

(No Model.)

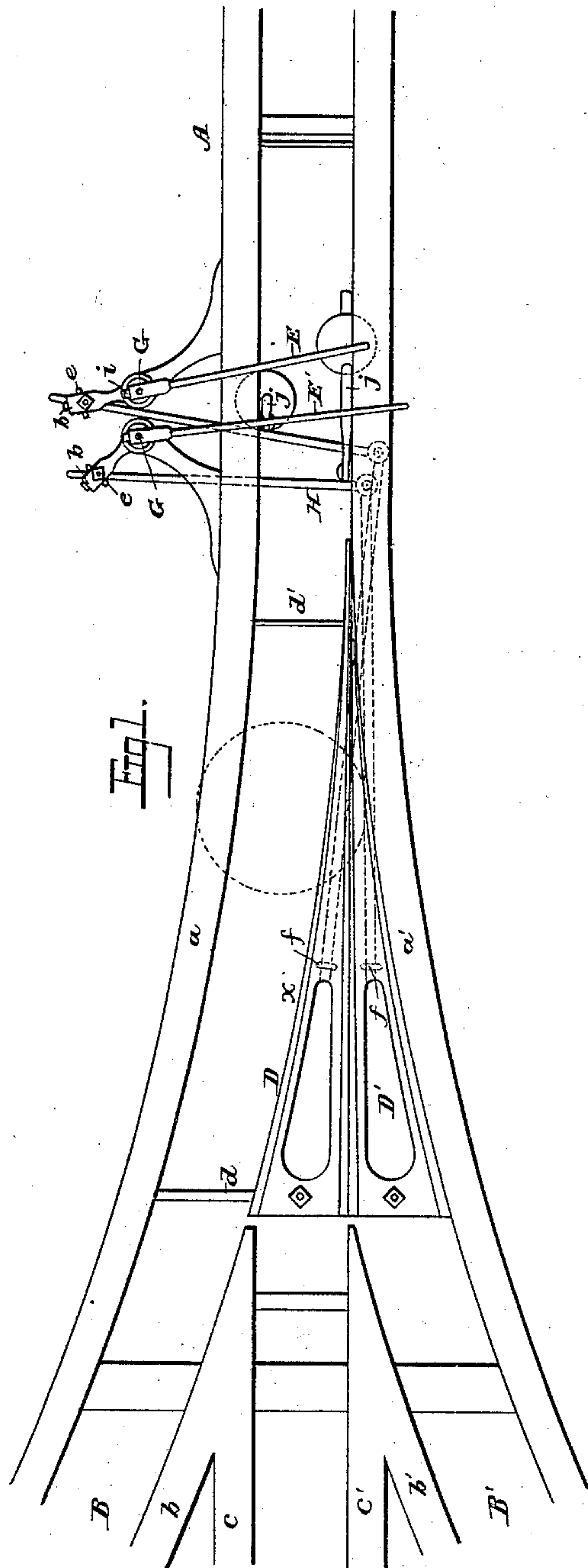
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H. L. LOVEJOY.

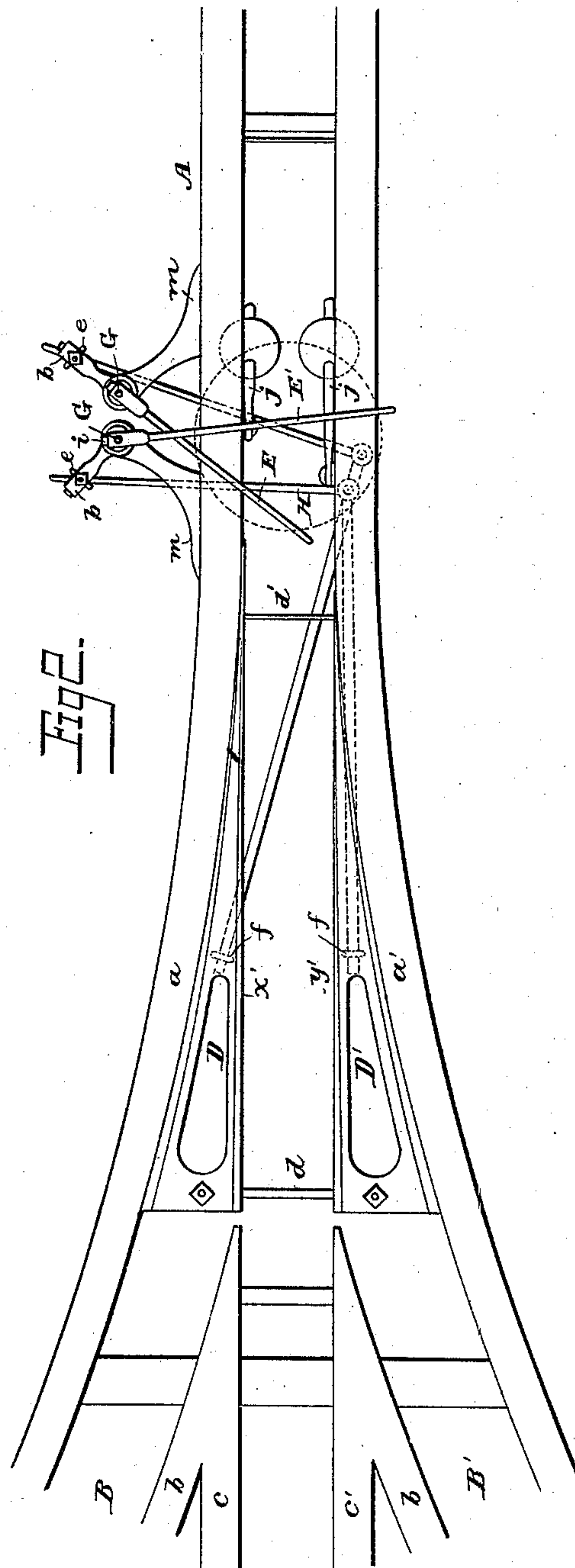
SWITCH FOR STORE SERVICE APPARATUS.

No. 378,511.

Patented Feb. 28, 1888.



Attests:
John G. Hinkley.
R. E. Farnham.



Inventor:
Henry L. Lovejoy
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attys

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2 Sheets—Sheet 2.

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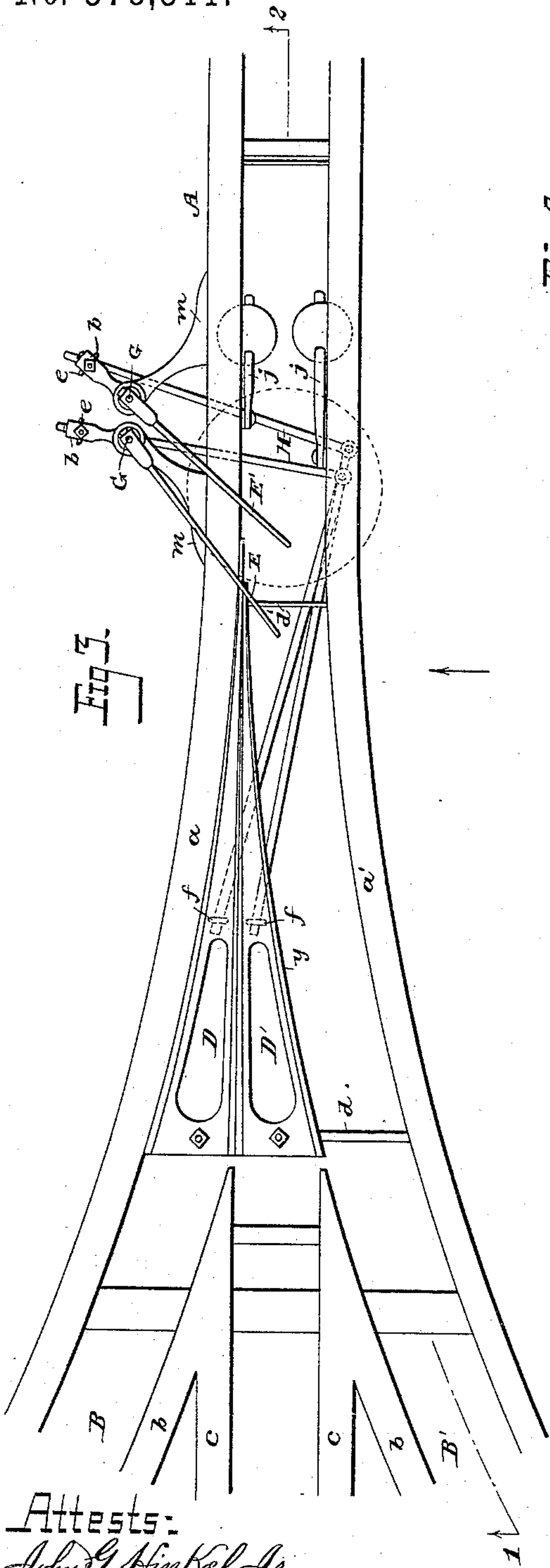
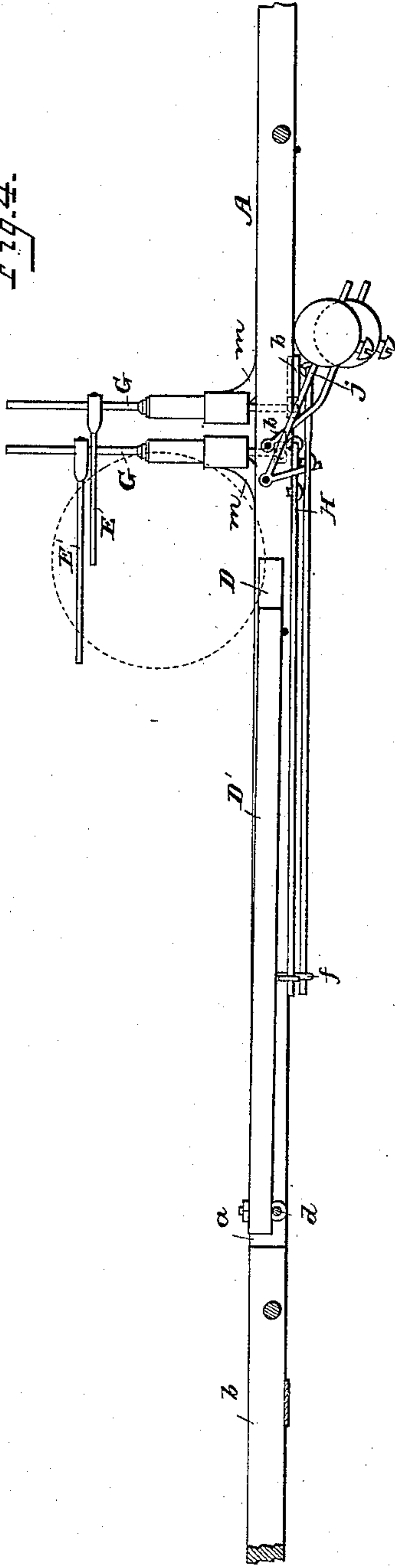


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY L. LOVEJOY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE
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SWITCH FOR STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 378,511, dated February 28, 1888.

Application filed May 19, 1885. Serial No. 166,065. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. LOVEJOY, a subject of the Queen of Great Britain, and now residing at Lowell, in the county of Middlesex and State of Massachusetts, United States of America, have invented certain new and useful Improvements in Switches for Store-Service Apparatus, of which the following is a specification.

My invention relates to that class of store-service apparatus in which carriers are graduated so as to pass to different branches and stations; and my invention consists in a peculiar switch device, fully set forth hereinafter, whereby the carriers may be directed automatically from the main line to two or more branch lines.

In the drawings, Figure 1 is a plan view of the junction of the main line and the two branches of a store service railway, illustrating my improved switch device. Figs. 2 and 3 are plans showing the parts in different positions. Fig. 4 is a longitudinal section on the line 1 2, Fig. 3.

A represents the main track, the rails a a' of which branch outward and with parallel rails b b' form the two branch tracks B B' upon opposite sides of a continuation of the main track formed by rails c c' , this arrangement of rails forming a junction of the branch tracks B B' with the main track A.

In the class of store-service apparatus represented in the drawings hollow spheres or carriers of different sizes are employed for conducting the money or small parcels between the main desk and counters, and these spheres are graduated so as to work automatically upon movable switch tongues D D', and cause such an adjustment of the latter as will direct each sphere to the track, which will conduct it to the counter from which it was sent. Each of the tongues D D' is capable of an adjustment independently of the other, and the same are so constructed that when both are close together adjacent to the rail a' the tongue D will form a continuation of the branch B, to which carriers will pass from the main track, the curved edge x of the tongue D being parallel with the edge of the rail a , as shown in Fig. 1. When the tongue D is car-

ried against the rail a , as shown in Fig. 2, a straight edge, x' , of the tongue D will be parallel to a straight edge, y' , of the tongue D', and both edges will be in line with those of the main-track rails, along which the carriers will pass continuously. When the tongues D D' are both carried toward the rail a , as shown in Fig. 3, a curved edge, y , of the tongue D' will be parallel to the edge of the rail a' , and the carriers will be directed from the main line to the branch D'. It will thus be seen that the independent tongues D D', each having a curved and a straight edge, may be so adjusted by being brought together at either side of the junction, or by being separated toward opposite sides, as to constitute continuations of the main or either of the branch tracks, and that whatever may be the position of either of the tongues it has a solid bearing against one of the tracks or against the other tongue of such a character that the weight of the carrier tends to maintain it in position rather than displace it.

It will be apparent that the forms of the tongues will depend to a certain extent upon the arrangement of the ways at the junction, and that different means may be employed for throwing the tongues to the different positions shown in the drawings.

One means which I have found to be practically operative consists in providing the switch with parts arranged in position to be struck by the carriers and combined with connections whereby the tongues are moved upon the movement of the said parts.

In the drawings I have shown two arms, E E', the arm E being connected to operate the tongue D and the arm E' being connected to operate the tongue D'.

Connections between the arms and the tongue, whereby the latter are adjusted on the movement of arms, will occur to any skilled mechanic. Those which I have shown consist of a shaft, G, supporting each arm, an arm, b , extending from the shaft, a crank-lever, H, pivoted to some stationary portion of the structure and connected to the arm b and to one of the tongues by a sliding connection. In the construction shown one limb of the lever H extends through an eye, e , on the arm b , and

the other limb extends through an eye, *f*, at the under side of the tongue, and a weighted rod, *j*, pivoted to one of the tracks, bears against each of the limbs connected with the arms *b*, and tends to maintain the parts in the position shown in Fig. 1.

Each shaft *G* is supported by and turns in a bracket, *m*, attached to one of the rails, and each of the arms *E E'* is adjustable upon its shaft *G*, and may be secured in any position to which it is adjusted by means of a set-screw, *i*.

The arm *E* is set at such a height that the smallest carrier will pass along the track without touching the said arm, and therefore will run onto the branch track *B*, the parts remaining in the position shown in Fig. 1; but the said arm is not so high but that the next largest carrier will strike it, and, by turning it to the position shown in Fig. 2, will carry the tongue *D* to the rail *a*, so that the carrier will pass along the line of the main track, the weight of the carrier forcing the tongue against the rail and upon cross-bars *d d'*, upon which the tongue bears, so as to hold it in position until the carrier passes onto the rails *c c'*, after which the pressure of the weighted arm *j* will restore the tongue *D* to the position shown in Fig. 1.

The arm *E'* is set at such a height as to be struck only by the largest carrier, which therefore makes contact with both the arms *E* and *E'*, thereby first moving the tongue *D* to the position shown in Fig. 2 and then carrying the tongue *D'* to the position shown in Fig. 3, when the carrier will move onto the branch *B'*, the tongues being restored to the position shown in Fig. 1 as the carrier passes onto the rail *b'*.

It will be obvious that springs may be substituted for the weighted arm *j*, and that the arms *E E'* may be arranged in any suitable position adjacent to the track, so as to be struck by the carrier.

In order to properly guide the tongues *D D'*, each is provided with an eye, *n*, at the rear end, through which eye the rod *d* passes, the front end resting and moving freely upon the rod *d'*.

I do not confine myself to the construction of track and carriers illustrated in the drawings, as it will be evident that my improved switch device may be used with the different forms of tracks and carriers employed in connection with store-service apparatus.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, with the main track and two branch tracks of a store-service apparatus, of two bodily-sliding switch-tongues, each with side edges constructed to form continuations of the main track and of each branch track, according to the positions of said tongues, substantially as set forth.

2. The combination of the main track and

two branch tracks and two independent switch-tongues, each of the latter adapted to be moved throughout its length toward either side of the main track, and having edges *y y' x x'*, that may be brought in line with the main and branch rails, substantially as described.

3. The combination of the main track and two branch tracks, two independent switch-tongues, each adapted to be carried bodily toward either side of the main track, and arms extending adjacent to the main track adapted to be operated by the graduated carriers thereon and each connected to one of the switch-tongues, substantially as described.

4. The combination of the two sliding switch-tongues, each adapted to be carried bodily to either side of the main track, two arms arranged in a position to be struck by the graduated carriers, and connections between each arm and one of the tongues, substantially as described.

5. The combination, with the independent bodily-sliding tongues, each having bearings on each edge, of arms arranged in different positions with respect to the main track, and connections between each arm and corresponding tongue, whereby some of the carriers are caused to strike one of the arms to adjust one of the tongues and others to strike both of the arms to adjust both of the tongues, substantially as described.

6. The combination, with the main and two branch tracks, of independent tongues, both capable of sliding laterally bodily between the rails and the main track, and a vertical shaft provided with two arms, one arranged to be struck by the carriers and the other connected by a lever with one of the tongues, and a weight tending to maintain each tongue in its normal position, substantially as described.

7. The combination of the bodily-sliding tongues, crank-levers, each connected to one of the tongues, vertical shafts, each provided with an arm connected to one of the levers and with an arm arranged to be struck by the carriers, and weights acting to restore the tongues to their normal positions after adjustment by a carrier, substantially as described.

8. The combination of the main track, two branch tracks, two independent tongues having bearing-edges *x x' y y'* and arms, and connections between the arms and the tongues, whereby the latter are adjusted by contact of the carriers with the arms, and restoring devices whereby each tongue is restored to its normal position after the passage of the carrier, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY L. LOVEJOY.

Witnesses:

ISAAC FITTS,

AUGUSTIN T. DAVIS.