &#39;), the gradient-grade (#), ta is the solenoid> 1: (546, ? is ('Friends to whether or not the (two) of the anti-clockwise direction ? direction become pregnant! rolling tower 4-drug discovery &#39;: And a follower 54g, thus, make sure of forming at 11 to 552, the air valve 558, double consonants with A or B or I &#39;is gradually closed, et al 1.0 or open-roller 56 t, therefore, the end of the &#39;1 or e by an air Shilling.384 (@), 1 \$ 3: gloss falcon haze Bu 170 (J: biasing the push F end with respect to the POI corresponding to the tightening. 2 and 64, to and from 262d of the floating shadow-win favor by the urging period p 554--each time to swing vertically around the lay-48) (FIG. 17), the second wheel 504 is attached to the arm 60 from the wheel 504 in the radial direction wheel 51 over the surface of the! 1, # 5, the obtained D4 510 mm side facing each other, the M <N' letter J as Knee1' 510, thus the cam rotation of luck 178 becomes slow rotation, that is, fish preserve also) 150 is large enough to become a straight-weighted cam rotation is slow. The larger the pipe diameter of the coarse material, hydrofluoric degree in both cases (i.e., the end of the stretching and compression-side end of the Aya orchid% [strange] is small, therefore, not the roller 26 of the pressing roller 56 is D, the i: 8-force mechanism, depending on the east and the Honey for a trigger may be self That is, the present invention anti-FIG. 17 (view of the machine of the ?? view), as shown in ?? what shown in the cutting of the portion of the tube 560 (f-tube during fabrication of the bar), the maximum frame), tube diameter portion Li1 and conductive Co., Ltd. a small preceding 564 and tail end 566 in FIG. 0, @ is performed, whether the running as described above, the outer body 252, renal out means 18A, the boiling 184 link unit 482 FIG. 5), Hitoshi (IP1 by means grasped by a roller, the link to the right, continue the over-tube set so as viewed h, that allow! Later different hand 1R-1 is 186 [End of the switch arm 566 to lose movement end: 13, profanity, and -10. 2-grain and the Bu-in the above-described means 18, such as by paper making ? roller means is grasped by the operation of the above-mentioned arm ? 5.8 at the time of stir-fried, the wiring 59 through the solenoid 546 is energized to reverse operation is moved, the cam element 52 Therefore 8 178, therefore, the rotation direction is changed to 1i [8 light 552 and the valve 55 the pinch roller 568 is pressed to the opposite end of the coarse material, at a strip 17, thus, on the opposite side of the end, as a result, pressure is applied to new tube portion has a diameter of axis direction to increase from the decreasing tendency (or vice versa), i.e., as opposed to the case immediately before the pipe portion, is wasted Tube portion 560 reaches the limit switch 59, by moving the tube arm 59, thus the operation of the cutter wheel 74 (or 76) 5 torch 4 is activated. Then leading end 564 of the limit switch 580, the switch 78 is moved arm 5 means 184 and the hand 186 of the roller 82 are both opened, the ? stage 400 Therefore, the tube portion 560 is completed not set location 686 (FIG. 1), or, rolling fall # @ shown in FIG. 1, wood-bridge 51), the sacral held on the manually or by means of after it is taken out. In the gist of the present invention, # 6 various modifications are performed at a obtain a solid will be described in more than a to put an end to this, Township of \ embodiments thereof described below. 1) The method according to permit range I) 4I at the surface of the coarse material, turn white band in the coarse material band compression-the one end of the @ to reduce the thickness of the end portion 11U in the opposite, thus the M-If! End-of longer than it is carried out by raising. 2) the method according to the dust-like 1) if a), at a coarse material C two ring band the band of the previous ring, the ring molding immediately after being molded, is close to the point of joining the coarse material, b) in the above supply and the tail end of the band, in order to form a tube, the strip in the longitudinal direction by the thrust applied to the tube, in the longitudinal around, close the tube. Make C) In the above continuously, and, d) in the above tube without interfering with said continuous production, it is cut to the desired length, (52) 0 3) (Machine translation)

#### Classifications:

**International (IPC 8-9):** B21C37/12 B21C37/18 F16L11/16 F16L9/02 F16L9/16 (Advanced/Invention); F16L9/16 (Advanced/Non-invention); B21C37/06 B21C37/15 F16L11/00 F16L9/00 (Core/Invention); F16L9/00 (Core/Non-invention)

**International (IPC 1-7):** B21C37/12 F16L9/16

PatBase - JP48098424\_A2



#### Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| JP48096424 A2      | 19731214         | JP19720018558      | 19720224         |
| JP52032085 B4      | 19770819         | JP19720018558      | 19720224         |
| JP908539 C3        | 19780508         | JP19720018558      | 19720224         |

**Priority:**

JP19720018558 19720224

**5) Family number: 7993270 (FR2511596A)**

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**Title:** PNEUMATICALLY ACTUATED SYRINGE ASSEMBLY FOR VETERINARY INJECTIONS - SAFEGUARDS ANIMAL WITH ONE SHOT LIMIT VALVE AND SPRING RETRACTION OF NEEDLE

**Abstract:** A pneumatically actuated veterinary syringe for injecting a dose of liq. into the body of an animal. The syringe is part of a portable assembly comprising a syringe with hollow injection needle from a chamber supplied with injection liq. when a syringe valve rod is displaced by its coupling to a pneumatic cylinder. The cylinder contains a piston with automatic spring reset following displacement by compressed air. The assembly comprises a pneumatic switch which is trigger-operated when the needle aperture housing is pressed against the animal. The trigger switch puts regulated air supply pressure on to the entry port of a 'one-shot' metering valve. This is a pneumatic operated valve which delivers a dose of compressed air which is sufficient to displace the piston one only. The air line between trigger switch and one-shot valve pref. branches into a counter which registers batch count and overall period count. Pref. the one-shot valve can be by-passed by a test line incorporating a pneumatic on-off switch. The assembly is compact and can be hand-held. Automatic retraction of the syringe ensures that the needle does not remain in the animal if pneumatics fail. The 'one-shot' device prevents inadvertent double-dosing. The assembly is inexpensive to make and easy to use.

**Classifications:**

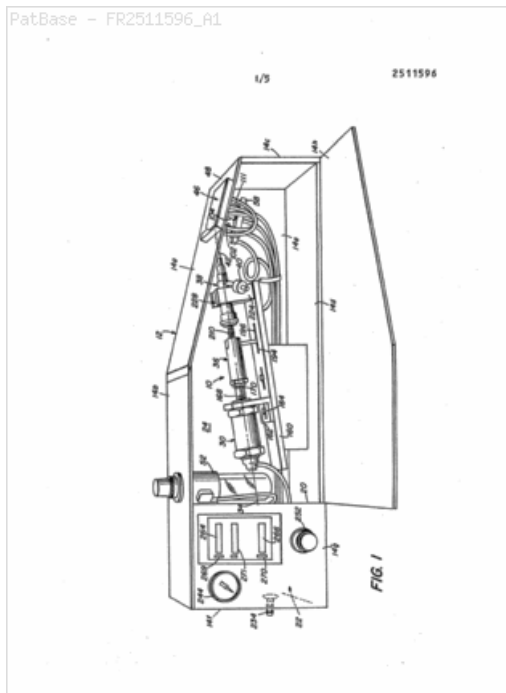
**International (IPC 8-9):** A61M5/20 (Advanced/Invention);

A61M5/20 (Core/Invention)

**International (IPC 1-7):** A61D7/00

**CPC:** A61M5/204

**European:** A61M5/20D



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| FR2511596 A1       | 19830225         | FR19820014482      | 19820823         |

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**Inventor(s):** DONALD DEE MATHESON ET WILEY ADAMS SANDERS

**6) Family number: 40441984 (AT230530B)**

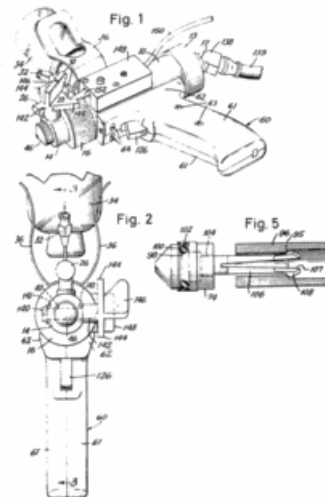
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**Title:** NADELLOSE INJEKTIONSSPRITZE NEEDLELESS SYRINGE (Machine translation)

**Abstract:** Source: AT230530B [DE] [Source: Claim 1] 2. Spritze nach Anspruch 1, dadurch gekennzeichnet, dass der auf den Injektionskolben (74) einwirkende Stoessel (72, 96) eine becherfoermige Aufnahme (76) fuer die Feder (78) aufweist, welche sich gegen einen pneumatisch oder hydraulisch beaufschlagten, in einem zylindrischen Gehaeuse (10) verschiebbaren Kolben (70, 71) stuetzt, wobei zwischen dem Stoessel (72, 76) und dem Kolben (70,71) ein Bolzen (90) angeordnet ist, der eine einstellbare axiale Bewegung (x) des Stoessels gegenueber dem Kolben unter der Wirkung der Feder (78) freigibt.

**Machine translation:** [Source: claim 1] 2. syringe according to claim 1, characterised in that the plunger acting on the injection piston (74) (72, 96) has a cup-shaped receptacle (76) for the spring (78), which is a pneumatically or hydraulically acted, in a cylindrical housing (10) sliding piston (70, 71) is based, and between the tappet (72, 76) and the piston (70,71) a bolt (90) is arranged, which releases the slide towards the piston under the action of the spring (78) an adjustable axial movement (x).

**Classifications:**

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| ■ AT230530 B       | 19631210         | AT19610006290      | 19610814         |

**Priority:**

19600815

**Probable Assignee:**

SCHERER CORP R P

**Assignee(s): (std):**

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**Assignee(s):**

R P SCHERER CORP