

(No Model.)

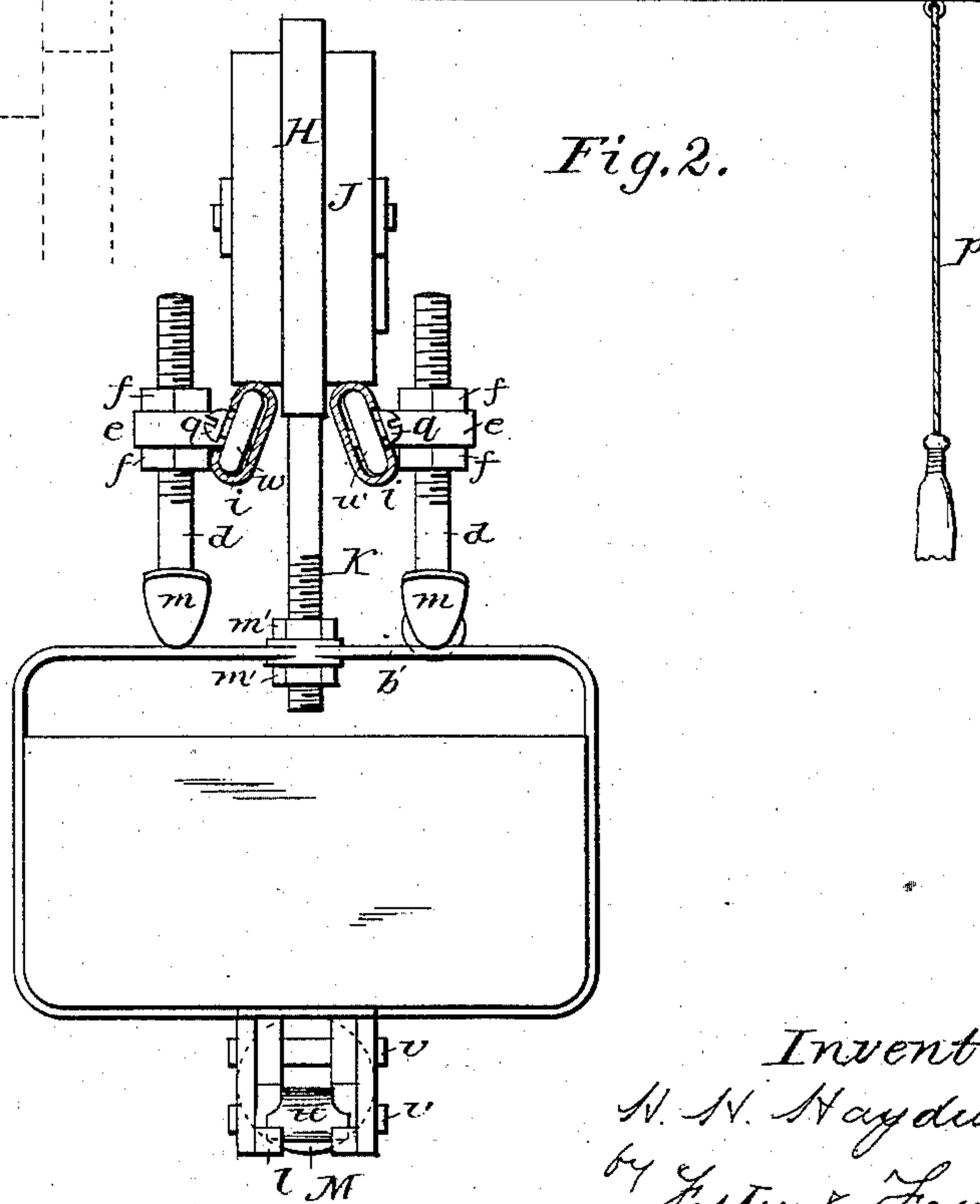
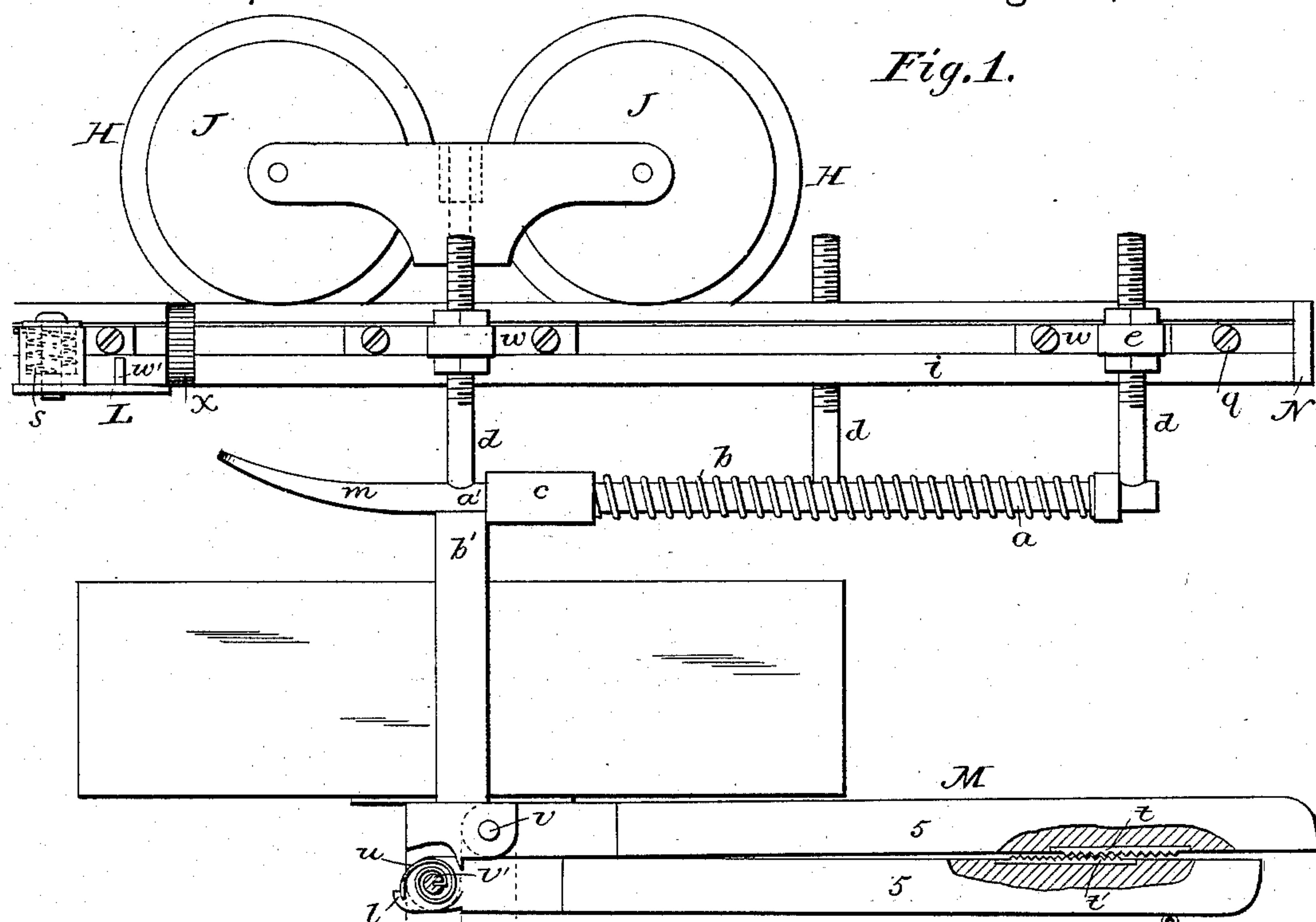
2 Sheets—Sheet 1.

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## STORE SERVICE APPARATUS.

No. 283,104.

Patented Aug. 14, 1883.



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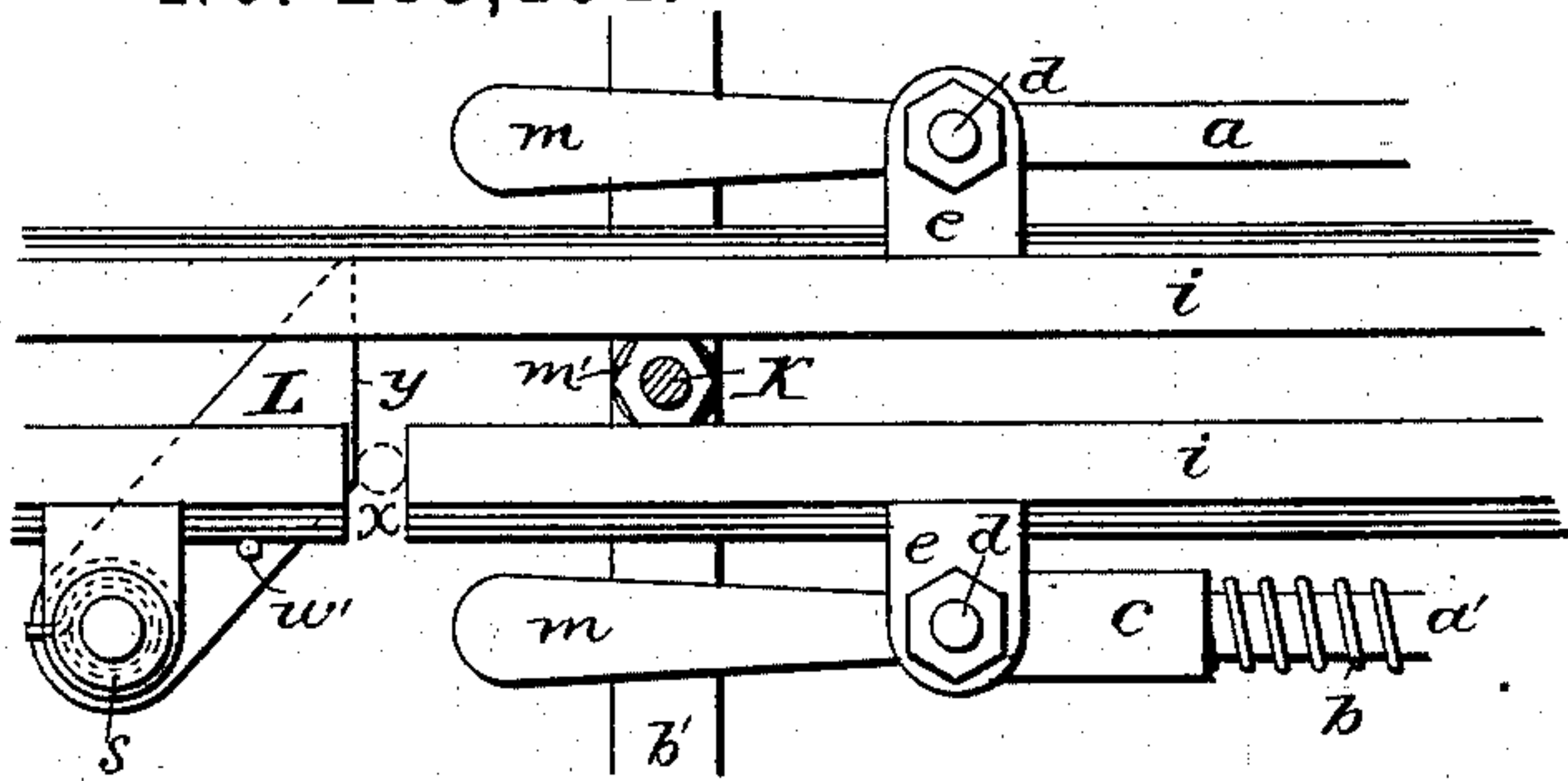


Fig. 3.

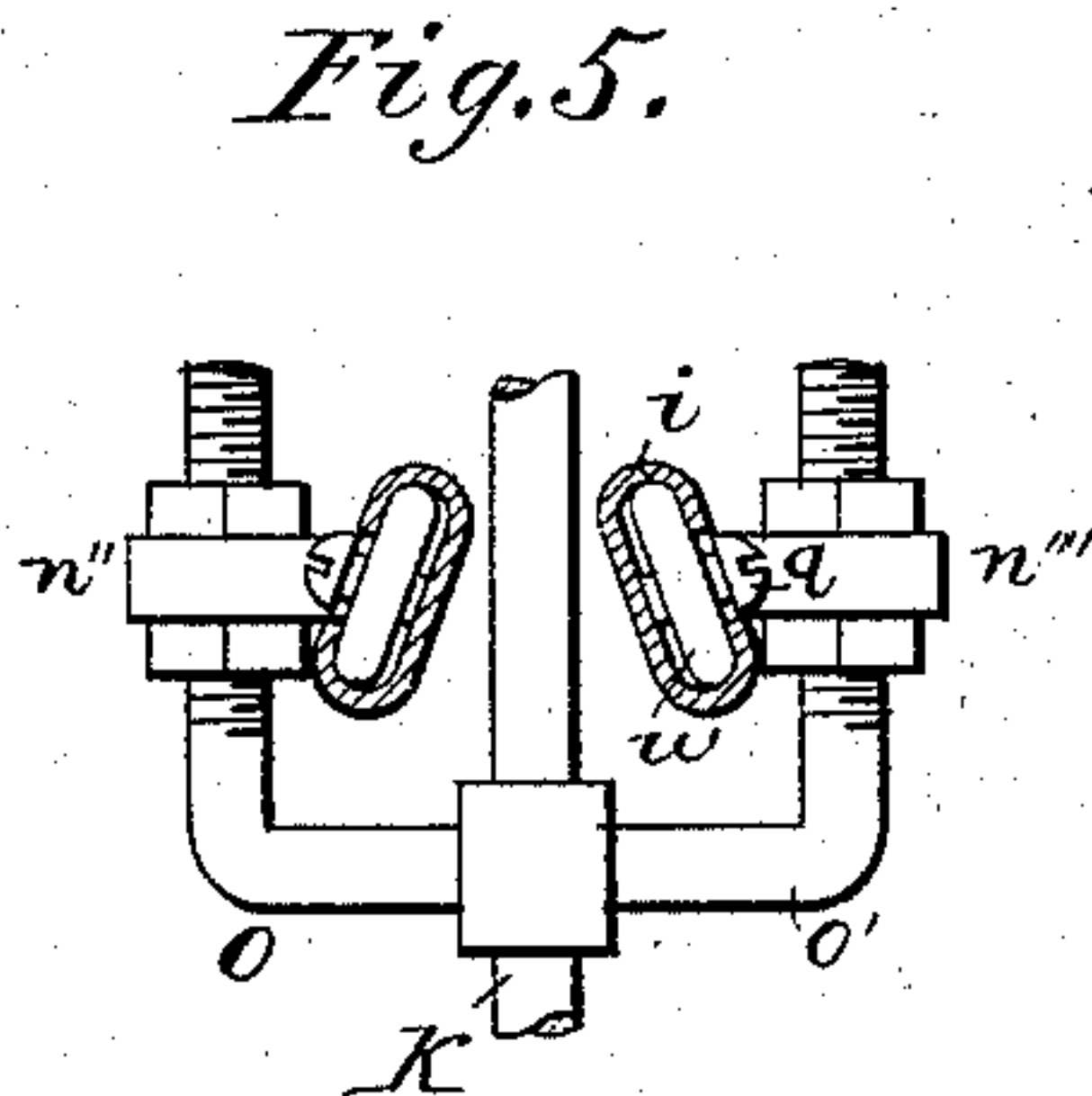


Fig. 5.

Fig. 4.

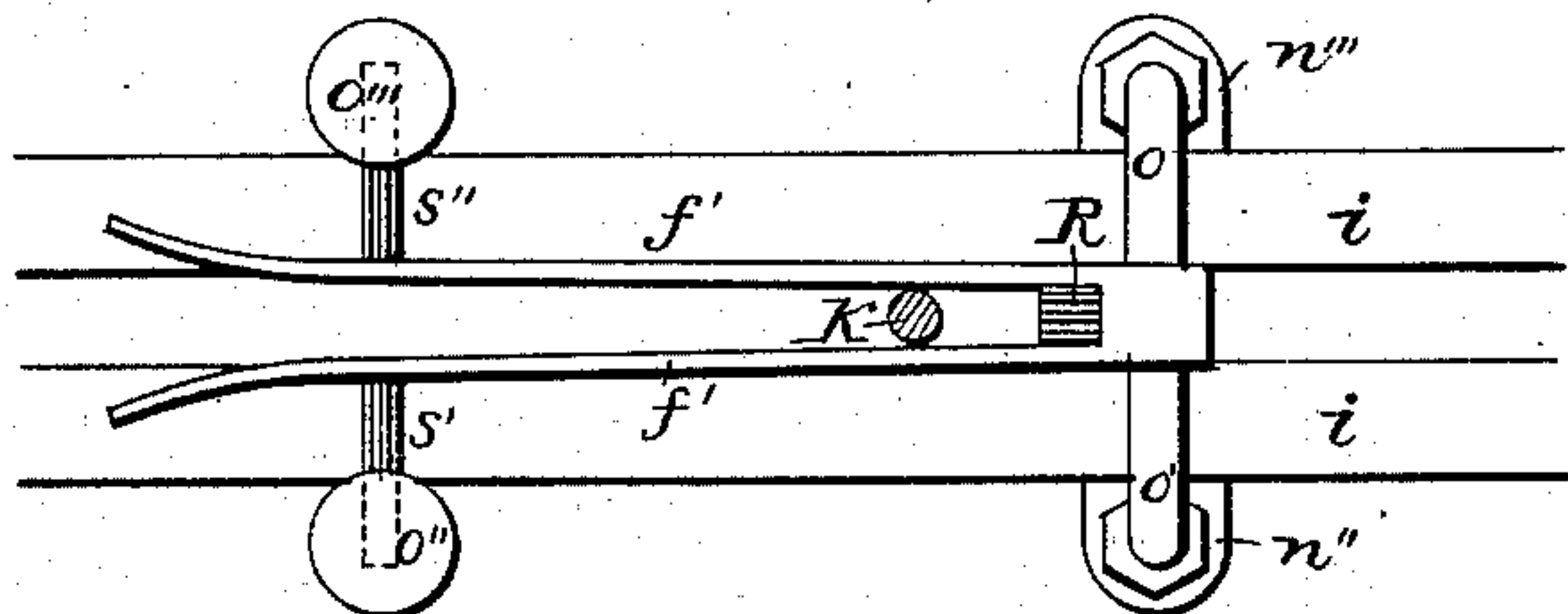


Fig. 6.

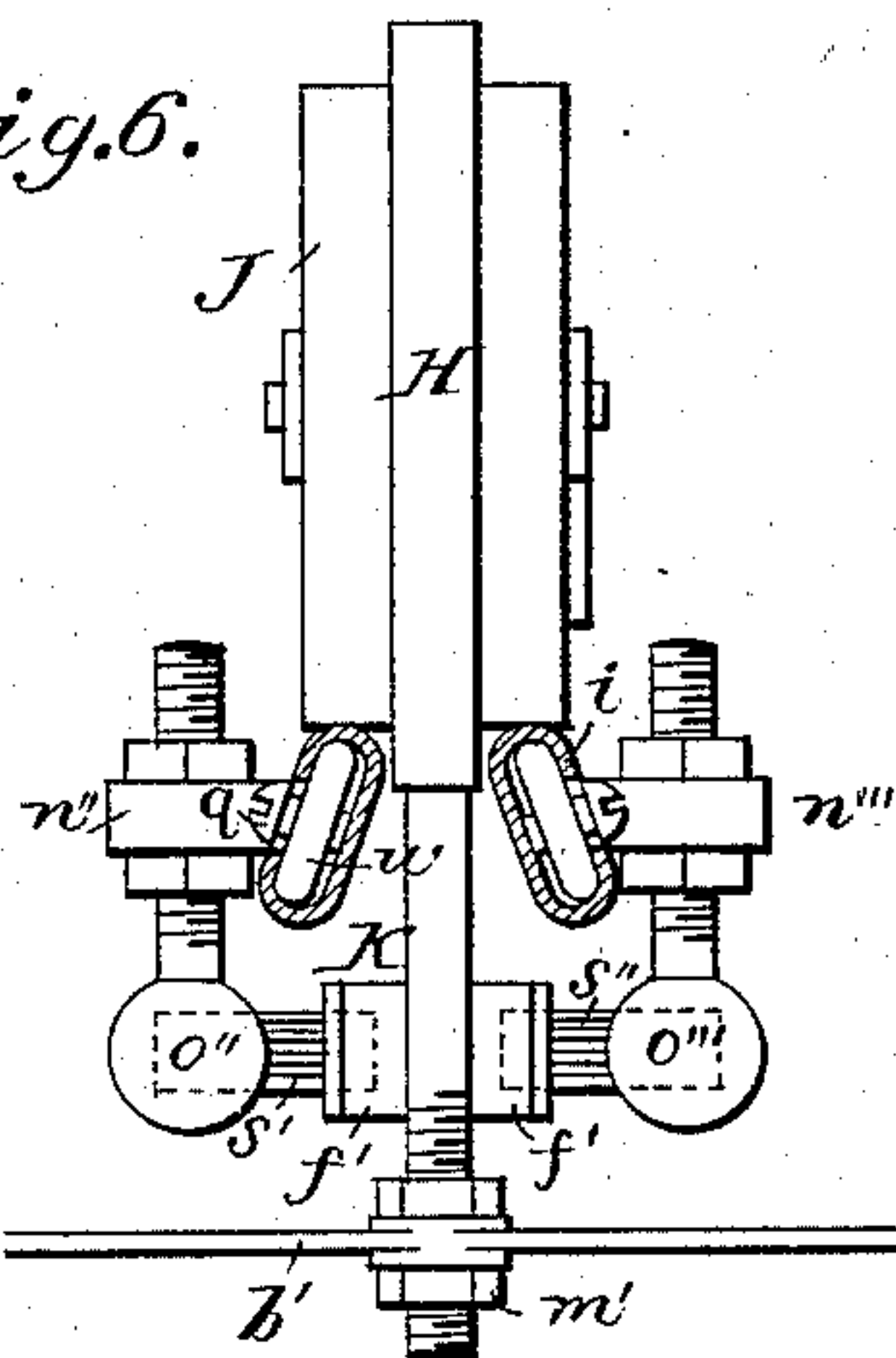


Fig. 7.

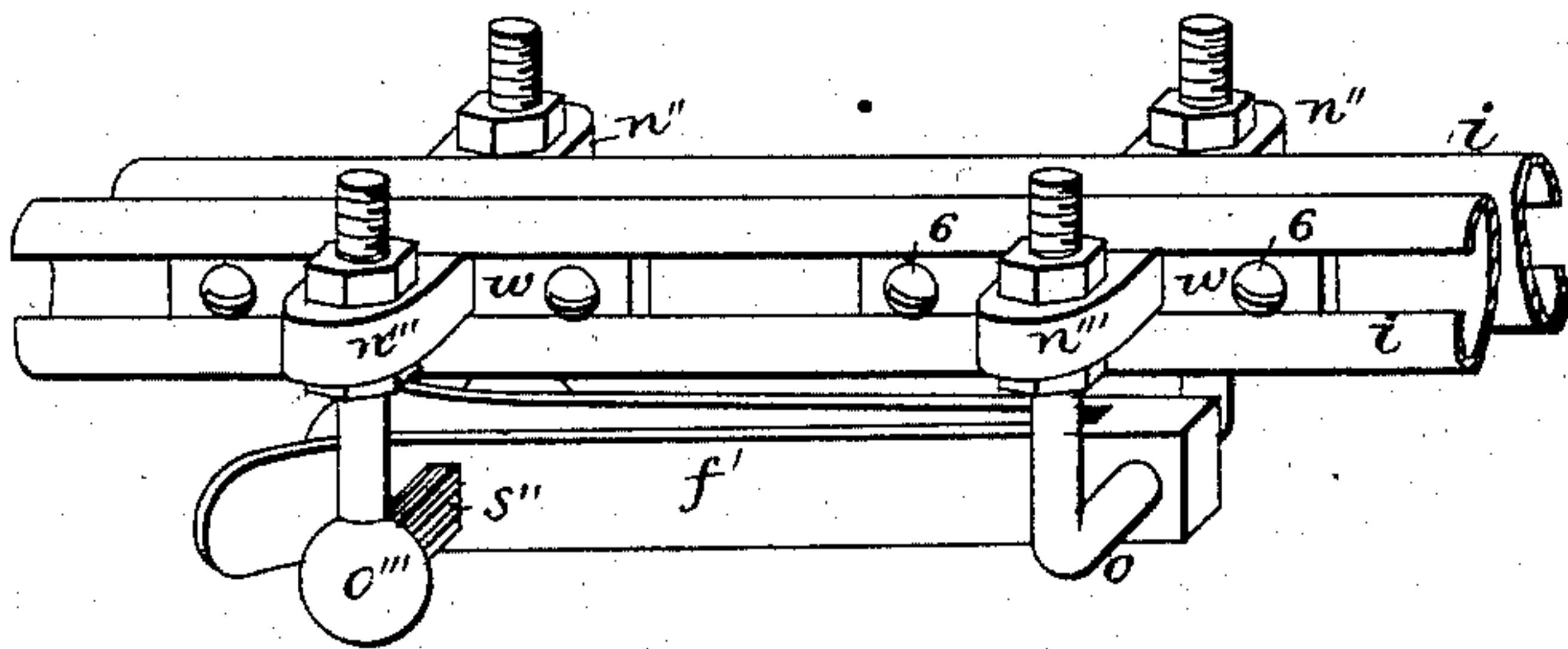
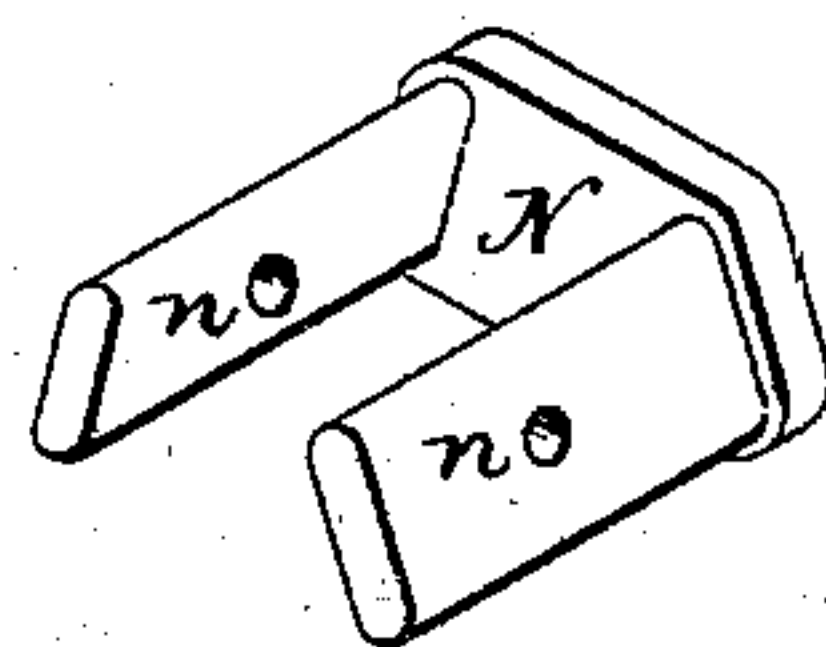


Fig. 8.



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# UNITED STATES PATENT OFFICE.

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## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 283,104, dated August 14, 1883.

Application filed July 14, 1883. (No model.) Patented in Germany July 3, 1883, and in Belgium July 3, 1883.

*To all whom it may concern:*

Be it known that I, HARRIS H. HAYDEN, a citizen of the United States, and resident of the city, county, and State of New York, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention relates to that class of apparatus in which carriers traverse upon ways between the counters and main desk of a store; and it consists in certain details of construction having for their object to secure increased efficiency in the operation and manipulation of the various parts, as fully described herein-  
after.

In the drawings, Figure 1 is a side elevation, showing part of the way, a stop device, and carrier. Fig. 2 is a cross-section of the way, showing the parts illustrated in Fig. 1. Fig. 3 is a plan part of the way and detaching device. Fig. 4 is an inverted plan of a terminal stop device. Fig. 5 is a cross-section looking in the direction of the arrow 1, Fig. 4. Fig. 6 is a section looking in the direction of the arrow 2, Fig. 4. Fig. 7 is a perspective view of the stop device shown in Fig. 4. Fig. 8 is a perspective view of the end bracket.

In store-service apparatus where a double parallel way, as described in my Letters Patent No. 272,606, is used, most of the ordinary forms of stops adapted to arrest the motions of carriers upon single ways are defective, from the fact that the carriers will sometimes swing to one side, and thereby avoid contact with the arresting device, and because of the shock and noise resulting from the sudden contact of the cars with rigid or comparatively rigid stops. I avoid these objections, first, by arranging upon opposite sides of the way, at the point where the carrier is to be arrested, two bars, strips, or rods, *a a'*, and providing each carrier with a cross-piece, *b'*, which is brought below and into close contact with the rods, which thus effectually prevents the swinging of the carrier and absolutely secures the contact of the carrier with the arresting device. This arrangement may be employed in connection with various forms of ways and with different forms of arresting devices. The arrest of the carrier without sudden shock and noise is secured by providing one of the rods

*a'* with an encircling-spring, *b*, and with a sleeve, *c*, sliding upon said rod and bearing against the said spring, the forward end of the sleeve being struck by a projection or any portion of the frame of the carrier presented to it, so that the movement of the carrier upon the way gradually compresses the spring *b* until the resistance is sufficient to bring the carrier to a stop, the friction of the carrier-frame with the rod *a'* being, if desired, great enough to resist the expansive action of the spring, and prevent the latter from forcing the carrier violently backward from the stop device after its motion is arrested.

To prevent the ends *m* of the rods from being struck by the carrier-frame, the said ends are bent upward or inclined so as to deflect the portion of the carrier which is brought against the stop gradually to its position beneath the rod; or V-shaped fenders may be attached to the rods, so as to stand at an oblique angle partly across the way. In order that the rods may be adjusted so as to secure the operation of the parts with the utmost precision, they are provided with threaded arms or standards *d*, which pass upward through openings in lugs *e*, fastened to slides *w* in the flanged rails *i i* of the way, and carry nuts *f*, by which they are secured at any height to which they may be set. It will be understood that any other form of adjusting device adapted for the purpose may be employed.

With the way shown I may use hollow cylindrical carriers with central annular flanges, *H*; but I have illustrated carriers with wheels *J*, having such central flanges, *H*, which extend between the ways *i i*, and guide the carrier on the ways, and prevent friction between the ways and a stem, *K*, extending between the ways and serving to connect the body of the carrier and the receptacle. To properly adjust the frame of a receptacle so that it shall strike any stop at which it is desired to arrest the carrier, the stem *K* is threaded, and extended through the cross-bar *b'* of the frame, and is provided with nuts *m' m'*; or other appliances are used whereby the frame of the receptacle may be carried to or from the body of the car to any desired extent, and secured fixidly in its position after adjustment.

It is necessary in the class of apparatus de-



scribed to provide one of the rails with an opening,  $x$ , through which the stem  $K$  passes when the carrier is placed upon or removed from the track. To facilitate the withdrawal of the stem through the opening, I provide the way with a check-plate,  $L$ , extending beneath the rails and pivoted at the side of one of the latter, so as to normally occupy the position shown in Fig. 3, a coiled spring,  $s$ , tending to preserve this position, which, it will be noted, is with the straight edge  $y$  at a right angle to the line of the way. A carrier passing down the line readily swings the plates  $L$  as it passes, each in turn, and the coiled spring  $s$  causes each plate to return to position, a pin,  $w$ , preventing it from swinging back too far. When any carrier is arrested, all difficulty in finding the slot  $x$  to remove the carrier is avoided by the use of the check-plate, as when the attendant moves the carrier back, the edge  $y$  of the plate guides or deflects the stem through the opening readily and accurately.

Swinging plates adapted to contact with upright pins or yokes upon the carriers may be suspended over the track, to allow the carriers to pass down the track, but arrest them when pushed back, and guide them into the slot in a similar way as the plates below the rails.

To facilitate the placing of the carriers upon the track when the latter are too high to be easily reached, I provide the carrier with a pivoted handle,  $M$ , operated upon by a spring in such manner that it will normally occupy a horizontal position while the carrier is moving upon the ways, so as to avoid striking the heads of persons in the store, but may be drawn down by means of a cord,  $p$ , or otherwise, to a vertical position, when the carrier is to be removed from or placed upon the tracks. These handles may be solid and pivoted or hinged to the carriers; but an available construction for this purpose consists in making each handle of two parts,  $5$   $5$ , each pivoted to the receptacle, the pivotal points  $v$   $v'$  being one above the other, so that the handle may occupy a horizontal position with the two parts parallel to and in contact with each other, a coiled spring,  $u$ , bearing upon a lip,  $l$ , of the lower portion, and maintaining the parts in their position. Upon drawing upon the cord  $p$ , the pressure of the spring will be overcome, the handle will be brought to a vertical position, and when the two parts are grasped by the hand all sliding movement between them is prevented. For further security, teeth  $t$   $t'$  are set in each part, so that when the parts are together one cannot slide upon the other. Upon releasing the grasp, however, after placing the car upon the track, the spring will carry the handle to its horizontal position, as before.

Where the rails consist each of a metal plate with outturned-edge flanges, as shown, I secure them together at the ends and maintain their proper angular position, as well as make a neat finish, by means of a key-plate,  $N$ , pro-

vided with lugs  $n$   $n$ , adapted to fit into the ends of the rails and set at the angle in which the rails should be fixed, screws  $q$ , passing through the lugs and bearing against the rails, serving to secure the key-plate in its place.

In arresting the carriers at the main desk it is necessary to employ a stop which will act on all alike without reference to the length of the stems  $K$ . For this purpose I have employed stops pressing on the wheels from above, as shown in my Patent No. 241,008, and I also find the form shown in Figs. 4, 5, 6, and 7 very effective. This stop consists of a pair of metallic fingers,  $f'$   $f'$ , forming a **Y** or **U** shaped flaring opening, and grasping the carrier-stems, as shown in Figs. 4, 5, 6, and 7. These fingers are attached to the tracks by ears and slides  $n''$   $n'''$  and elbows  $o$   $o'$ , fastened thereto by nuts, and supporting the stop device. A pressure adapted to the speed of the carrier is insured by means of springs  $s'$   $s''$ , of rubber, (as shown,) wire, or other material, which are socketed in the lugs  $o''$   $o'''$ , and bear against the fingers  $f'$   $f'$ . These can be varied in length and strength, as desired, or the fingers  $f'$   $f'$  may be made of spring metal and bent in so as to press against the stem of the car without using the side springs,  $s'$   $s'$ , as shown; or a similar pair of fingers may be set above the rails, so as to inclose the carrier-frame or the wheels. If preferred, the inclosing-fingers may be lined with rubber or other adhesive substance, to increase the friction, or they may be made wholly of rubber, leather, felt, &c., suitably supported and attached to the rails. In any case it is desirable to have a buffer,  $R$ , of rubber or other material at the back end of the stop, to arrest the carrier quietly if the pressure of the fingers is not sufficient.

It will be seen that the slides or brackets  $n''$   $n'''$  fit within the flanges of the rails, so that they may be moved longitudinally to set the stop device in any desired position upon the way, screws  $6$   $6$  securing the stop after its adjustment. This feature of the invention may be used in connection with ways of any character, as rails, cables, wires, &c., and in connection with stop devices differently constructed from that shown, so that the stop may be adjusted to any desired position upon the way or changed in position and then secured until further adjustment is required.

In that class of apparatus in which each car moves upon a separate way back and forth between the terminal stations, there is a stop at each end so constructed, as described, or otherwise, as to both arrest and hold the carrier.

Without limiting myself to the precise construction of parts shown, and reserving for other applications for Letters Patent such features as are not specifically claimed, I claim—

1. The combination, with the way of a store-service apparatus and with the arresting device thereof, of rods or strips arranged on opposite sides of the way, substantially as and for the purpose set forth.

2. The combination, with the way, of rods



or strips arranged below and on opposite sides of the same, and adjusting devices for setting and securing them in their proper position, substantially as set forth.

5 3. The combination of the way, the rods *a* *a'*, and inclined extensions or fenders, for the purpose specified.

10 4. The combination, with the way, of a rod arranged parallel to the way, provided with a sliding sleeve and with a spring constituting a spring-bearing for the said sleeve, the parts being arranged to permit the sleeve to be struck by a portion of the carrier-frame, substantially as specified.

15 5. The combination of the way, the adjustable rods or strips *a* *a'*, and sleeve *c*, and spring *b*, upon the rods, substantially as set forth.

20 6. The combination of the way, stop device consisting of a sleeve sliding upon a rod in contact with a spring, and a carrier provided with a pendent stem and with a receptacle secured thereto, and means for adjusting vertically the portion that makes contact with the stop device, substantially as specified.

25 7. The combination, with the carrier, of a handle jointed thereto capable of being turned to a horizontal or vertical position, and a spring or weight whereby the handle is normally retained in its horizontal position, for the purpose set forth.

30 8. The combination of a carrier and handle, consisting of two parts separately pivoted to the carrier, capable of being turned to a horizontal and to a vertical position, and a spring tending to maintain the horizontal position of both parts, substantially as set forth.

35 9. The combination of a carrier and handle, consisting of two parts separately pivoted to the carrier, capable of being turned to a horizontal and to a vertical position, and a spring tending to maintain the horizontal position of both parts, and teeth upon the rails, substantially as set forth.

40 10. The combination of the carrier, pivoted handle, spring, and pendent cord, substantially as specified.

45 11. The combination, with the way, having two rails, one of which is slotted, of a plate or finger extending across the ways and supported to yield to the carriers moving in one direction, and to constitute a guide to direct

the carriers to the slot when said carriers are moved in the opposite direction, as set forth.

12. The combination, with the way consisting of two rails, one of which is slotted, of a plate pivoted to one of the rails adjacent to the slot, and a spring whereby the plate is normally maintained at almost right angles to the opening, as and for the purpose described. 55

13. The combination, with the rails *i i*, one of them having a slot, *x*, of the pivoted plate *L*, constructed to present the edge *y* at an angle to the rails, and a spring, *s*, substantially as set forth. 60

14. The combination of the rails, each consisting of a flanged plate, as set forth, and a key-plate, *N*, provided with lugs *n n*, arranged at different angles to the plate, and adapted to the ends of the rails, substantially as specified. 65

15. The combination, with the way, of a store-service apparatus, of a stop device supported upon said way, longitudinally adjustable in respect thereto, and devices for securing it after adjustment, substantially as set forth. 70

16. The combination, with the way of a store-service apparatus, of a stop device, consisting of one or more spring-fingers, arranged parallel to the way to insure increased frictional resistance upon some part of the carrier as it moves in contact with such finger or fingers, substantially as set forth. 75

17. The combination, with the friction finger or fingers of the stop device, of side springs and means for adjusting the latter, substantially as set forth. 80

18. The combination of a way, stop device, and appliances for adjusting the latter vertically, substantially as specified. 85

19. The combination, with the way of a store-service apparatus, of stops for arresting different carriers at different stations, and a terminal stop adapted to arrest any carrier brought into contact therewith, substantially as described. 90

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 95

HARRIS H. HAYDEN.

Witnesses:

WM. TRUSLOW,

WM. B. DE LACY.