

L. ROTTENBURG.

DEVICE FOR SETTING THE SELECTIVE CONTROLLING APPARATUS ON A MOVING AUTOMATIC
GOODS CONVEYER OR TRUCKER FROM A FIXED STATION.

APPLICATION FILED MAR. 14, 1913.

1,244,546.

Patented Oct. 30, 1917.

3 SHEETS—SHEET 1.

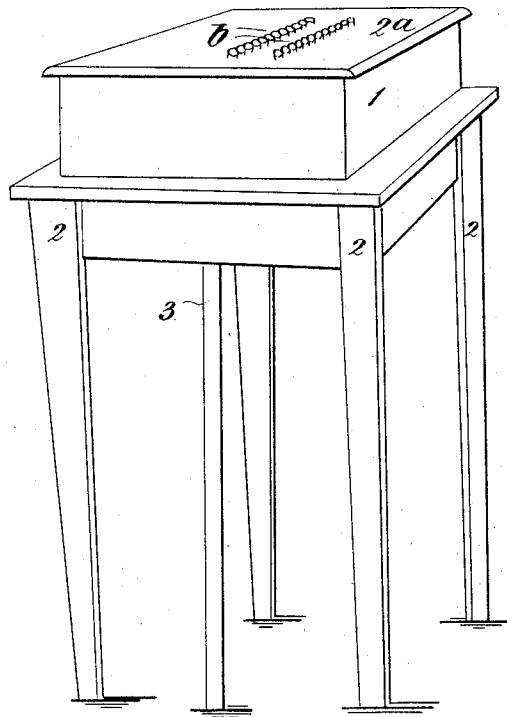


Fig. 1

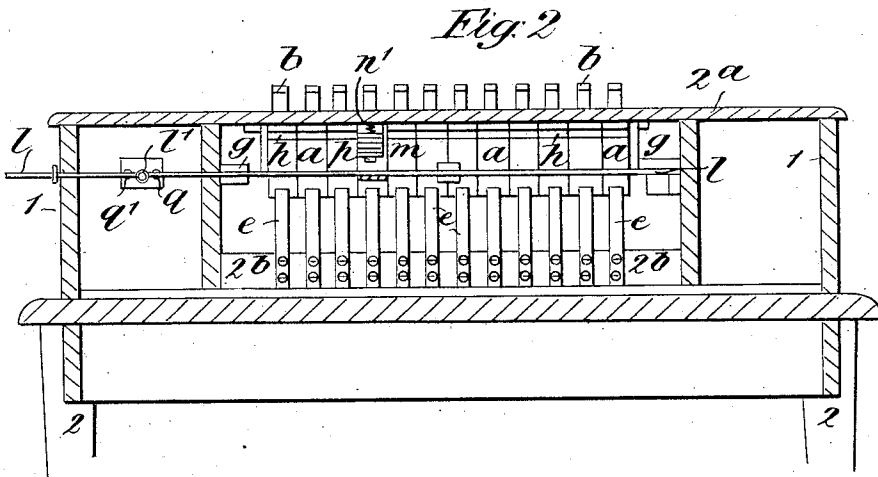


Fig. 2

Witnesses:

Chas. E. Whitman.

H. E. Penney.

Inventor,

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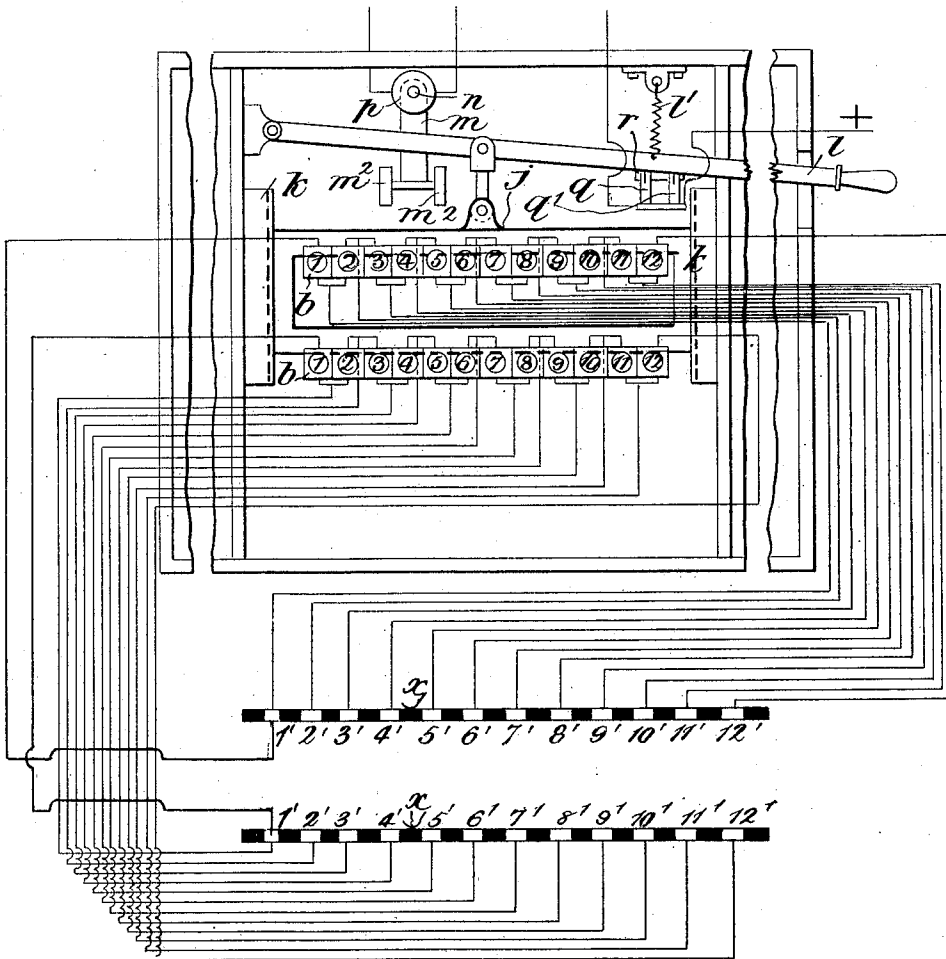
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3 SHEETS—SHEET 2.

Fig. 3.



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3 SHEETS—SHEET 3.

Fig 4

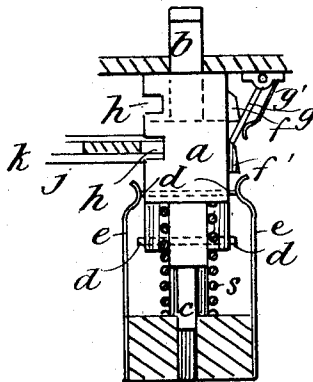


Fig 5

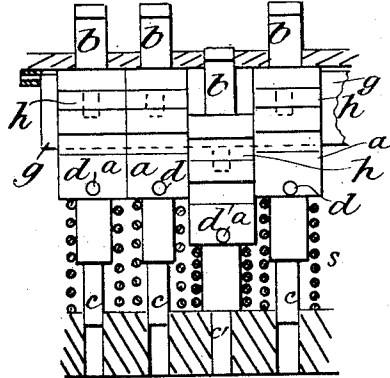


Fig. 8.

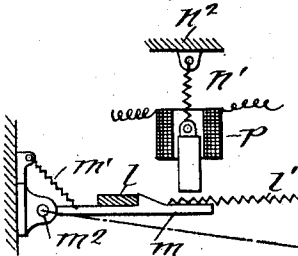


Fig. 6.

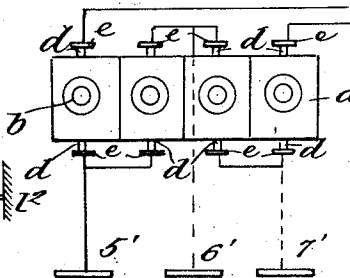
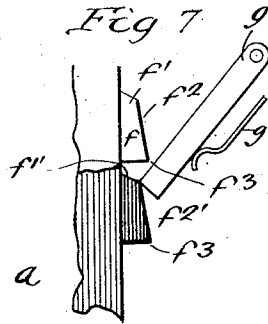


Fig 7



Witnesses;

Louis O. Bodeau.
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Inventor:

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UNITED STATES PATENT OFFICE.

LOUIS ROTTENBURG, OF EALING, LONDON, ENGLAND.

DEVICE FOR SETTING THE SELECTIVE CONTROLLING APPARATUS ON A MOVING
AUTOMATIC GOODS CONVEYER OR TRUCKER FROM A FIXED STATION.

1,244,546.

Specification of Letters Patent.

Patented Oct. 30, 1917.

Application filed March 14, 1913. Serial No. 754,242.

To all whom it may concern:

Be it known that I, LOUIS ROTTENBURG, a subject of the King of Great Britain, residing in Ealing, London, England, have invented certain new and useful Improvements in and Relating to Devices for Setting the Selective Controlling Apparatus on a Moving Automatic Goods Conveyer or Trucker from a Fixed Station, of which the following is a specification.

This invention relates to improvements in and relating to contact controlling means designed primarily for imparting a predetermined number of current impulses to apparatus controlling the operation of mechanism for effecting the transfer of a tray of goods between two moving vehicles or a fixed point and a moving vehicle.

The apparatus to be actuated by the current impulses forms no part of the invention but for the purpose of affording a better understanding of the same a short general description of such apparatus is given.

The apparatus just referred to comprises a rotating body provided with means designed at a predetermined point in the rotation of the said body to close an electric circuit whereupon the particular mechanism included in said circuit is set in motion. A step by step movement is imparted to the said body by means of a ratchet and pawl actuated by an electromagnet, and the purpose of the present invention is to provide means for giving the necessary current impulses to the magnet so that the rotary body may be primarily advanced through such an angle represented by a predetermined number of teeth of the ratchet wheel so that as the vehicle travels on its course and passes other vehicles or stations receiving as it approaches each of said vehicles or stations a single impulse, the impulses so given will rotate the body until the circuit closing means is brought into operation and the transfer takes place.

For convenience of description the magnetically actuated device just described will be hereafter referred to as "the register" and the initial movements imparted thereto will be referred to as "the setting" of the said "register." To further simplify the description the vehicle or station, or ve-

hicles or stations, at which the transfer takes place, will be referred to as "receiving" or "delivery points" accordingly as the tray is received or delivered. The setting of the register, as will be evident from the foregoing description, is necessary in order to bring the rotary body thereof into a position such that the further impulses which are imparted there are equal to the number of points the vehicle will pass without a transfer taking place plus one, that at which the said transfer does take place.

The device according to this invention comprises a main switch controlling a circuit including a number of contacts arranged in rows and disposed in the path of a brush or other device carried by a vehicle the number of current impulses being determined by the number of live contacts over which the said brush passes. Associated with each contact is a manually operated means whereby the chain of live contacts may be interrupted at any point so that part of the row is then cut out.

Provision is made for holding the circuit closing means for the contact in the open position until the desired number of current impulses have been imparted, and for returning them to the position ready for further operation.

It will be gathered from the foregoing that the number of contacts and the number of keys controlling such contacts are each equal to the number of teeth of the ratchet of the register between the contact closing means thereof. Each time the circuit is closed and the brush on the vehicle passes over a live contact the magnet causes the ratchet to move its wheel one tooth.

To facilitate the understanding of the invention, drawings are appended, but it will be understood that it is not thereby intended to limit the invention in any way to the example given. In the particular embodiment of the invention illustrated it is assumed that two registers are to be controlled and therefore two rows of keys are required which are numbered in accordance with the number of contacts they control one row for the register representing groups or divisions of receiving points and the other row for the register representing receiving points in each group.

In the accompanying drawings, Figure 1 is an elevation of a device according to this invention.

Fig. 2 is a transverse section of the device.

Fig. 3 is a plan with the cover removed.

Figs. 4, 5 and 6, respectively, show in detail the keys or push-buttons in side elevation, in rear elevation, and in plan.

Fig. 7 shows a detail of the key shown in Fig. 4, enlarged.

Fig. 8 shows in diagrammatic form the locking and releasing devices of the main despatching lever and push-buttons in plan and in elevation.

Referring to the drawings, 1 indicates a box like body supported upon legs 2, the whole presenting a desk like appearance, and 2^a indicates the top thereof. 3 indicates the wires connecting the keys and contacts.

Figs. 4, 5 and 6 show the details of these keys, in which *a* indicates an insulating body having a connecting piece *d*. This part *a* which is part of the key, is rectangular in cross section, while the upper and lower parts, *b* and *c*, are cylindrical, and are guided in holes in the cover 2^a and base 2^b of the despatching table. At the top of *b* the "number" is fixed, as on the keys of a typewriter. The shape of the body *a* prevents the keys from turning, as the thickness of *a* is equal to the pitch of the holes less working clearance. Each key is held up by a helical spring *S*, so that *d* connects the two spring contacts *e e* electrically, until the key is depressed, and *d* is brought into position *d'* and the connection broken. The depressed key is held down by the catch bar *g* which is hinged or pivoted at its upper edge, and pressed against the row of keys by a spring *g'*. This bar engages the catch *f* (fixed to *a*) when it gets to its lower position *f'*. The catch *f* has a gently inclined surface *f¹* and a sharply inclined surface *f²*, as shown in Fig. 7. The hatched parts represent a key *a'* which has been depressed, and the catch *f'* of which has been held down by the catch bar *g* engaging the surface *f¹*, and the unhatched parts represent another key "*a*" which is being depressed in its stead. The lower edge *f³* of its catch *f* forces the catch-bar *g* out of engagement with the surface *f¹* of the catch *f'* and the inclined surface *f²* is too steep to prevent the spring of *a'* from forcing key *a'* up. When key *a* is entirely depressed the catch bar *g* engages on surface *f¹* of the catch *f*. Thus the depressing of any key releases the last key depressed.

At the back the body *a* has two slots *h h* (Fig. 4) cut across it. The main despatching switch *l*, Fig. 8, is coupled to a locking-bar *j*, which slides in a guide channel *k*. When the switch is closed the bar enters the upper slot of the depressed key or keys

as shown in Fig. 8 where two rows are shown, and the lower slots of all the other keys, and locks all the keys, so that the operator cannot alter the setting during a transfer. If the operator depresses the wrong keys he must make the necessary correction before closing the despatching switch.

As already explained, the keys are released when the transfer takes place, and this is effected in the following manner. On reference to Fig. 8 it will be seen that their several locking bars *j* are combined into one locking frame for locking a corresponding number of rows of keys. A spring *l¹*, anchored to a fixed point *l²* tends to pull the lever *l* and switch blade *r* into the "off" position, but it is prevented from doing so by the catch *m* (Fig. 8) hinged to a fixed point *m²*, engaging the lever *l* under the influence of the spring *m¹*. As shown in Fig. 8 a steel or iron solenoid core or plunger *n* is suspended from a fixed point *n²* by a spring *n¹* in such a way that when at rest the plunger hangs just clear of the catch *m* as shown. The solenoid *p* is connected in series with some portion of transfer mechanism of the despatching station, which is only energized when a transfer is made and a tray despatched. During the despatch the plunger *n* is drawn up into the solenoid and when the current is cut off afterward, the plunger drops, striking the catch *m* and releasing the lever *l* and switch-blade *r*. *g, g'*, are the contacts for the blade *r* carried by the lever *l* of the switch and by means of which the current of the contacts is controlled.

The action of the apparatus is as follows:—

It will be noted that in the example illustrated there are twelve keys numbered 1 to 12 and therefore twelve contacts in the row which are numbered 1' to 12'. The number of keys and contacts are the same for each row in the example given. Assuming it is desired to impart seven impulses to the register, key number 5 is depressed whereby the contacts Nos. 1 to 5 are cut out and the remainder, 6 to 12, are retained. These contacts are, as already explained, arranged in the path of a brush or wiper indicated by *x*, Fig. 3, carried by the vehicle and consequently as the said brush passes over the said contacts the register will receive 7 impulses and the desired setting is effected. The setting of the second register is similarly effected. It has already been explained that the main switch *l* is not closed until the depression of the keys has been effected, after which the depressed keys are held against further operation until the catch *m* is released by the spring suspended core *n* of magnet *p*, which magnet as before stated, is only energized when the desired operation,

the transfer of the tray of goods, takes place.

Having thus described my invention, I claim:—

5 1. In a device of the class described, a contact controlling device comprising a switch member, a number of fixed contacts with which said switch member contacts to close its circuit, a corresponding number of
10 movable contacts controlling the circuits of said fixed contacts, and a number of keys operatively associated with said movable contacts.

2. In a device of the class described, a con-
15 tact controlling device comprising a switch member, a number of fixed contacts with which said switch member contacts to close its circuit, a corresponding number of movable contacts controlling the circuits
20 of said fixed contracts, and a number of keys operatively associated with said movable contacts, and means for locking the movable contacts after they have been operated.

3. In a device of the class described, a con-
25 tact controlling device comprising a switch, adapted to contact with a number of fixed contacts with which are associated circuit closing means comprising resilient members, contacts for bridging said members each car-
30 ried by a spring pressed body, a projection upon said body, and a spring pressed member engaging such projections when the bodies are depressed.

4. In a device of the class described, a con-
35 tact controlling device comprising a switch, a number of fixed contacts with which are associated circuit closing means comprising resilient members, contacts for bridging said members each carried by a spring pressed
40 body, a numbered key associated with said spring pressed body, a projection upon said body, a spring pressed member engaging such projections when the bodies are de-
45 pressed, recesses upon said body, and a bar associated with the switch lever engaging said recesses when the switch is closed.

5. In a device of the class described, a con-
50 tact controlling device comprising a switch, a number of fixed contacts with which are associated circuit closing means comprising resilient members, contacts for bridging said members each carried by a spring pressed body, a numbered key associated with said spring pressed body, a projection upon said

body, a spring pressed member engaging 55
such projections when the bodies are de-
pressed, recesses upon the said body, a bar
associated with the switch lever engaging
said recesses when the switch is closed, means
for locking the lever of the despatch switch, 60
and means for releasing said locking means.

6. In a device of the class described, a con-
tact controlling device comprising a switch,
a number of fixed contacts with which are
associated circuit closing means comprising 65
resilient members, contacts for bridging said
members each carried by a spring pressed
body, a numbered key associated with said
spring pressed body, a projection upon said
body, a spring pressed member engaging 70
such projections when the bodies are de-
pressed, recesses upon the said body, a bar
associated with the switch lever engaging
said recesses when the switch is closed, a
spring pressed arm, a detent upon said arm 75
engaging the lever of the despatch switch,
and means for operating said arm to release
said lever.

7. In a device of the class described, a
contact controlling device comprising a 80
switch, a number of fixed contacts with
which are associated circuit closing means
comprising resilient members, contacts for
bridging said members each carried by a
spring pressed body, a numbered key asso- 85
ciated with said spring pressed body, a pro-
jection upon said body, a spring pressed
member engaging such projections when the
bodies are depressed, recesses upon the said
body, a bar associated with the despatch lever 90
engaging said recesses when the switch is
closed, a spring pressed arm, a detent upon
said arm engaging the lever of the despatch
switch, a solenoid and a spring suspended
core in said solenoid, said core being nor- 95
mally clear of the spring arm locking the
despatch switch and contacting therewith
under the recoil when the solenoid has been
energized by the current for despatching
and the current cut off. 100

In witness whereof I have hereunto signed
my name in the presence of the two under-
signed witnesses.

LOUIS ROTTENBURG.

Witnesses:

GUY E. LLOYD,
E. GUY BRYAN.