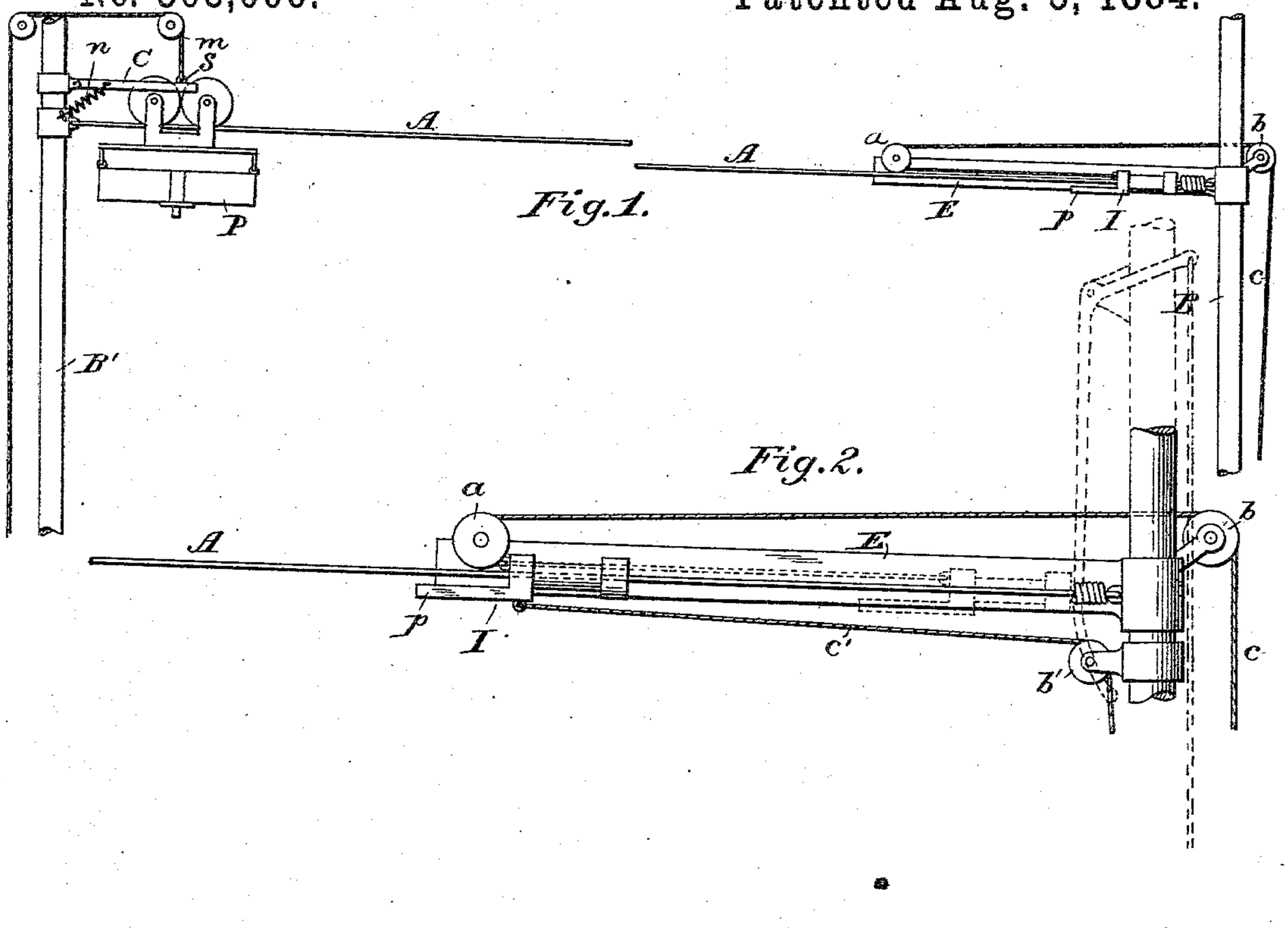
(No Model.)

H. H. HAYDEN.

STORE SERVICE APPARATUS.

No. 303,006. Patented Aug. 5, 1884.



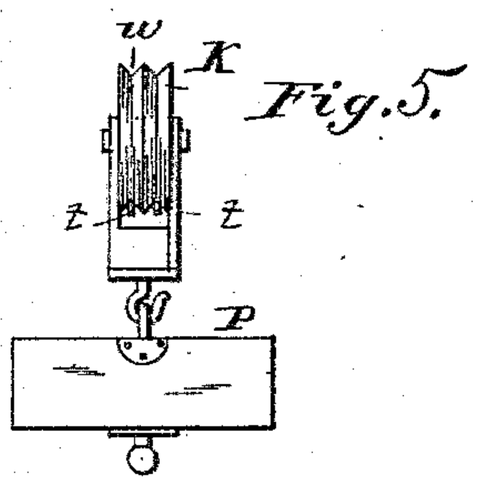


Fig. 5.

Fig. 4.

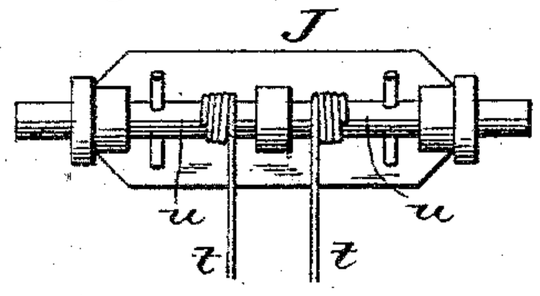
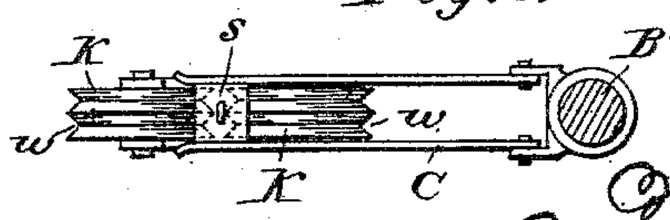


Fig. 3.



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UNITED STATES PATENT OFFICE.

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

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 303,006, dated August 5, 1884.

Application filed October 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, HARRIS H. HAYDEN, a citizen of the United States, and a 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 consists in certain improvements in store-service apparatus, fully described hereinafter, whereby to propel the carriers, facilitate their manipulation, and secure a better way than is afforded by the single wireways heretofore used.

In the drawings, Figure 1 is an elevation of a wireway, showing one form of propelling and retaining device, said way constituting one of the usual series of ways in a store. Fig. 2 is an enlarged view of the propelling device. Fig. 3 is a plan view, enlarged, of the retainer. Fig. 4 is a view showing a duplex wire-tightener. Fig. 5 is an edge view of a carrier adapted to a double wireway.

In some classes of store-service apparatus it is desirable to impart an initial impetus to the carriers, whereby they are caused to travel by momentum upon the ways. Heretofore such impetus has generally been imparted directly by the hand of the operator, necessitating the hanging of the ways low down or placing the operator in an elevated position, while the force which can be applied to the carriers in this way is seldom sufficient to propel the carriers for any great distance. To avoid the necessity of lowering the way or placing the operator in an elevated position, and at the same time effectually apply such force as will suffice to propel the carriers for the longest required distance, I employ a mechanical send-off under the control of the operator. This send-off is constructed so as to be moved or controlled by the operator to impart a forcible and sudden movement to the carrier upon the way, and such send-offs are placed at the opposite ends of a way, or at one end only, or at intermediate points, so as to accelerate the motion already acquired by carriers or start those which have been arrested between stations. One form of propelling device is an arm pivoted at one end and swinging over or adjacent to the way, so as to strike the carriers, and operated by a cord, as shown in dotted lines, Fig. 2. A construction which is most effective is illustrated in Figs. 1 and 2, in which A represents a wireway; B, one of the terminal supports; I, a perforated slide constructed to move freely on the way or other like support, and having a terminal finger, *p*. *a* is a grooved pulley, supported by an arm, E, extending from the support B; *b*, a guide-pulley on the support B, and *c* a cord passing from the slide over the pulleys and extending to a point within reach of the operator, where it may be provided with a handle or connected to a treadle. When a carrier, P, is in contact with the finger *p* of the slide, and the latter is in the position shown in dotted lines, a sudden downward movement of the cord *c*, imparted by the operator, will propel the slide I quickly upon the way and impart the required impulse to the carrier. A second cord, *c'*, Fig. 2, passing over a pulley, *b'*, may be used to retract the slide. It will be found, however, that in most instances the momentum of incoming carriers will carry the propelling devices to the backward positions.

By the use of a send-off or propelling device, as described, the carriers are not only operated upon elevated ways by attendants upon the floor of the store, but it is possible to impart such a powerful impulse to the carriers that they may be sent long distances upon level ways or up inclined ways, thereby dispensing with continuously-operating conveyers heretofore considered necessary, while the speed is increased in proportion to the force of the impulse.

By the use of a mechanical propeller with an inclined way, the carriers may be propelled by the send-off to the upper end of the way and descend by gravity. In such case an automatic detent is used, whereby the carrier is arrested and held when it arrives at the terminus, and appliances operated by the attendant move such detent to release the carrier. One of the many forms in which such detent is made is shown in Figs. 1 and 3, where B' is one of the terminal supports of the wireway; C, an arm hinged to said support or to any other point, and provided with a V-shaped finger, *s*, arranged to enter the space between the

wheels of the carrier, as shown. *n* is a spring for drawing down the arm, and *m* a cord passing over guide-pulleys, whereby the attendant may lift the arm to release the carrier. The detent occupies normally such a position that the carrier will pass beneath the same as it reaches the upper end of the way, and will lift the arm by contact therewith until the finger *s* takes a position between the wheels. When other forms of carriers are used—as balls, rolling cylinders, &c.—the detents and other devices will be adapted to operate therewith in like manner as above described.

The mode of operating above set forth is adapted for use with carriers, each passing back and forth upon one track, or with those traveling in one direction only, with detachable or undetachable carriers, or where there is a separate way between each station and the desk, or where one way passes several stations, and with ways constructed to convey wheel-carriers or rolling or sliding carriers.

Where wireways are used as heretofore constructed, each of a single wire, the carriers are apt to have an objectionable oscillating motion, and a breaking of a wire results in the fall of the carrier and injury to persons or to show-cases, necessitating the use for safety of wires that are objectionably heavy. To avoid this I make the way of two or more fine wires, *t t*, arranged parallel to each other and each of the same length. When taut wires are used, I employ a duplex tightening device, J, having two independent shafts, *u u*, each constructed to be revolved by a suitable key, and having one of the wires secured thereto. I prefer to have the number of grooves *w* in each wheel K, Fig. 5, correspond to the number of wires in the way.

Without limiting myself to the construction and arrangement of parts shown, I do not claim, broadly, an inclined track, carrier, and spring-propelling devices; but

I claim—

1. In a store-service apparatus, the combination, with the way or ways, of one or more carriers, propelling devices constructed to push the carriers, and appliances, substantially as described, extending from the propelling devices to the operator's desk, whereby said propelling devices may be moved by the operator to impart initial movements to the carriers, substantially as set forth.

2. The combination, in a store-service apparatus, of a way supporting one or more carriers, a movable propeller to push the carriers on the way to impart initial movements thereto, and appliances, substantially as described, whereby the said propeller may be directly operated by the attendant from the counter below the way, substantially as set forth.

3. The combination, with the sliding propeller, of cords attached thereto extending to the attendant's station, and whereby the slide constructed to impart initial movements to the carriers may be both retracted and carried forward by the operator, for the purpose set forth.

4. The combination, with an inclined way, of a propeller at the lower end of the way and a detent at the upper end, and appliances, substantially as described, whereby the attendant may directly operate the detent to release the carrier, substantially as specified.

5. The combination of the way, consisting of two parallel wires or cables on the same plane, and a duplex tightening device, substantially as specified.

6. The combination, with the way of a store-service apparatus and carriers adapted to move thereon, of a propeller at one end for imparting an initial impetus to the carriers, and a catch or detent at the other end, and appliances, substantially as described, whereby the detent may be operated by the attendant at the counter to release the carrier, substantially as described.

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

HARRIS H. HAYDEN.

Witnesses:
A. T. JOHNSTON,
WM. B. DE LACY.