



New connection on: : 23-03-2018 : 02:29:35 - Last disconnection on: : 22-03-2018 : 01:02:32

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

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 Database: EPODOC

[EPODOC: SS 1] elevator and (cabin or car) and (inaccuracy or error)

Results in EPODOC 301

[SS 2] 1 and (sensor or detector)

Results in EPODOC 84

[SS 3] 2 and position and distance

Results in EPODOC 10

[SS 4] ..v

[EPODOC: SS 4] ..li



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PN - [US2017253461](#) A1 20170907

PR - EP20140182871 20140829; WO2015EP69702 20150827

AP - US201515506764 20150827

DT - \*\*

CCI - [B66B1/44](#)

CUI - [B66B1/28](#) ; [B66B1/3492](#) ; [B66B5/0018](#) ; [B66B9/00](#)

PA - INVENTIO AG [CH]

TI - METHOD AND ARRANGEMENT FOR DETERMINING **ELEVATOR** DATA BASED ON THE **POSITION** OF AN **ELEVATOR CAR**

AB - A method and an arrangement for determining **elevator** data based on the **position** of an **elevator car** of an **elevator** system includes the **elevator car** having a flag reading **sensor**, the **elevator car** being movably arranged in a hoistway and can be

moved by a drive with a suspension rope over a traction sheave, and the **elevator car** can be stopped at a plurality of stopping positions of the hoistway. Each stopping **position** has a flag marker with a flag height. Movement of the **elevator car** is determined by a control unit connected to an encoder at the traction sheave. When leaving a stopping **position**, the travelled **distance** of the **elevator car** between the stopping **position** and a flag edge is measured and a stopping **inaccuracy** is determined by the control unit.

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- PN - [CN106573752](#) A 20170419
- PR - EP20140182871 20140829; WO2015EP69702 20150827
- AP - CN2015844944 20150827
- DT - I
- CCI - [B66B1/44](#)
- CUI - [B66B1/28](#) ; [B66B1/3492](#) ; [B66B5/0018](#) ; [B66B9/00](#)
- PA - INVENTIO AG
- TI - Method and arrangement for determining **elevator** data based on **position** of **elevator cabin**
- AB - A method and an arrangement for determining **elevator** data based on the **position** of an **elevator cabin** (3) of an **elevator** system (1), wherein the **elevator cabin** (3) has a flag reading **sensor** (15), is movably arranged in a hoistway (2) and can be moved by a drive (8) over a traction sheave (9) and at least one suspension means (5) an can be stopped at a plurality of stopping positions (18) of the hoistway (2), each stopping **position** (18) having a flag marker (13) with a flag height (F), and wherein movement of the **elevator cabin** (3) is determined by a control unit (10) connected to an encoder (12). When leaving a stopping **position**, the travelled **distance** (D) of the **elevator cabin** (3) between the stopping **position** and a flag edge (14) is measured and a stopping **inaccuracy**(I) is determined by the control unit (10).

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PN - [CA2956175](#) A1 20160303

PR - EP20140182871  
20140829; WO2015EP69702  
20150827

AP - CA20152956175 20150827

DT - I

CCI - [B66B1/44](#)

CUI - [B66B1/28](#) ; [B66B1/3492](#) ;  
[B66B5/0018](#) ; [B66B9/00](#)

PA - INVENTIO AG [CH]

TI - METHOD AND ARRANGEMENT  
FOR DETERMINING **ELEVATOR**  
DATA BASED ON THE **POSITION**  
OF AN **ELEVATOR CABIN**

AB - A method and an arrangement  
for determining **elevator** data  
based on the **position** of  
an **elevator cabin** (3) of  
an **elevator system** (1),  
wherein the **elevator cabin** (3)  
has a flag reading **sensor**  
(15), is movably arranged in a  
hoistway (2) and can be  
moved by a drive (8) over a  
traction sheave (9) and at  
least one suspension means  
(5) and can be stopped at a  
plurality of stopping  
positions (18) of the hoistway  
(2), each stopping **position**  
(18) having a flag marker (13)  
with a flag height (F), and  
wherein movement of  
the **elevator cabin** (3) is  
determined by a control unit  
(10) connected to an encoder  
(12). When leaving a  
stopping **position**, the  
travelled **distance** (D) of  
the **elevator cabin** (3) between  
the stopping **position** and a  
flag edge (14) is measured  
and a stopping **inaccuracy** (I)  
is determined by the control  
unit (10).

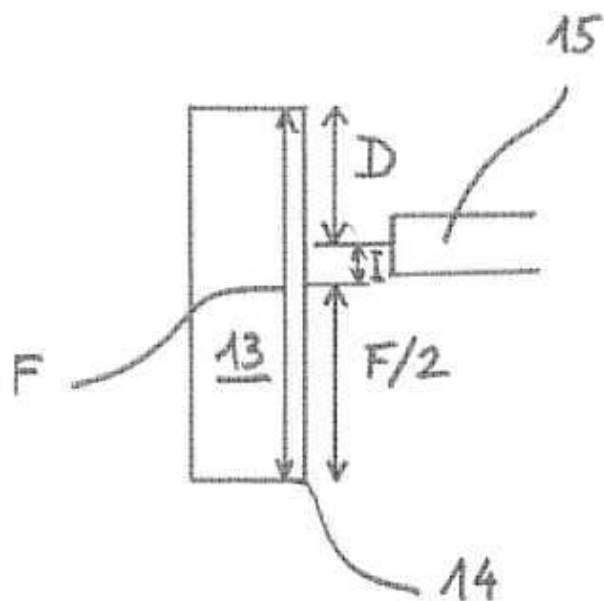


Fig. 2

4/10 © EPODOC / EPO

PN - [CN105173935](#) A 20151223

PNFP - CN105173935B B 20170405

PR - CN20151477522 20150806

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP | - CN20151477522 20150806                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DT | - I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| CT | <ul style="list-style-type: none"> <li>-    STSE (A)<br/> <a href="#">JPS552537</a> A 19800110 [A] (HITACHI LTD)<br/> [A] 1-10<br/> * 全文 *;</li> <li>- <a href="#">US5223680</a> A 19930629 [A] (SCHMIDT-MILKAU CLAUDIA M [DE], et al)<br/> [A] 1-10<br/> * 全文 *;</li> <li>- <a href="#">EP1024372</a> A1 20000802 [A] (SCHMERSAL K A GMBH &amp; CO [DE])<br/> [A] 1-10<br/> * 全文 *;</li> <li>- <a href="#">CN1410335</a> A 20030416 [A] (MITSUBISHI ELECTRIC CORP [JP])<br/> [A] 1-10<br/> * 全文 *;</li> <li>- <a href="#">CN101495394</a> A 20090729 [A] (FRABA AG [DE])<br/> [A] 1-10<br/> * 全文 *;</li> <li>- <a href="#">CN102491132</a> A 20120613 [X] (SHANGHAI STEP ELECTRIC CORP)<br/> [X] 1-6<br/> * 说明书第3段至第27段, 附图1-4 *;</li> <li>- <a href="#">CN103832905</a> A 20140604 [A] (HITACHI ELEVATOR CHINA CO LTD)<br/> [A] 1-10<br/> * 全文 *</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PA | - (A)<br>HITACHI ELEVATOR CHINA CO LTD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| TI | - (A)<br>Control device and method of <b>elevator</b> flat floor <b>position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| AB | <ul style="list-style-type: none"> <li>- (A)<br/> The invention relates to a control device and method of the <b>elevator</b> flat floor <b>position</b>. An <b>elevator</b> comprises a shaft, an <b>elevator car</b>, and a drive device driving the <b>elevator car</b> to move, and the <b>elevator car</b> and the drive device are arranged in the shaft. The control device of the <b>elevator</b> flat floor <b>position</b> comprises at least one ranging <b>sensor</b> arranged on the top or bottom of the shaft, baffles opposite to the ranging sensors, and a control system electrically connected with the ranging sensors. The baffles are fixed to the <b>elevator car</b>. The control system is electrically connected with the drive device. The ranging sensors are fixed to the shaft and matched with the baffles fixed to the <b>elevator car</b>. Thus, installing and adjusting are convenient, the installing convenience is improved, the production efficiency is high, and the installing progress of the <b>elevator</b> project is guaranteed. The real-time and accurate measurement is carried out on the <b>position distance</b> of the <b>elevator car</b> through the ranging sensors, the running of the <b>elevator car</b> is controlled through the control system, and the problem that the longer running time of the <b>elevator</b> is, the larger the generated flat floor <b>error</b> becomes is solved. The running of the <b>elevator</b> is safer, and the accuracy of the <b>elevator</b> flat floor <b>position</b> is guaranteed.</li> </ul> |

PN - [WO2016030487](#) A1 20160303  
 PR - EP20140182871 20140829  
 AP - WO2015EP69702 20150827  
 DT - \*\*  
 CT - |EP| ISR (A1)  
       [GB2255246](#) A 19921028  
       [XA] (HITACHI LTD [JP])  
       [X] 1,3,10,14,15  
       \* page 9, lines 13-16 \*  
       \* page 10, line 15 - page 11,  
       line 10; claims 5,6 \*  
       [A] 2,4-9,11-13;  
       [US6026935](#) A 20000222  
       [A] (KOH EUN-MAN [KR])  
       [A] 1-15  
       \* column 9, lines 10-62;  
       figures 10,11,21 \*  
 CCI - [B66B1/44](#)  
 CUI - [B66B1/28](#) ; [B66B1/3492](#) ;  
       [B66B5/0018](#) ; [B66B9/00](#)  
 PA - INVENTIO AG [CH]  
 TI - METHOD AND ARRANGEMENT  
       FOR DETERMINING **ELEVATOR**  
       DATA BASED ON THE **POSITION**  
       OF AN **ELEVATOR CABIN**  
 AB - A method and an arrangement  
       for determining **elevator** data  
       based on the **position** of  
       an **elevator cabin** (3) of  
       an **elevator** system (1),  
       wherein the **elevator cabin** (3)  
       has a flag reading **sensor**  
       (15), is movably arranged in a  
       hoistway (2) and can be  
       moved by a drive (8) over a  
       traction sheave (9) and at  
       least one suspension means  
       (5) and can be stopped at a  
       plurality of stopping  
       positions (18) of the hoistway  
       (2), each stopping **position**  
       (18) having a flag marker (13)  
       with a flag height (F), and  
       wherein movement of  
       the **elevator cabin** (3) is  
       determined by a control unit  
       (10) connected to an encoder  
       (12). When leaving a  
       stopping **position**, the  
       travelled **distance** (D) of  
       the **elevator cabin** (3) between

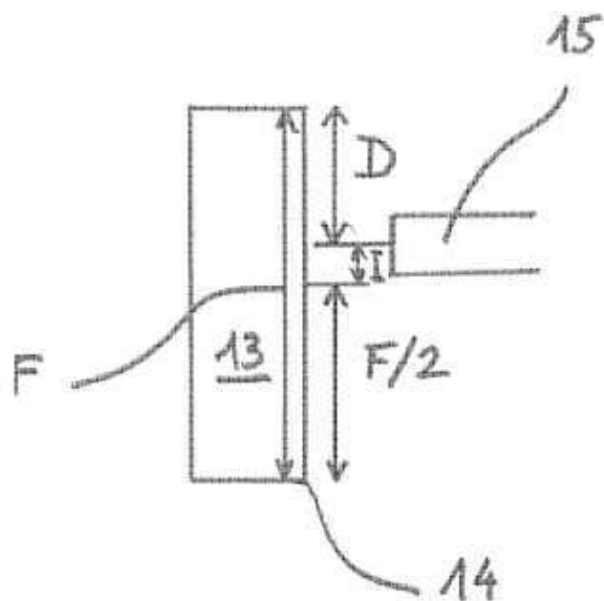


Fig. 2

the stopping **position** and a flag edge (14) is measured and a stopping **inaccuracy**(I) is determined by the control unit (10).

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PN - [EP2990369](#) A1 20160302  
 PR - EP20140182871 20140829  
 AP - EP20140182871 20140829  
 DT - \*; Rep  
 CT - || STSE (A1)  
[GB2255246](#) A 19921028  
 [XA] (HITACHI LTD [JP])  
 [X] 1,3,10,14,15  
 \* page 9, lines 13-16 \*  
 \* page 10, line 15 - page 11, line 10; claims 5,6 \*  
 [A] 2,4-9,11-13;  
[US6026935](#) A 20000222  
 [A] (KOH EUN-MAN [KR])  
 [A] 1-15  
 \* column 9, lines 10-62; figures 10,11,21 \*

CCI - [B66B1/44](#)  
 CUI - [B66B1/28](#) ; [B66B1/3492](#) ;  
[B66B5/0018](#) ; [B66B9/00](#)

PA - INVENTIO AG [CH]  
 TI - Method and arrangement for determining **elevator** data based on the **position** of an **elevator cabin**  
 AB - A method and an arrangement for determining **elevator** data based on the **position** of an **elevator cabin** (3) of an **elevator** system (1), wherein the **elevator cabin** (3) has a flag reading **sensor** (15), is movably arranged in a hoistway (2) and can be moved by a drive (8) over a traction sheave (9) and at least one suspension means (5) an can be stopped at a plurality of stopping positions (18) of the hoistway (2), each stopping **position** (18) having a flag marker (13) with a flag height (F), and wherein movement of

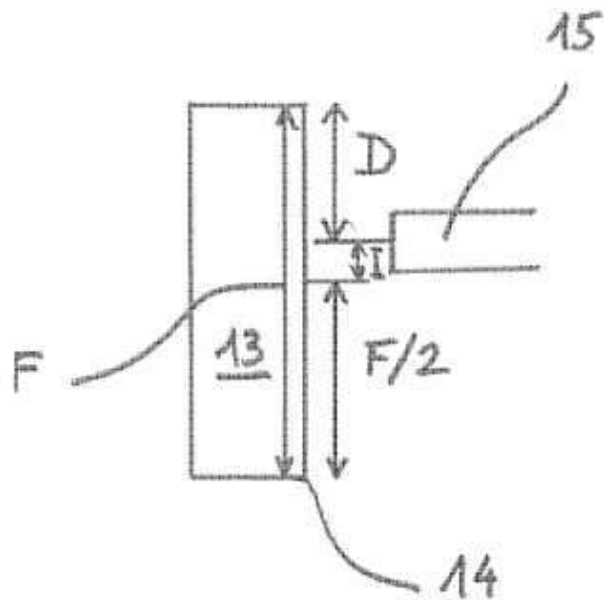


Fig. 2

the **elevator cabin** (3) is determined by a control unit (10) connected to an encoder (12). When leaving a stopping **position**, the travelled **distance** (D) of the **elevator cabin** (3) between the stopping **position** and a flag edge (14) is measured and a stopping **inaccuracy** (I) is determined by the control unit (10).

#### 7/10 © EPODOC / EPO

- PN - [JP2010208781](#) A 20100924
- PR - JP20090055515 20090309
- AP - JP20090055515 20090309
- DT - I
- FI - B66B1/42&Z; B66B7/06&Z
- FT - 3F002/AA02; 3F002/CA03; 3F002/DA07; 3F305/BB01; 3F305/BB19; 3F305/BC19; 3F502/HA01; 3F502/JB03; 3F502/JB05; 3F502/KA22
- PA - TOSHIBA ELEVATOR CO LTD
- TI - **ELEVATOR**
- AB - PROBLEM TO BE SOLVED: To properly correct the floor landing **position** of a plurality of cars lifted by the same driving system.  
 - SOLUTION: When the **car** lands on a floor of an object story, the floor landing **error** detecting part 8a of the main control device 8 detects an **error** value of the floor landing **position** in a landing hall of the **car** 3 based on the input number of pulse signals from a floor landing **sensor** 7 of the **car** 3. A driving quantity calculating part 8b of the main control device 8 calculates the movement required **distance** of driving type deflector sheaves 5a and 5b for correcting the floor landing **position** of the **car** 3 so as to eliminate the **error** based on this detected **error** value. Deflector sheave driving devices 6a and 6b move the driving type deflector sheaves 5a and 5b in response to the **distance** calculated by the main control device 8, and corrects the floor landing **position** of the **car** 3 connected to the lower end of the main connecting rope 12 by upwardly correcting the height of the lower end of the main connecting rope 12 by curving the main connecting rope 12 of a winding destination.  
 - COPYRIGHT: (C)2010,JPO&INPIT

#### 8/10 © EPODOC / EPO

- PN - [JP2000118903](#) A 20000425
- PR - JP19980289064 19981012
- AP - JP19980289064 19981012
- DT - I
- CCI - [B66B5/12](#)
- FI - B66B1/28; B66B5/02&C; B66B5/12&A
- FT - 3F002/AA04; 3F002/CA02; 3F002/DA07; 3F002/DA08; 3F002/GB02; 3F304/BA26; 3F304/CA07; 3F304/CA11; 3F304/EA11; 3F304/EA22; 3F304/EB01; 3F502/JB03; 3F502/JB12; 3F502/JB14; 3F502/KA18; 3F502/KA34; 3F502/KA50

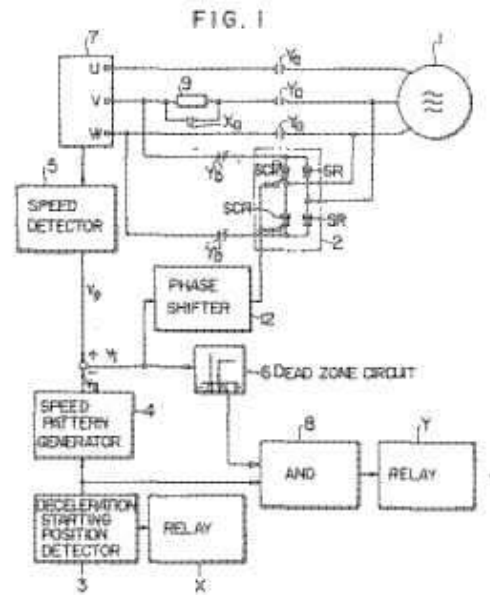
PA - HITACHI LTD  
 TI - **ELEVATOR**  
 AB - PROBLEM TO BE SOLVED: To suppress the slip between a rope and a sheave and to reduce a landing **error** by calculating whether a large slip exceeding a tolerance occurs or not based on the weight unbalance and slip **distance** constructed in advance, and decreasing the slip **distance** occurring between the rope and sheave when the slip exceeds the tolerance. SOLUTION: A motor 6 of a rope type **elevator** is provided with a rotational quantity detecting device 7, and a **car** 2 is provided with a **car position** detecting device 8 and a live load detecting device. A sheave 4 is provided with a balance **sensor**. Whether a slip occurs between a rope 1 and the sheave 4 or not is estimated from the weight unbalance calculated based on the weight unbalance from the balance **sensor** or the signal from the live load detecting device before an **elevator** operation. Whether the detected weight unbalance is below a tolerance or not is judged by collating the obtained value with a friction coefficient database prepared in advance, and a slip **distance** reducing process is conducted when the weight unbalance exceeds the tolerance.

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PN - [JPH0853274](#) A 19960227  
 PR - JP19940187442 19940809  
 AP - JP19940187442 19940809  
 DT - I  
 FI - B66B11/00&A; B66B5/12&A; B66B7/12&Z  
 FT - 3F304/BA11; 3F304/EA05; 3F304/ED05; 3F305/BB02; 3F305/DA18; 3F306/AA02; 3F306/CB50; 3F306/CB60; 3F306/DA00  
 PA - MITSUBISHI ELECTRIC BILL TECH  
 TI - **POSITION** INSPECTION DEVICE FOR BALANCE WEIGHT  
 AB - PURPOSE:To improve services for a user and shorten a work time by eliminating the need of stopping an **elevator** and entering a pit at the time of inspection. CONSTITUTION:When an **elevator** ascends from a reference floor near the lowest floor, a **detector** 10 detects a detection piece 9 fitted to a balance weight 4 at a **position** near an intermediate floor. Also, a **position** operation device 11 always knows the **position** of an **elevator car**, according to pulse signals from an encoder and, therefore, can find a **car** travel **distance** from the ascent start **position** of a **car** 1 to the level where the piece 9 is detected. In this case, the **distance** varies, due to the elongation and contraction of a main rope 3. On the contrary, therefore, the elongation and contraction of the rope 3 can be found from the variation of the **distance**, and the device 11 can find the **position** of the weight 4. When the **position** of the weight 4 is abnormal, an output device reports the **error** of the weight 4 by means of a sound, light or the like.

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PN - [GB1456434](#) A 19761124  
PR - JP19730009541 19730124  
AP - GB19740002822 19740121  
DT - \*\*  
CCI - [B66B1/40](#)  
PA - HITACHI LTD  
TI - **ELEVATOR CONTROL SYSTEM**  
AB - 1456434 Automatic control of elevators HITACHI Ltd 21 Jan 1974 [24 Jan 1973] 02822/74 Heading G3N [Also in Division H2] In a braking control system for an **elevator car**, braking taking place according to a predetermined pattern, instigation of braking is delayed for a period commencing at the initiation of the deceleration speed pattern signal from generator 4 until the difference between a signal representative of actual motor load (speed or current) and the pattern signal  $V_s$  exceeds a predetermined level  $V_k$ . Jerk at the initiation of braking for a heavily loaded and hence lower speed **car** is thus reduced. As shown, when the **car** is a predetermined **distance** from a destination floor, **detector** 3 provides an output initiating the generation of the deceleration pattern signal  $V_s$ , see Fig. 2 (not shown) and operates relay X to insert resistor 9 in the path between three phase induction motor 7 and supply 1, reducing motor torque from a full to intermediate value. Speed **detector** 5 mechanically connected to the motor provides an actual speed signal  $V_p$  with which the pattern signal  $V_s$  is subtractively combined to produce **error** signal  $V_i$ . Not until the pattern signal  $V_s$  has so decreased that  $V_i$



exceeds  $V_k$  as detected in circuit 6 is AND 8 opened to operate relay Y, disconnecting the motor from the supply and coupling it to a D.C. braking rectifier 2 controlling the braking effort, itself being controlled by the **error** signal  $V_i$  controlling the firing angle of thyristors SCR. The pattern  $V_s$  and magnitude  $V_k$  are so set that the delay before braking is initiated is approximately one quarter of the **car's** natural vibration frequency on the haulage cable. The delay, dependent on **car** load, may be extended by insertion of a delay means (not shown) at the output of **position detector** 3.

Modifications:- Separate subtractive combinations of the actual speed, and pattern, signals may take place to provide distinct **error** signals ( $V_{i1}$ ,  $V_{i2}$ ) Figs. 6, 7 (not shown), to buffer the operation of the phase shifter 12 from that of the dead zone circuit 6. The output of either of pattern generator 4, or speed **detector** 5, by the insertion of resistor (14), Fig. 9 (not shown), under control of the relay X, may be varied to control the degree of delay. The dead zone circuit 6 may receive a signal ( $V_{i2}$ ) Fig. 10 (not shown) derived by subtractive combination of a signal  $V$ , a linear decreasing function of the motor current derived by converter (16), and the pattern voltage, initiation of braking being delayed until the combination exceeds  $V_k$ .