

(No Model.)

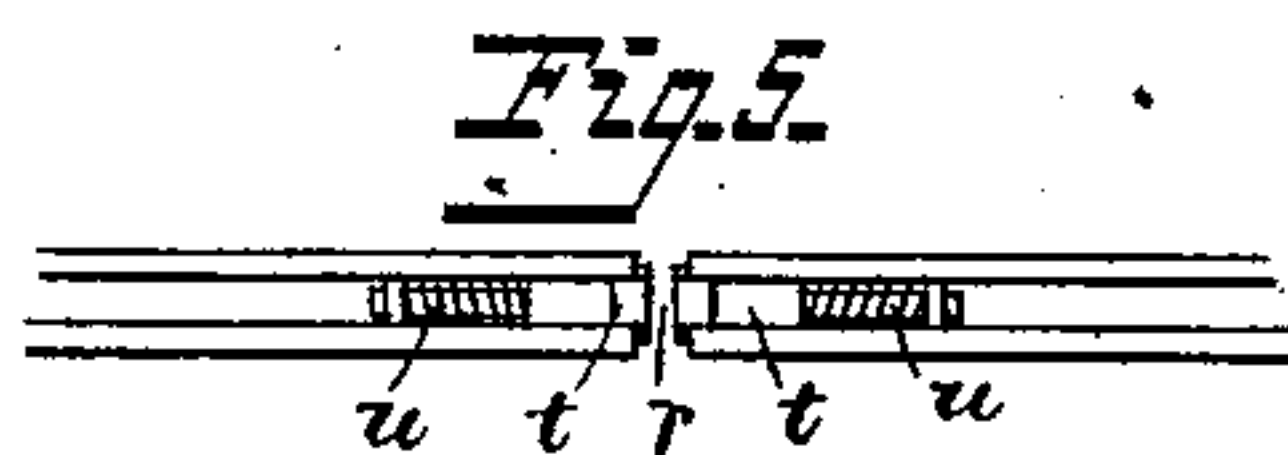
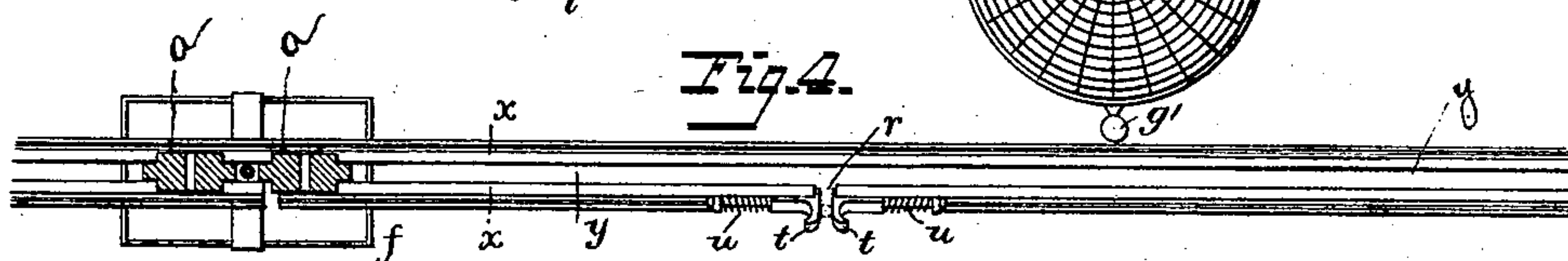
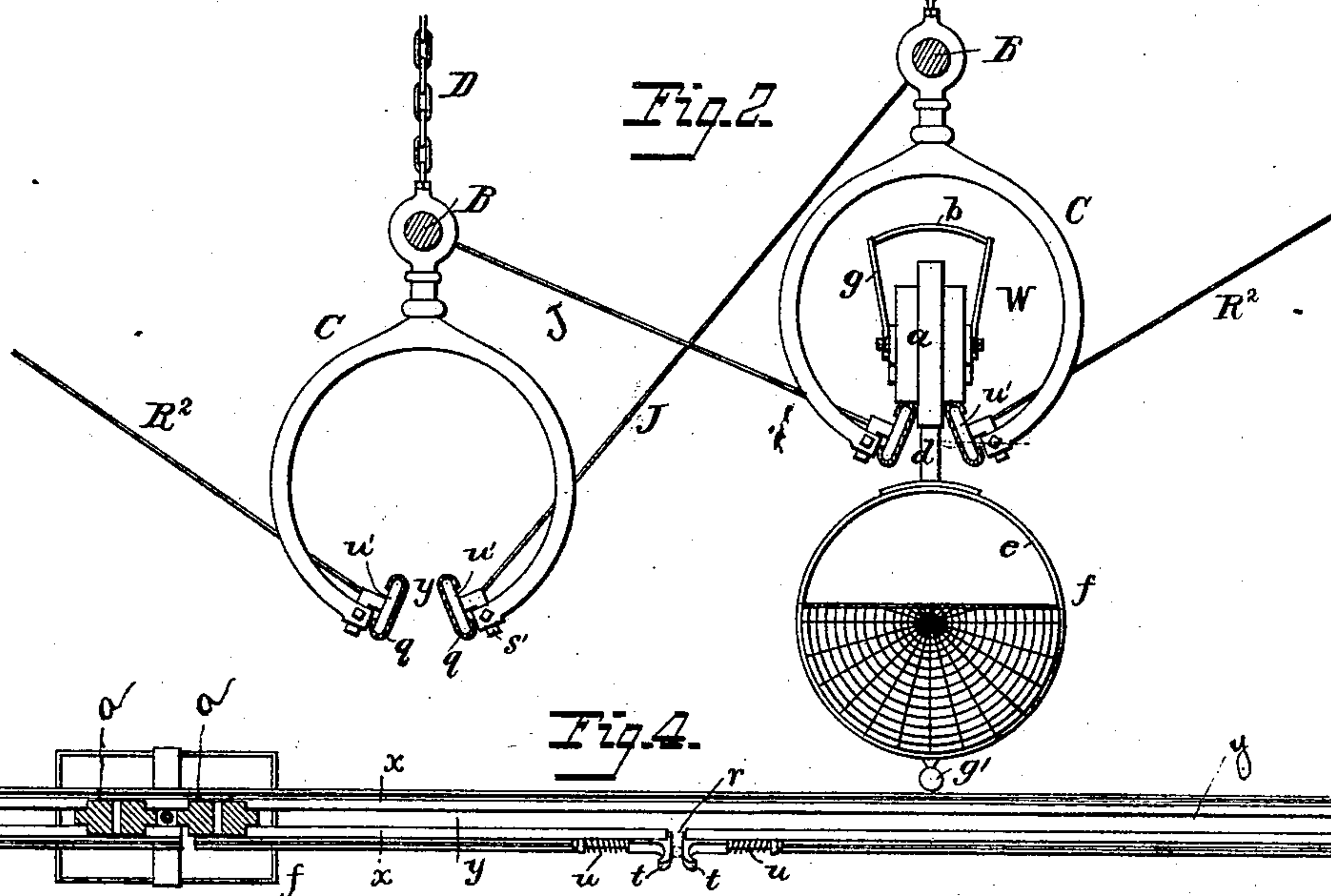
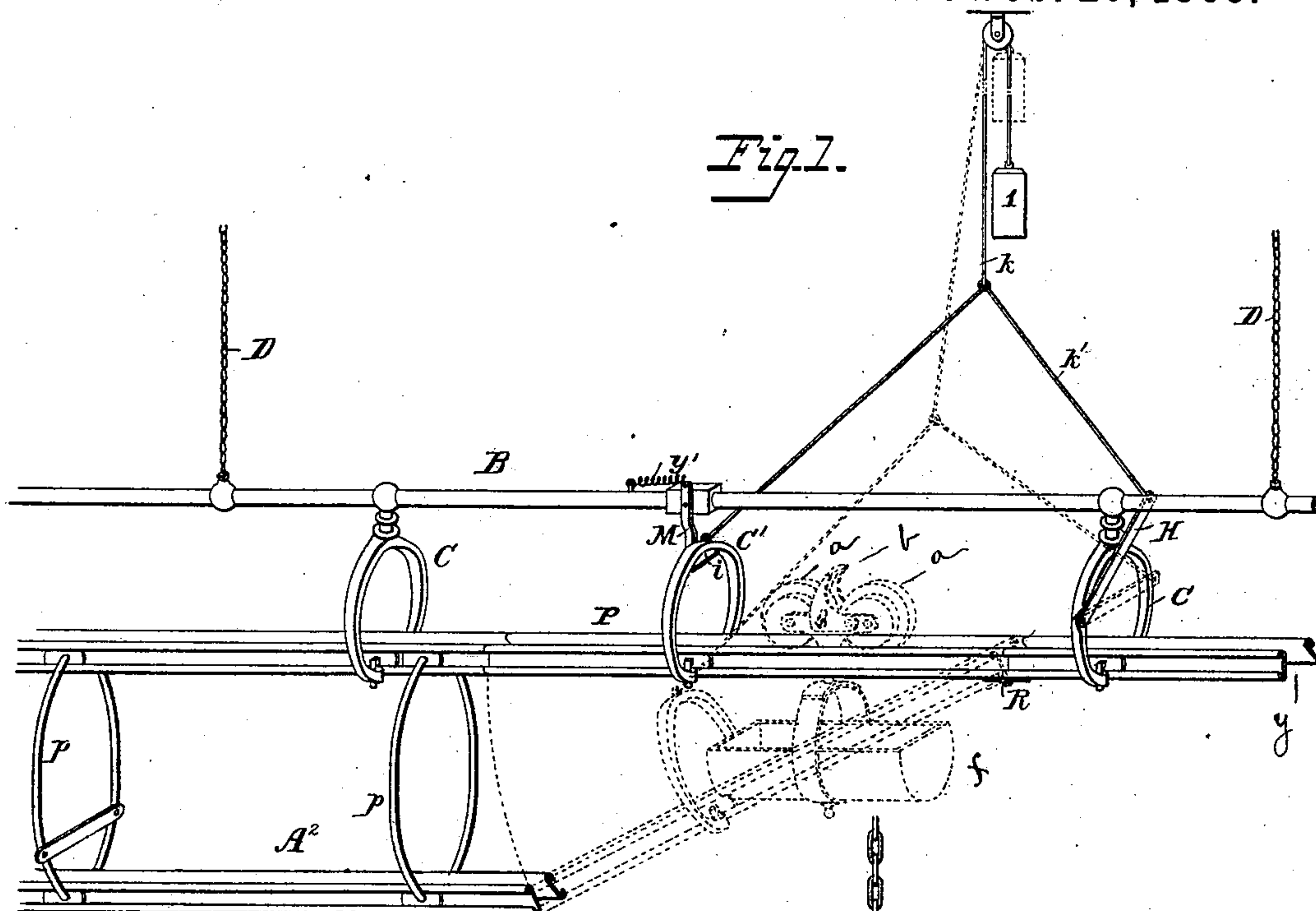
2 Sheets—Sheet 1.

H. H. HAYDEN.

STORE SERVICE APPARATUS.

No. 272,686.

Patented Feb. 20, 1883.



Attest:

Courtney A. Cooper

Forrestine Campbell.

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Inventor:

By Charles E. Foster
att'y.

(No Model.)

2 Sheets—Sheet 2.

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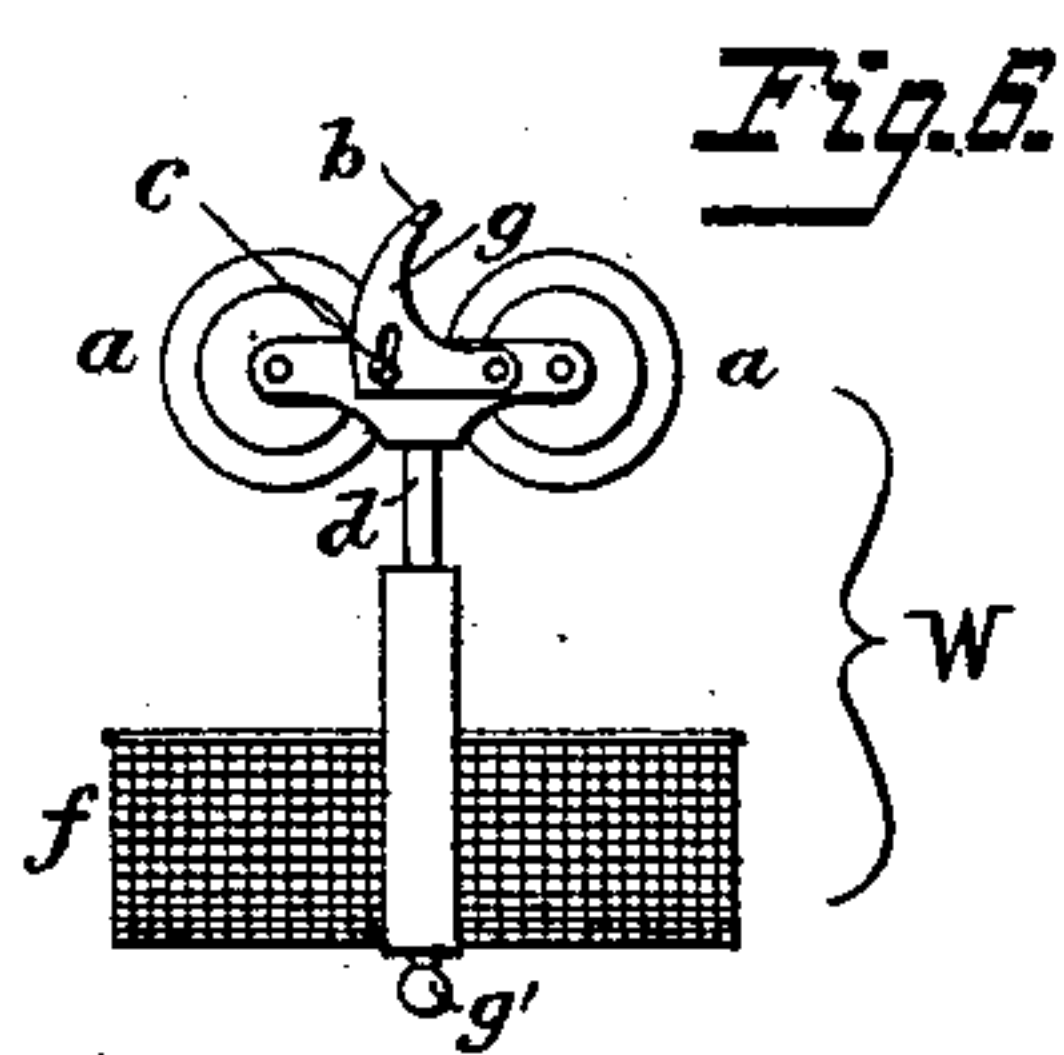
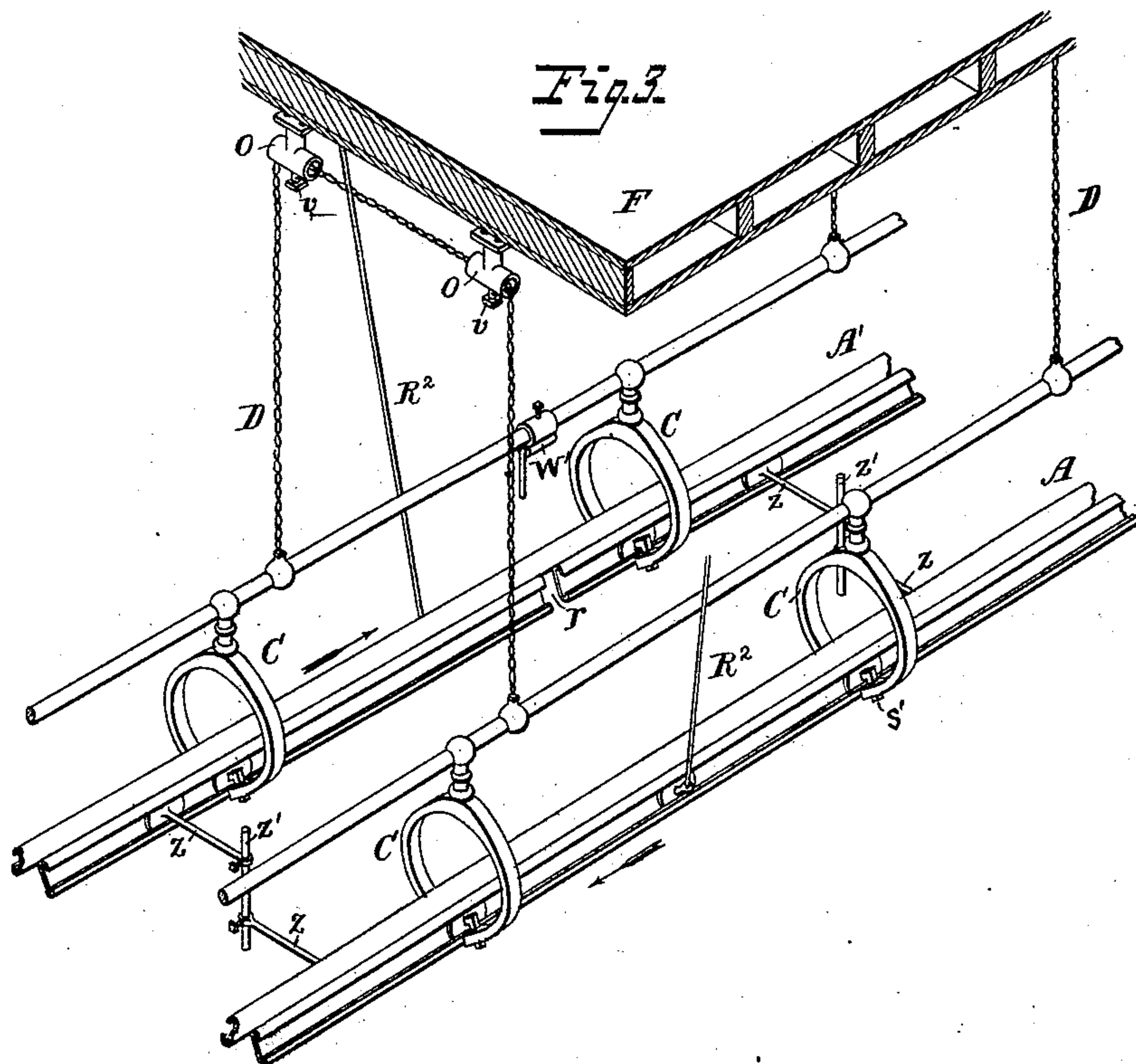


Fig. 7.



Fig. 9.



Fig. 10.



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UNITED STATES PATENT OFFICE.

HARRIS H. HAYDEN, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC PARCEL DELIVERY COMPANY, OF SAME PLACE.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 272,686, dated February 20, 1883.

Application filed October 13, 1882. (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 Apparatus, of which the following is a specification.

My invention relates to that class of store-service apparatus in which the goods and cash are conveyed between a main desk and the counters or stations by means of carriers having pendent baskets or receptacles; and my invention consists of certain improvements, hereinafter described, in the construction and support of the ways and carriers, and in the means for placing the carriers upon and removing them from the ways.

In the drawings, Figure 1 is a side view, slightly in perspective, of part of the way of a store-service apparatus, illustrating my invention. Fig. 2 is a transverse sectional elevation of the same, enlarged. Fig. 3 is a perspective view of the double ways, supports, and stays, seen from the level of the ceiling. Fig. 4 is a plan view of part of one of the ways and carrier in section. Fig. 5 is a side elevation of part of the same with locking device. Fig. 6 is a side view of one of the carriers. Figs. 7 and 8 are views illustrating the adjustable connection for the rails. Figs. 9 and 10 are views illustrating the method of fastening the stays to the rail.

The track or way is constructed to afford two bearings, *x x*, upon opposite sides of a continuous slot or channel, *y*, (see Fig. 4,) the wheel or wheels *a* of the car *W* resting upon both of the ways, and the basket *f* being connected to the frame of the car by means of a stem, *d*, preferably round in cross-section, so as to afford as little bearing as possible in case of accidental contact between the stem and the way.

As shown, the carrier is provided with two wheels, *a a*, of such width as to fit nicely, without friction, upon the edges of the rails or strips *g*, and with a central annular rib, which remains between the rails as the wheel revolves, and prevents lateral play sufficient to bring the rod *d* against the edges of the strips. By this means I almost entirely prevent any friction tending to retard the movement of the carrier upon the way. This construction prevents absolutely the possibility of derailment,

and reduces to a minimum the lateral oscillation of the carrier. To prevent possible contact between the stem *d* and the inner edges of the strips *g*, should any oscillation of the carrier occur, I set the rails at an angle, as shown in Fig. 2, or bevel the inner edges of the rails.

The ways may be constructed of various forms to secure the bearings and slot aforesaid. As shown in the drawings, each way *A* consists of two hollow rails, *g g*, similar in construction to those described in my Patent No. 260,568, secured to yokes *C*, and separated to form the slot *y*, the yokes being suspended from a rod, *B*, supported by chains or cords *D* from the ceiling *F*.

Heretofore ways have been supported either by hangers fastened rigidly to the ceiling or on brackets attached to the shelving or on a frame-work resting on the floor. The improvement here shown consists in suspending the "ways," by means of chains or other light and strong material, from the ceiling *F*, the suspending chains or cords *D* being passed through eyes *O* and fastened therein, when properly adjusted, by set-screws *v*. By having the cords or chains of uniform length the tracks, when hung, will be exactly level and equal, and will balance each other. By pulling down the end of one track the companion track will be raised to a height exactly corresponding thereto, and thus a regular and uniform grade or incline of both tracks sufficient to give the carrier the proper impetus is easily and quickly secured. Any other flexible suspension may be used with or without the counterbalancing feature, as the mere use of a flexible suspension will reduce noise and facilitate erection. When the position is determined, the further shifting of the chains is prevented by the setting of set-screws *v v*, or by cross-pins inserted where the chains enter the eyes *O O*, or otherwise. Longitudinal swaying and lateral displacement of the ways are prevented by means of braces *z z*, connected, Fig. 3, adjustably to upright rods *z'*, to accommodate the varying relative position of the two ways as graded. As shown in Fig. 3, the track *A'* is graded so that a carrier will pass in the direction of the arrow, and the track *A* is inclined in the reverse direction.

Bracing wires or cords *J J*, Fig. 2, can be

put across from the rod B of one way to the rail of the opposite way. The track is further secured against swaying by guys or stays R² R², which pass up at the proper angle to the ceiling, or by similar stays, (or fixed rods,) which are fastened to the counters or shelving below, or elsewhere.

It is important that the rails *q q* should be perfectly straight on their upper surfaces. For this reason, to overcome any inequalities in the rails, and also for increased convenience in setting up the apparatus, I use rails formed of metal, bent to form inturning back flanges, and attach the rails to the yokes C by means of separate eye-pieces *u' u'*, which slide into the rails, said pieces having pins *s'*, which are dropped into holes in the lower ends of the yokes C, where they can be adjusted to set the rails and fastened in place by set-screws. One of the rails *q* is severed to form slots *r* at the points where it is convenient to place the carriers upon the way, such slots permitting the passage of the stem *d* from the outside of the rail to the slot *y* when the carrier-wheels are above the way; but after the wheels take their bearing upon the rails *q q*, the central flange prevents any such lateral motion as will permit the stem to pass into the slot and the car to fall off the track. Double guides *t t*, Fig. 4, secured to plates inserted in the hollow of the rail adjacent to the slot *r*, facilitate the introduction of the stem into the slot in placing the carriers upon the way. These guides may slide in the slotted rail, and may be thrown together by means of springs *u u*, as shown, and the slot will thus be closed as soon as the car-stem has passed in.

The carriers may be stopped in any suitable manner and removed by hand at points where the rails are slotted, as shown in Fig. 3, where a stop, W', is shown on the return-track. I prefer, however, to deflect the carriers to a stationary rail-section, as shown in Fig. 1. For this purpose a section, P, of the way is made movable and hinged at R R to the main stationary portion, so that the opposite end may be swung downward to the end of the stationary section A², suitably supported upon the main way by ring-braces *p p*, through which cars can pass and onto which the proper carrier will run, the movable section being then returned to place for the passage of other carriers. To prevent a following carrier from running onto the section P when the latter is depressed, I use a guard or gate, H, which drops automatically at the rear of the pivot-point when the section P is depressed. The movements of the section P may be effected by hand. I prefer, however, to provide means whereby each carrier may be automatically removed on reaching the proper station. For this purpose section P should be counterbalanced by a spring or weight, so as to occupy a horizontal position until depressed by the weight of the carrier, and should be secured in such horizontal position by a locking device operated

only by the carriers which are to be detached at such point. As shown in the drawings, the section P is counterbalanced by a weight, *l*, connected to a cord, *k*, passing over a pulley, and attached to a yoke, C', connecting the rails of said section. A catch, M, is pivoted to the rod B, and has a lip or shoulder, *i*, which extends beneath the yoke C' and holds the section P in place until the catch is struck at its lower point by the cross-pin *b* of the carrier which is to be detached. The contact of this cross-pin swings out the catch and releases the section P, when the weight of the carrier will cause such section to drop until the carrier passes onto the section A², when the weight *l* will restore the section P to its horizontal position, and the catch, operated by its weight or by a spring, *y'*, will swing under the yoke C' and secure it.

The gate H is connected by a cord, *k'*, to the cord *k*, so that the said gate will be raised as the section P assumes a horizontal position, and lowered when said section is depressed. It will be obvious that said gate may be made in different forms and differently operated to accord with the movements of the section P, and that locking devices constructed and operated differently from that described may be used with like results.

The cross-pins *b* upon the carrier may be made adjustable by connecting them to plates *g*, pivoted to the carriers and slotted for the passage of binding-screws *c*, by which the plates may be clamped in position after their proper adjustment.

Although I have described the rails as being of metal, they may be made of light strips of wood, and, whether of wood or metal, may have side flanges to aid in guiding carriers of any suitable construction.

To facilitate the placing of the carriers in position from below and avoid the necessity of using elevating devices, each carrier may be provided with a permanent downwardly-projecting stem or handle, *g'*, by means of which it may be elevated to a way at a considerable height above the head.

A convenient form of basket for the carrier is a half-cylinder, *f*, open at the top and lying within a ring, *e*, secured to the stem *d*, and provided with a handle, *g'*, and supporting the basket without interfering with the placing of articles of large size in the basket.

It will be obvious that the movable section P may be used as a means of putting the carriers upon the track. Thus the section may be pulled down, a carrier placed upon the end of the same and held by a suitable stop, and the section then raised into line with the way, onto which the carrier will pass. In such cases the counter-weight may be sufficient to elevate the way and carrier with the goods it contains; or the section may be raised by means of a handle or other appliance.

In a separate application for Letters Patent I have shown a movable send-off section ar-

ranged at an angle to the main line, and I do not claim here, broadly, the employment of such movable sections, the distinguishing feature of this invention being the use of movable portions of the main track in line therewith, as described.

I claim—

1. The combination, in a store-service apparatus, of a way consisting of parallel rails forming a continuous central slot, *y*, and carriers with wheels adapted to said parallel rails, and with baskets or holders suspended therefrom by stems extending through said slot, substantially as set forth.

2. The way consisting of separated strips or rails *q q*, connected by overarching yokes *C*, substantially as set forth.

3. The combination, in a way, of rails *q q*, connected by overarching yokes and spread apart from the upper to the lower edges, as specified.

4. The combination, with the way and yokes *C*, of a bar, *B*, supporting said yokes, as set forth.

5. The way consisting of parallel separated bars, with slots *r* extending through one of said bars, for the purpose set forth.

6. The combination, with the way having slots *r*, of guides *t*, as specified.

7. The way consisting of two parallel sections, with slots in one of said sections and with automatic closing devices, substantially as set forth.

8. The way provided with a movable section, *P*, in combination with a locking device constructed to be operated by the carriers, and with a counter-balance and an auxiliary section, *A*², substantially as set forth.

9. The combination, with the way and its movable section, of a gate and appliances for closing and opening the same as said section is operated, substantially as specified.

10. The combination, with the way and its movable section, of a locking device provided with stops or projections, and carriers provided with adjustable stop-pins *b* to act upon said locks, substantially as set forth.

11. The carrier with wheels adapted to ways consisting of parallel rails, with an intervening continuous slot, and provided with a central dependent stem supporting a receptacle, in combination with said ways, as specified.

12. The combination, in a carrier, of a basket, *f*, and a band, *e*, connected to the carrier-frame, and provided with a handle, *g'*, substantially as set forth.

13. The combination of the tracks and flexible suspensories and the guys or stays connected to the ways, substantially as specified.

14. The combination of the ways *A A'*, and flexible suspensories connected to both ways and adjustably supported, substantially as specified.

15. The eye-pieces *u' u'*, adapted to the rails, and with pins adjustable in sockets in the yokes *C*, as and for the purpose set forth.

16. The adjustable braces *z z'*, extending between the tracks, for the purpose specified.

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

HARRIS H. HAYDEN.

Witnesses:

BENJ. F. GILL,
B. T. BURNHAM.