

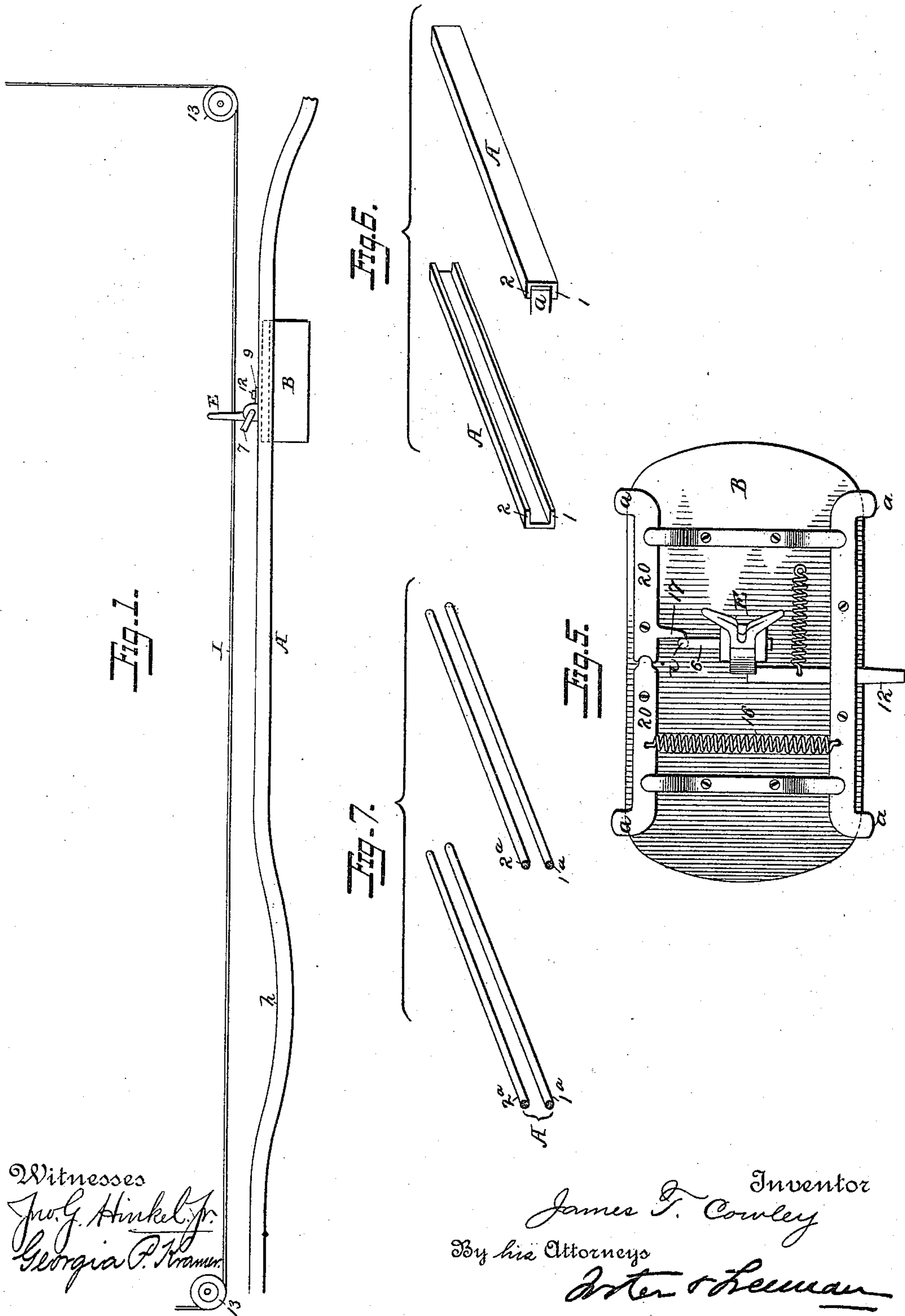
(No Model.)

3 Sheets—Sheet 1.

J. T. COWLEY.  
STORE SERVICE APPARATUS.

No. 440,765.

Patented Nov. 18, 1890.



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(No Model.)

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Fig. 2.

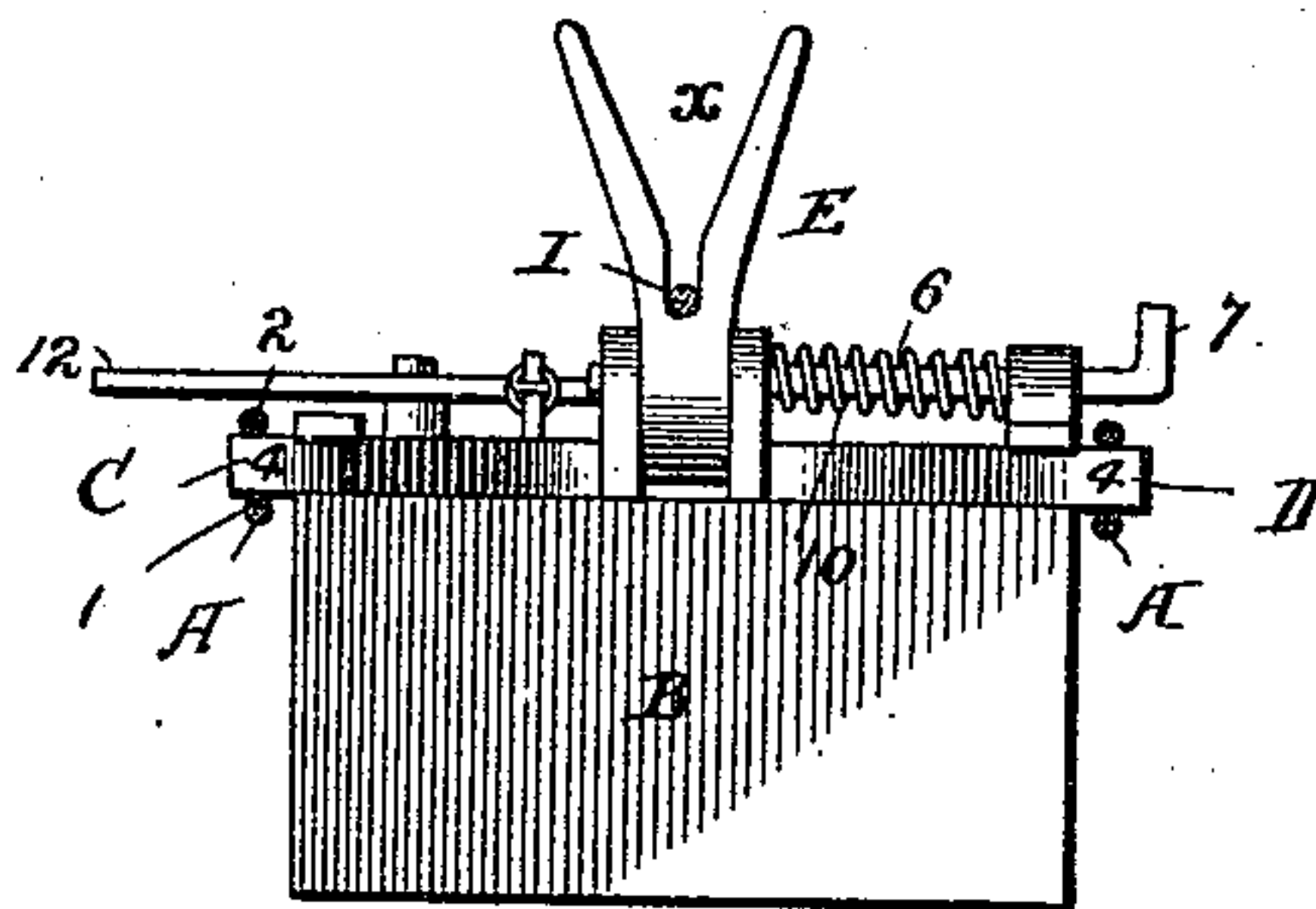


Fig. 3.

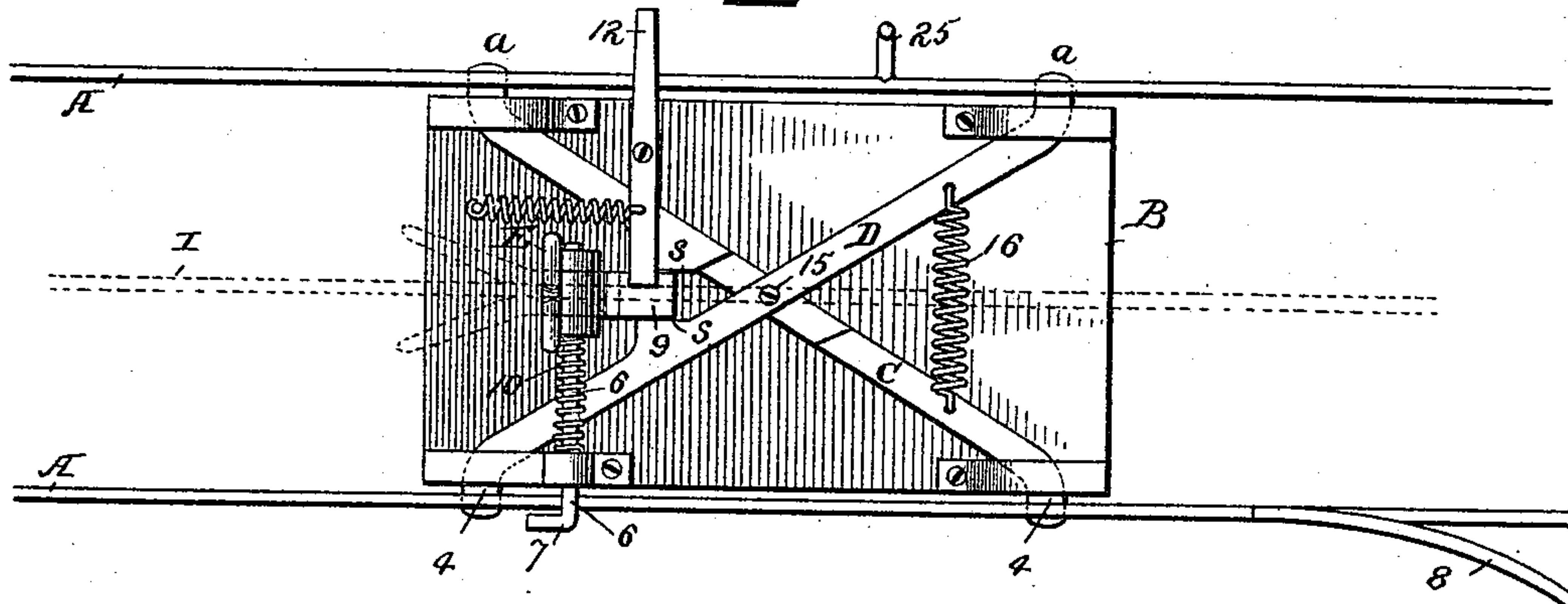
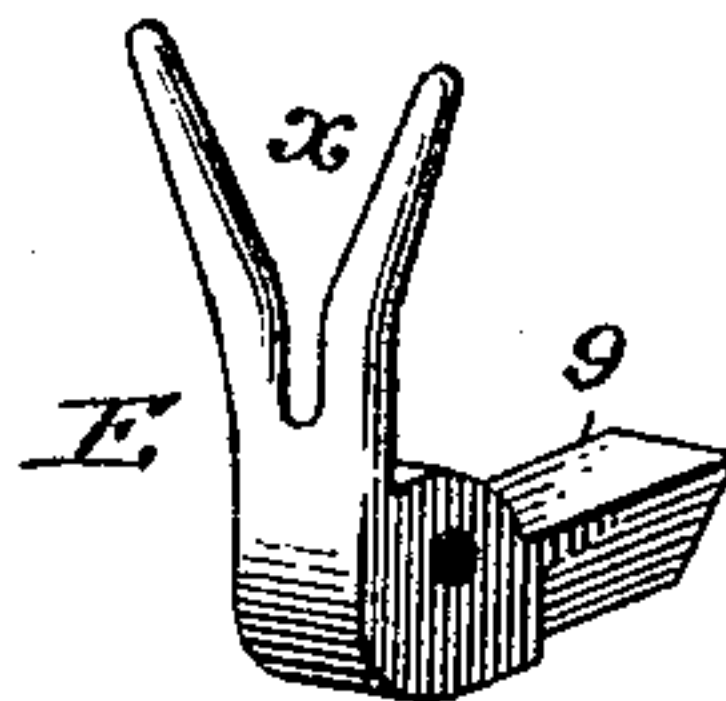


Fig. 4.



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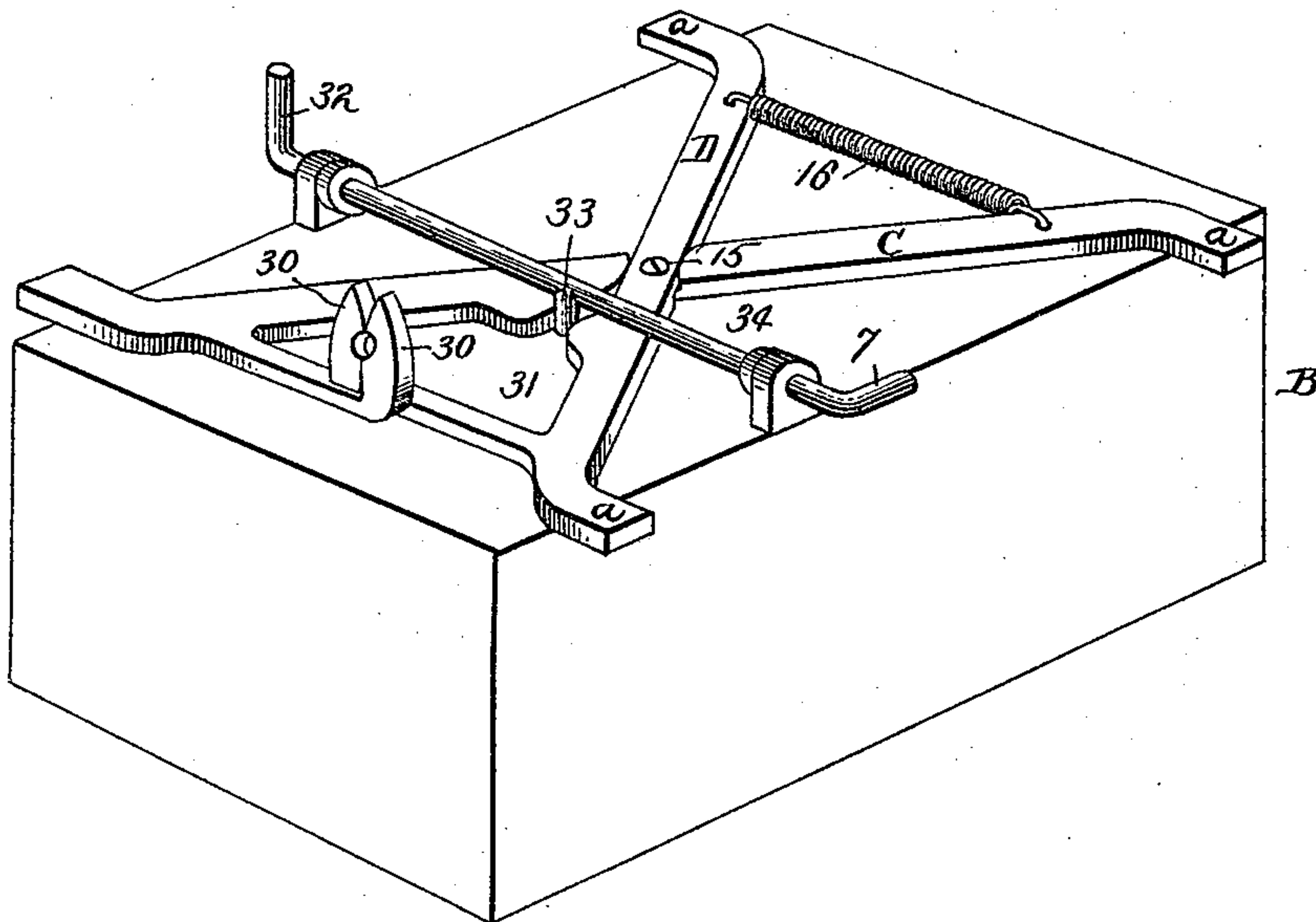
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*Fig. B.*



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# UNITED STATES PATENT OFFICE.

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## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 440,765, dated November 18, 1890.

Application filed November 23, 1889. Serial No. 331,355. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES T. COWLEY, a citizen of the United States, residing at Lowell, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Store-Service Apparatus, fully set forth in the following description and represented in the accompanying drawings.

Heretofore in that class of store-service apparatus in which the carriers have been propelled by traveling cords or cables the ways upon which the carriers are supported have generally consisted of two parallel bars supporting the carriers and from which they could readily be lifted vertically at any point, thereby rendering it possible, in case the connection between the carrier and the cable is loosened, for the carrier to leave the track with disastrous results, while the carriers will not remain in place if the rails are unduly inclined, twisted, or inverted.

In order to overcome this objection, my invention consists in constructing each rail or track support in such manner as to provide two longitudinal members—one above the other—adapted to two lateral bearings upon and constituting the supports for the carriers, which carriers therefore are free to travel upon the track, but cannot move vertically, and will remain in position upon the track whether connected to the cable or not and whatever may be the position of the track.

My invention further consists in constructing the carriers to facilitate their application to and removal from the way.

In the accompanying drawings, Figure 1 is a side elevation of sufficient of a store-service apparatus to illustrate my invention. Fig. 2 is an end view of one of the carriers. Fig. 3 is a plan of one of the carriers. Fig. 4 is a perspective view of the cable-catch detached. Fig. 5 is a plan showing a modification of the carrier. Figs. 6 and 7 are views illustrating the track-rail and modifications thereof. Fig. 8 is a perspective view showing modification of the grip and movable bearing-operating devices.

The track A may be constructed in different ways, so as to provide the bearing member, upon which the projections of the carriers

rest, and the opposite guard member. Thus in Figs. 1 and 6 each track is shown as consisting of a U-shaped strip A, one flange or bearing 1 of which constitutes the bearing or support for the bearing or projection *a*, extending from the carrier, while the other parallel flange 2 serves as a guard. In the construction shown in Fig. 7 the two members of each rail A consist of two parallel rods, 1<sup>a</sup> being the bearing and 2<sup>a</sup> the guard.

The carriers B are provided with the projections *a* at the sides or otherwise arranged to be opposite the faces of the members of the rails and constituting the sole supports for the carriers on the way, and in order to apply the carriers they may be inserted and withdrawn at terminal points of the track, either the main track or branches; but I prefer, in order to employ continuous tracks and to enable me to apply the carriers at any desired points, to provide each carrier with side projections *a*, and with means whereby the projections may be retracted to permit the carrier to be placed between the rails and then be thrown out into position between the members of the rails.

Different modes of constructing the carriers with movable side projections are illustrated in the drawings. In Figs. 1 to 3 the said projections *a a* are the ends of cross-bars C D, centrally pivoted to one face (as the top) of the carrier, and swinging upon the pivot 15. A spring 16 or any suitable retracting device serves to retract the cross-bars, and any suitable locking devices may be employed for holding them in place after they have been moved to project the ends beyond the sides of the carrier. I prefer to make use of the cable-grip clutch or catch device for this purpose. Thus in the construction shown in Figs. 1 to 7 of the drawings the cable-catch device is an arm E, having a V-shaped notch *x* to receive the cable I, and secured to a rock-shaft 6, turning in suitable bearings upon the carrier and provided with a terminal arm 7, which when turned downward will engage one of the side rails 8 of a branch track, or siding, or turnout, to deflect the carrier from the main way. This I do not here claim, as it constitutes the sub-



ject of a separate application for Letters Patent, Serial No. 271,015, April 18, 1888.

Upon the rock-shaft 6, or projecting from the lower end of the arm E, as shown, is a toe 9, which, when the arm E is turned to a vertical position, passes between two shoulders or bearings *s s* of the cross-bars C D, separates the latter, and holds them in their separate positions. The rock-shaft 6 is encircled by a spring 10, which tends to turn it to throw down the arm E to a horizontal position, (shown in dotted lines, Fig. 3,) and a detent-lever 12, pivoted to the carrier, extends over the toe 9 and tends to hold the catch in position to engage with the cable I, which is conducted by suitable guide-rolls 13 in a line parallel to the track in position to engage with the catch when the latter is turned upward.

In order to disconnect the carrier from the cable at the point where the carrier is to leave the main track, a stop or tripper in the form of a lug 25, adjacent to the track, is arranged to make contact with the end of the detent 12 and swing the latter away from the catch, when it will turn down away from the cable and disconnect the carrier therefrom, and the carrier will then move only by the momentum it has acquired.

Where no side tracks or turnouts are used, the catch E may be connected immovably to the carrier, and in order to apply the carrier to the way and facilitate its connection with the moving cord at the point where the carriers are placed upon the track, I deflect the track away from the cable, forming a depression *h*, Fig. 1, which permits the carrier to be introduced between the cable and track, placed upon the track, and then pushed up the inclined portion of the track until its cord-engaging device is brought into contact with the cord.

In the construction shown in Fig. 5 a different arrangement is shown for withdrawing the projections *a*. In this case each movable projection is part of a pivoted arm 20, a projection on the inner end of one arm entering a recess in the other, so that both will swing together to an extent sufficient to throw the projections or bearings *a* beyond or draw them inside the side face of the carrier.

A spring 16 tends to draw back the arms, and a toe 17 on one makes contact with a finger *i* on the shaft 6 of the catch E, so that when the latter is elevated the levers 20 are held with the projections *a* extending beyond the side of the carrier. When the catch moves down, the finger *i* is carried away from the toe 17, and the spring 16 acts to swing the levers. In this case the projections *a* at the other side of the carrier may be immovable.

In some cases the catch may be operated by the devices that operate the movable bearings *a*. Thus, as shown in Fig. 8, each cross-bar C and D is provided with a jaw, the said jaws being carried by overlapping

arms 31, connected with the bars, and being constructed to receive between them the cable when the arms are drawn together to retract the projections or bearings *a*, and to grip the cable when the arms are thrown out.

The detent for holding the clutch in position to grip the cable and the projections or bearings *a* in their outward position may be constructed, as shown in Fig. 9, in the form of a rock-shaft 34, having an arm 32 to make contact with the stop 25, and an arm or toe 33, that when turned down between the cross-bars C D separates the latter to throw out the projections *a*. The shaft 34 may carry the arm 7, and, if desired, one of the jaws 30 may be stationary.

I do not here claim the notched swinging catch nor the movable arm 7 to engage a side-switch rail, as these constitute the subject of a separate application for Letters Patent, Serial No. 271,015, filed April 19, 1888.

I do not limit myself to the precise construction of the parts described, as it will be evident that the catch device and the movable projecting portions of the carriers and the means for moving them may be varied without departing from the main features of my invention, and that, when desired, the carrier may be provided with immovable projections in the form of lateral pins or ribs, in which case the upper bearings or guards of the tracks must be cut away at points where the carriers are applied and removed.

What I claim is—

1. The combination, in a store-service apparatus or track, each rail of which has two parallel members, of carriers provided with spring-controlled movable side projections constituting bearings extending between the two rail members and supporting the carrier, substantially as described.

2. The combination, with the rails of a store-service track, of carriers provided with lateral projection constituting the supports for the carrier, and with means for retracting said projections, and means for locking them after they are projected beyond the sides of the carrier, substantially as set forth.

3. A carrier provided with movable arms, projections thereon, and with a cable-catch device, and intermediate devices between the catch and arms for throwing out said arms when the catch device is put into position to engage the cable, substantially as set forth.

4. The combination, in a carrier, of movable arms terminating in bearings for supporting the carrier on the track, a movable cable-catch, a detent for holding it in one position, and devices between the catch and arms whereby to throw out and in the arms as the catch is moved, substantially as set forth.

5. A carrier provided with a cable clutch or catch and with a projecting arm arranged to strike a stop and constituting a movable

bearing for the catch to release the latter  
and to disconnect it from the cable when the  
arm strikes the stop, and with movable pro-  
jections arranged to support the carrier upon  
5 the way, and connections between the same  
and said arm whereby the movement of the  
latter also operates said projections, substan-  
tially as set forth.

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

JAMES T. COWLEY.

Witnesses:

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OLIVER A. LIBBY.