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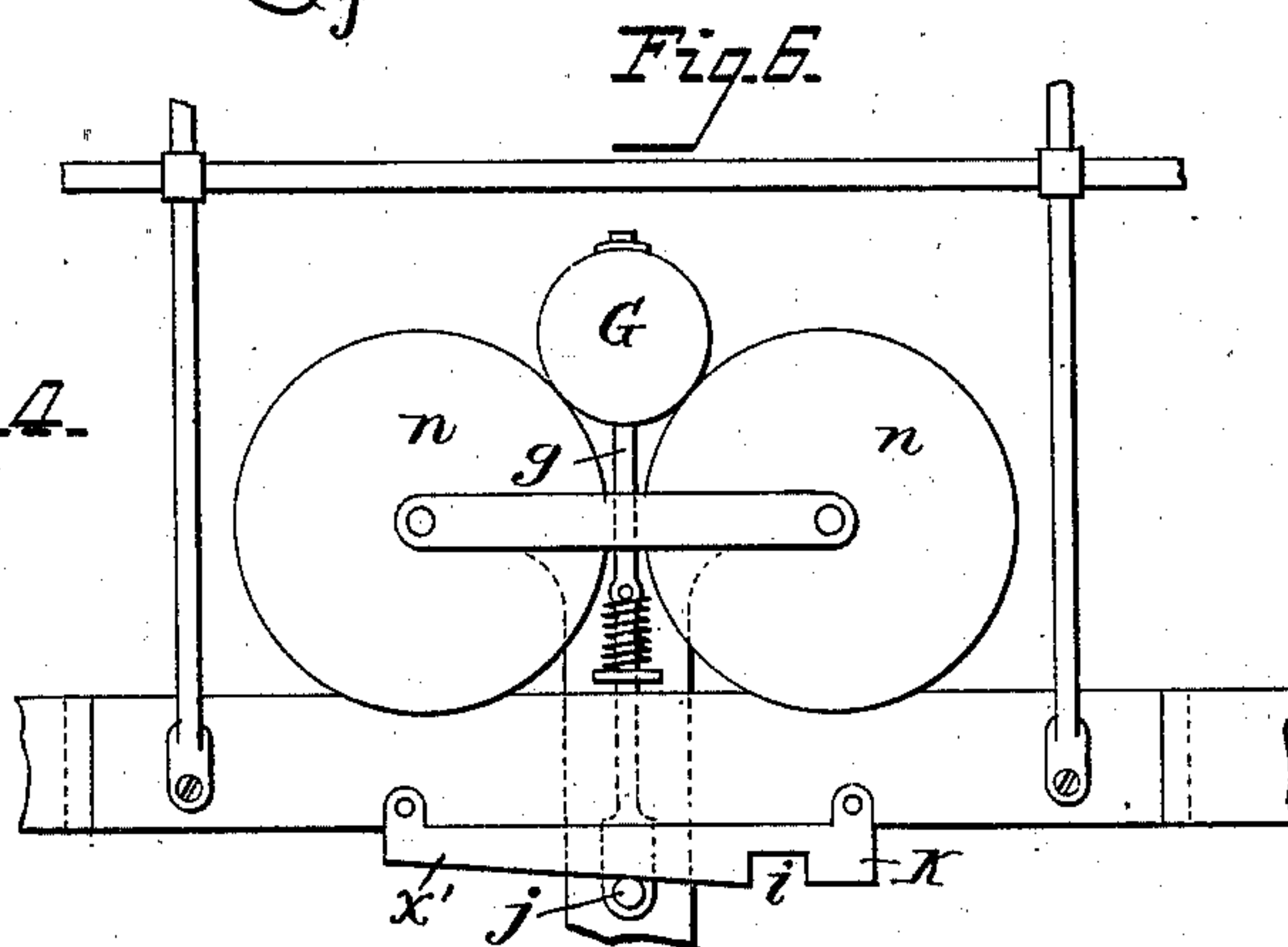
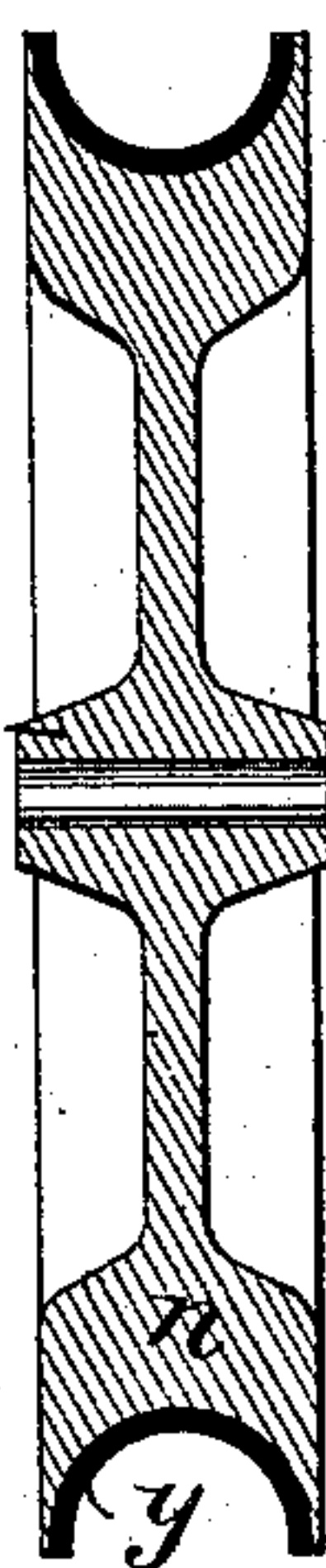
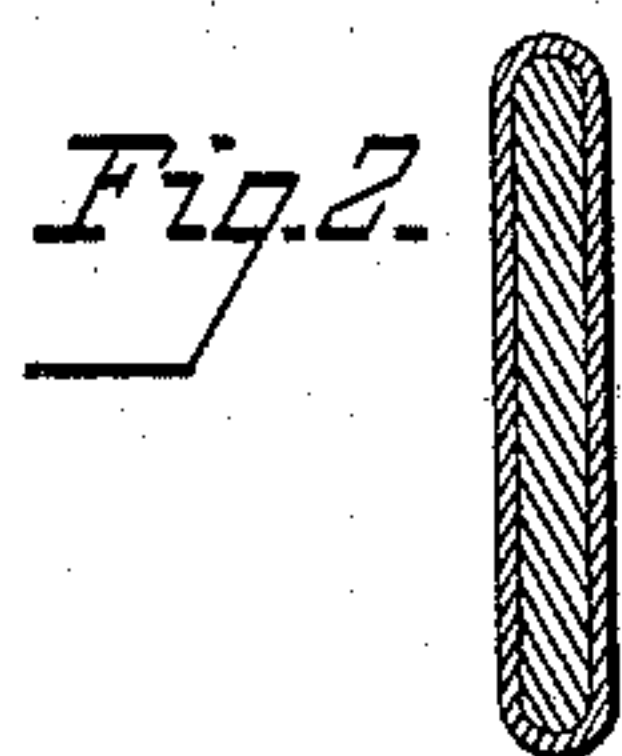
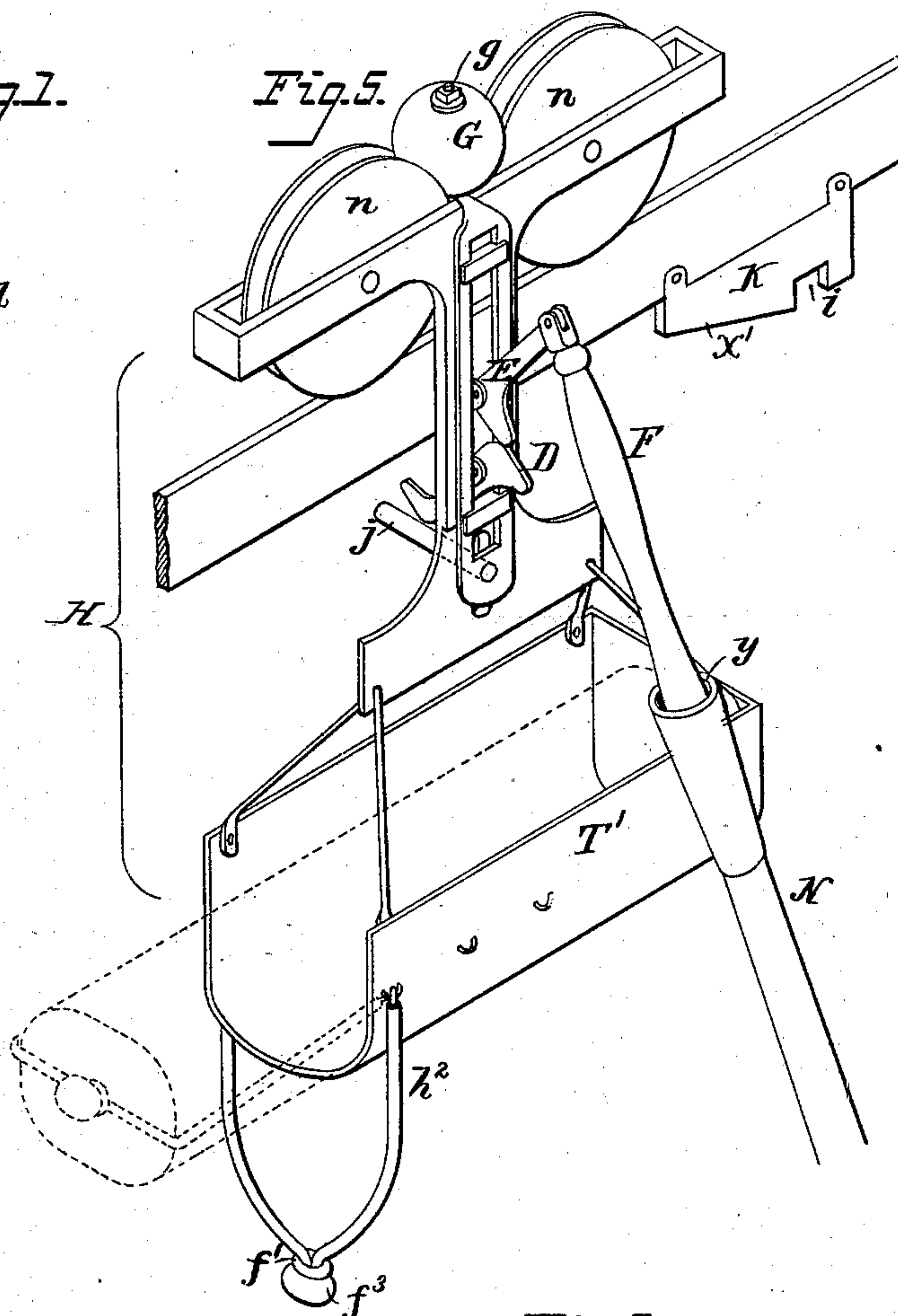
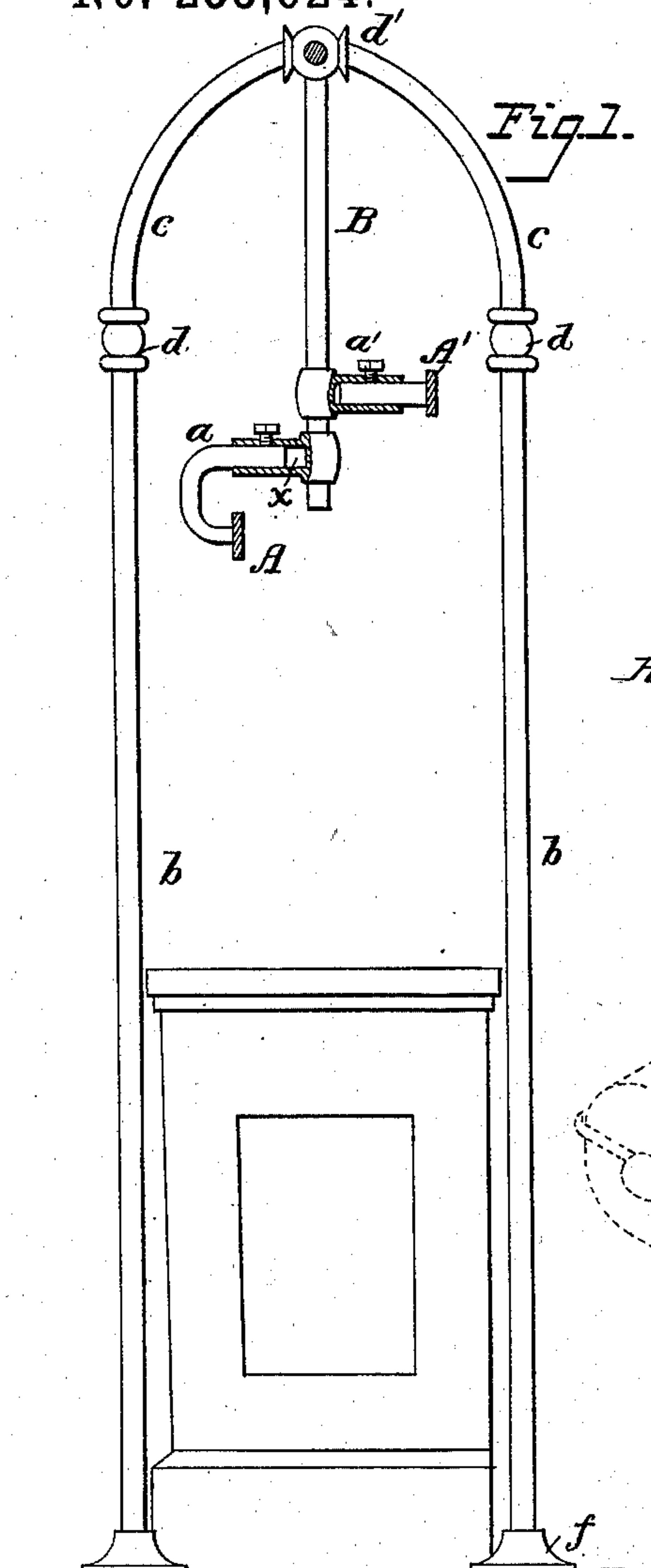
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H. H. HAYDEN.

STORE SERVICE APPLIANCE.

No. 255,624.

Patented Mar. 28, 1882.



Attest:  
C. A. Cooper.  
W. G. Gammann.

H. H. Hayden  
By his attorney  
Charles I. Foster

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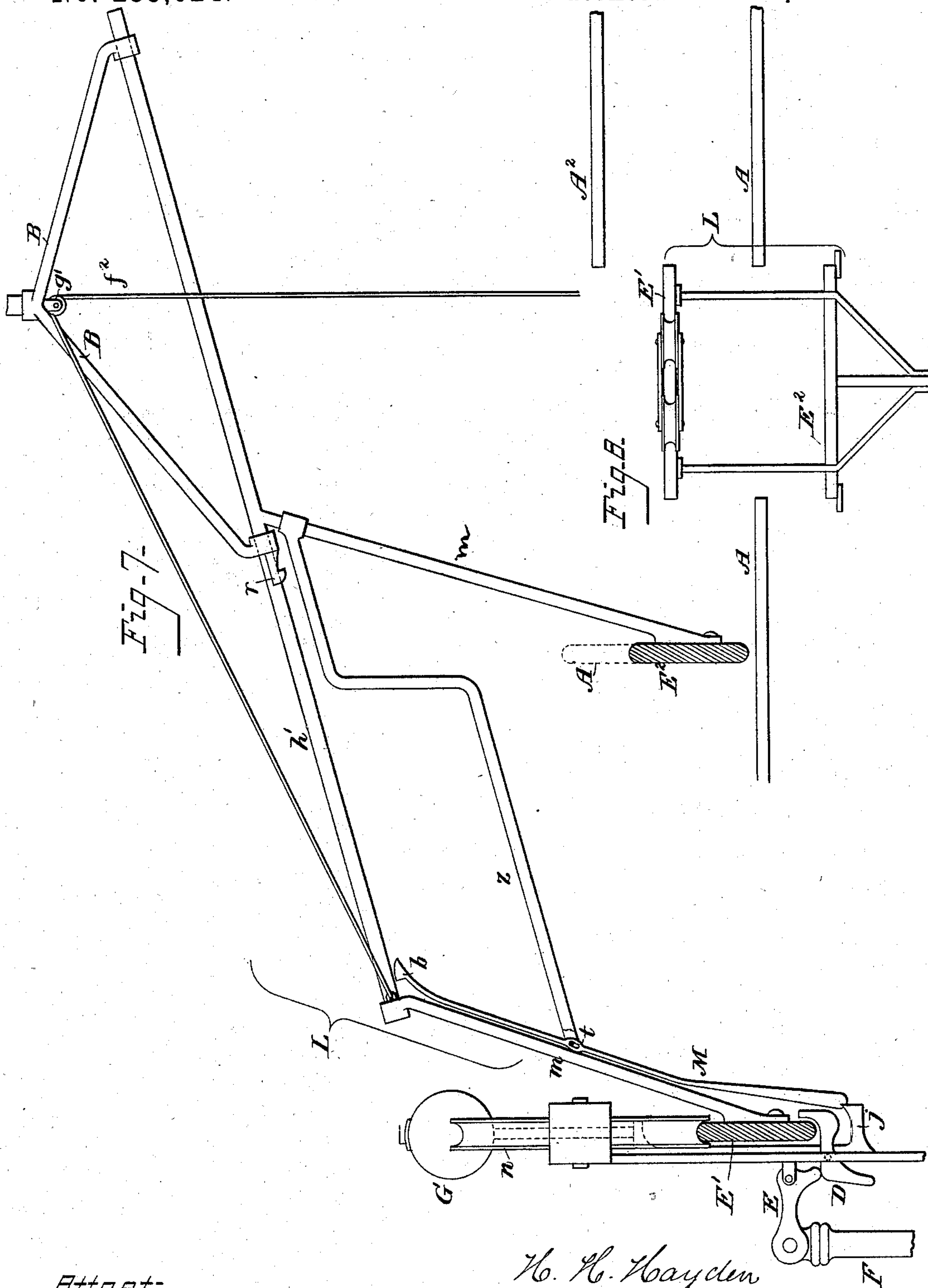
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H. H. HAYDEN.

STORE SERVICE APPLIANCE.

No. 255,624.

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Attest:  
Courtney A. Cooper.  
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By his attorney  
Charles E. Foster



# UNITED STATES PATENT OFFICE.

HARRIS H. HAYDEN, OF NEW YORK, N. Y.

## STORE-SERVICE APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 255,624, dated March 28, 1882.

Application filed March 8, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, HARRIS H. HAYDEN, of the city, county, and State of New York, have invented certain Improvements in Store-Service Appliances, of which the following is a specification.

My invention relates to improvements in the system heretofore used for automatically carrying cash, &c., between the counters and desks of stores; and it consists in constructing and arranging the tracks so as to facilitate operations, in devices for supporting the tracks, and of cars of peculiar construction, of means for locking the cars to the tracks, and for removing them from and placing them upon the tracks.

In the drawings, Figure 1 is an elevation of the rail-supports; Figs. 2 and 3, sections of the rails; Fig. 4, a section of one of the wheels; Fig. 5, a perspective view of a carrier and adjuncts; Fig. 6, a side view, illustrating the carrier-brake and switch devices; Fig. 7, a section illustrating in elevation the switch devices; Fig. 8, a plan of Fig. 7 on a reduced scale.

A represents the track conveying the carriers to the central desk, and A' the return-track. Heretofore such tracks have generally been made of metal. This is heavy and expensive for many purposes. I therefore make a rail by forming a flat tube, as shown in Fig. 2, or by bending a plate to the shape shown in Fig. 3 and filling the same with wood or paper, which will impart increased stiffness without any great accession of weight.

Heretofore the rails A A' have been arranged upon opposite sides of a hanger or standard, B, resulting in some locations in great inconvenience from the necessity of placing the cars upon the outer rail from the outside thereof. This difficulty I obviate by suspending the outer rail to a bracket, a, extending from the hanger or standard over the rail and curved inward, so that the carriers can be placed upon the outer rail from the inside. As the rails must be set at different distances from the supporting-rod, according to the circumstances, I avoid a multiplicity of castings by making the supporting-arm in two sections, one with a socket, x, receiving the end of the other, as shown in Fig. 1, a set-screw securing each piece after it has been properly adjusted.

Owing to the varying heights and different constructions of different stores, no two of which are precisely alike, it has been difficult to construct a single form of rail-support available to sustain the rails in their various positions. That shown in Fig. 1 has proved to be very efficient, consisting of straight bars or tubes b and curved bars or tubes c, united by coupling-pieces d. Each straight tube screws into a flat plate, f, which may be bolted to the floor or counter or to the ceiling, according as the support is a standard or a hanger. These pieces may be screwed together in different ways to secure supports adapted to various situations. For a standard they may be arranged, as in Fig. 1, in connection with rods B, which may extend through the central coupling, d', and there be secured by a set-screw, or the brackets a a' may be adjustable on rod B or on the supporting side sections, b b, without using the central rod, B. Where the ceiling is low the ends of the curved sections c may screw onto the plates f, the sections c and rod B constituting a hanger. Where a light standard is desired only one each of the sections b and c is used.

It is very important to lock the carriers to the rails, so that they cannot possibly become detached and fall upon the cases, goods, and persons beneath. It is equally important that no obstruction shall exist to the speedy removal of a carrier when necessary. I attain both these ends by the constructions shown in Figs. 5 and 7, where a retaining device, D, is so constructed and pivoted to the frame of a carrier, H, as to catch beneath the rail and prevent the carrier from rising or swinging, but may be turned down to release the carrier.

To hold, adjust, and release the retainer I use a bell-crank, E, pivoted to the carrier frame, and bearing with its inner end upon the shank of the retainer and locking it in position when the parts are in the position shown in Fig. 7. When the crank E is turned to the position shown in Fig. 5 the outer end of the retainer, being heaviest, falls out of the way, so as to permit the carrier to be readily removed from the rail. When the crank is brought back to position, its end, striking the end of the retainer, turns it to a horizontal position, and



then takes a position above the shank, locking the retainer immovably in place, as in Fig. 7. These operations are best effected by jointing to the end of the crank E a light wooden handle, F, which, when pushed upward, withdraws the crank from the retainer in the act of lifting the carrier, and when released, after putting the carrier upon the rail, insures by its weight the turning of the crank to a position to lock the retainer. The rod F is made longer than the carrier, but not so long as to hang far below the basket T' on the carrier, so that the latter may thereby be raised to a considerable height above the head of the attendant and placed on high rails without the use of stools, &c.

It will be apparent that the handle F may be connected directly to the frame. When the rails are at a great height I provide for the temporary extension of said handle by the use of a pole, N, having at the end a socket, y, in which the handle F will fit, as shown in Fig. 5.

A spring may be used to throw down the retainer, and the construction of the latter may be varied, yet the same results secured. I therefore do not limit myself to the construction shown.

Where the carrier and its load are heavy and the rails on a steep grade it is difficult to arrest the movements suddenly by the ordinary means without a shock to the carrier and supporting structure. For this reason I combine a brake with each carrier, which brake is constructed in any suitable manner so as to be applied automatically when the carrier is to be stopped. One available brake consists of an elastic pad, ball, shoe, or block, G, preferably spherical, carried by a rod, frame, or lever, g, guided on the frame maintained normally in an elevated position by a spring, and depressed to bring the shoe upon and between the wheels *n n* of the car when the latter is to be arrested.

The shoe-carrier is depressed by the contact with a stop-pin or other device. For instance, it supports a pin, j, in a position to extend beneath the rail and strike the beveled edge *x'* of the stop-plate K, arranged beneath the rail. The movement of the pin over said edge *x'* depresses the shoe-carrier, bringing the shoe upon the wheels until the pin enters a notch, i, in the plate, the edge of which will be struck by the pin as the expansion of the elastic shoe and action of the spring cause the shoe-carrier to rise. The wheels are thus locked for a moment and then released, stopping the heaviest carriers with but little jar.

The retainer and brake are combined by slotting the shoe-carrier, or by arranging the latter to extend at one side of the retainer. It will be apparent that other forms of brakes may be combined with the carrier, and that other devices may be used for applying them without departing from the main feature of my invention.

To prevent the rattling of the carrier as it

moves upon the rails I construct the wheels with edge faces of some sound-deadening material, as paper, rubber, &c. This is effected by molding or pressing the facing y, in a soft condition, on the periphery of a metallic wheel-body, n, and hardening by drying or vulcanizing. The wheel provided with such a tread is almost noiseless.

It is important that the bulk of the load be directly below the rail, so as to avoid tendency to tilt the car from the track. This I secure by making the basket T' with a bottom inclined or curved with the lowest point directly below the rail, so that the goods will fall to such point. As in many instances the goods must be longer than it is desirable to make the basket, (as corsets, umbrellas, &c.,) I make the basket with one or both ends open and use elastic retainers *h'*, consisting of straps with spring-connections or of elastic bands, the ends of which are connected adjustably to the sides of the basket. For instance, the end of each band may have a hook, and the basket may have a series of eyes at each side. To keep the band out of the way a disk, *f'*, may be centrally connected thereto, the weight keeping the strap down until it is extended and brought against the end of the bundle, and to this disk may be secured an elastic pad, *f'*, which serves as a bumper when loaded baskets are brought together.

It is most important to remove the carrier from the track the instant that it reaches its position, that it may not block the way and prevent the passage of the following carriers. To effect this I use a switch which will transfer each carrier as it reaches its place from the main track to a siding.

Different arrangements of switch-rails may be used. One I have found efficient is shown in Fig. 8, where the rail-section E' is carried by a frame, L, laterally from the line of the main rail to the line of the siding or turn-out rail A<sup>2</sup>.

The frame L may be attached to or form part of an inclined rod, *h'*, arranged to slide in bearings of the hanger B, and capable of sliding down by its weight, and combined with a cord, *f'*, and pulley *g'*, whereby it may be drawn inward or upward.

The transfer device is set by drawing upon the cord *f'* to carry the frame L back until the switch-section E' coincides with the main rail A. It there secures itself by means of a spring-lever, M, pivoted at *t*, so as to vibrate both back and forth and laterally, to one of the bars *m* of the frame, and provided with a shouldered end, *b*, that catches a shoulder, *r*, on the bracket B, or in some other suitable manner to hold it firmly. The lower end of the lever M extends downward below the section E', in a position to be struck only by the stop-pins *j* of the cars that are to be arrested at this point, other cars passing onward. When the pin *j* of a car strikes the lever M the car is arrested and the lever vibrated so as to disengage its end from the shoulder *r*, when the weight of



the car will carry the frame down until the car coincides with the siding-rails  $A^2$ . A second rail-section,  $E^2$ , may be carried by the frame to complete the track A, where the section  $E'$  coincides with the siding, and thus leave the line of the main track ready for the following cars. A weight on the cord  $f^2$ , or the pulling of the latter by the operator, then draws back the transfer-frame to its former position. A bar,  $z$ , extending across the frame, as shown, will prevent a second car coming upon the main rail A from moving off the open end of the latter while the transfer is being effected; but when the switch-section  $E'$  is drawn back to coincide with the rail A or  $A^2$  the bar will be out of the way and will permit the carriers to pass to or along the track.

I contemplate the use of various different appliances for stopping and releasing the carriers, for securing and releasing the rail  $E'$  and its transfer device, and different modes of transfer—as by rails moving from rail to rail parallel therewith, as described, or by lifting the carriers from one line of rail and placing them on the siding, or by other devices which may be brought to coincide with the siding; but I show the means illustrated in Figs. 7 and 8 as those I consider most likely to provide for the various contingencies which I have found must be met in actual practice.

I claim—

1. The combination, with the rail-supports of a cash-service system, of a rail consisting of a thin metal shell stiffened by a filling, substantially as set forth.

2. The combination, with the hanger or standard, of brackets constructed, substantially as set forth, to carry both rails on the same side, for the purpose specified.

3. The combination, with the supporting-bar and rails, of lateral arms in sections, each supporting a rail, and adjustable in respect to the bar and independently of the other arm, as set forth.

4. A carrier for a store-service system, provided at one side with a handle attached thereto and extending downward to a point below the frame, as specified.

5. The socketed pole N, adapted to the handle F of the carrier, provided with locking device, as and for the purpose set forth.

6. The combination, in a carrier, of a retainer, locking device and handle extending below the frame, connected to the locking device and constructed to release the latter when the

weight of the carrier is on the handle, as set forth.

7. The combination, in a carrier, of the retainer D, crank E, and handle F, substantially as and for the purpose specified.

8. The combination, with the carrier, of a brake device and appliances arranged on or adjacent to the rail, to apply the brake to the wheel, substantially as set forth.

9. The combination of the brake G, arranged to bear on the wheels  $n n$ , brake-frame  $g$ , and stop having an inclined edge,  $x'$ , and notch  $i$ , adapted to receive a pin on the brake frame, substantially as set forth.

10. The combination, with a carrier-frame, of a receptacle extending at both sides of the frame, with a bottom inclined toward the central line of the rail, substantially as described.

11. The receptacle open at one end and provided with a retaining-band, as set forth.

12. The combination of the receptacle, band, and adjustable attachments, as specified.

13. The combination, with the band, of a weight, as set forth.

14. The combination, with the retaining-band, of an elastic bumper, as specified.

15. The carrier provided with wheels having metallic bodies and grooved peripheries of material molded upon the bodies, substantially as set forth.

16. In a store-service system, the combination, with the rail extending between the counters and desk, of a siding and appliances, substantially as described, for transferring the car from one to the other, substantially as set forth.

17. The combination, with the main track extending between the desk and counters, of a track-section,  $E'$ , siding, and appliances, substantially as described, whereby the said section may be brought to connect with the main track or siding.

18. The combination of the main and siding rails, frame counterbalanced and carrying a switch-section and retaining device, and appliances, substantially as described, arranged to be struck by the car to release the frame when a carrier is upon the switch-section, substantially as set forth.

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

HARRIS H. HAYDEN.

Witnesses:

CHAS. D. BAKER,  
F. W. HARMON.