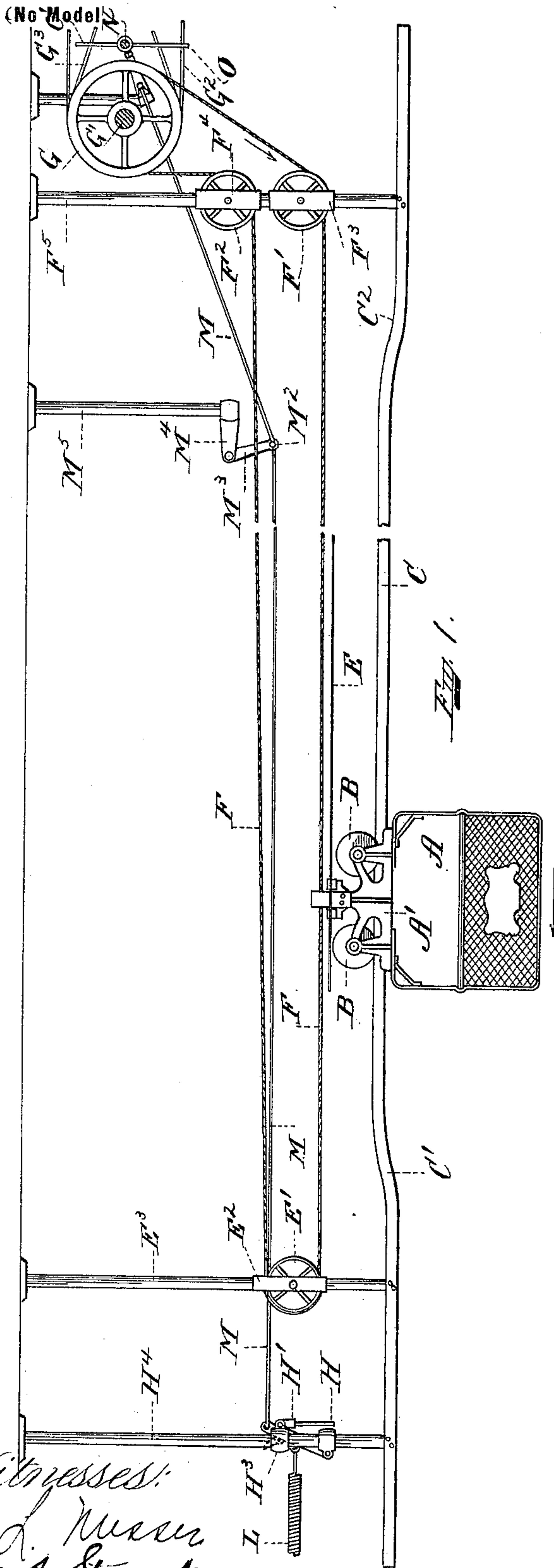


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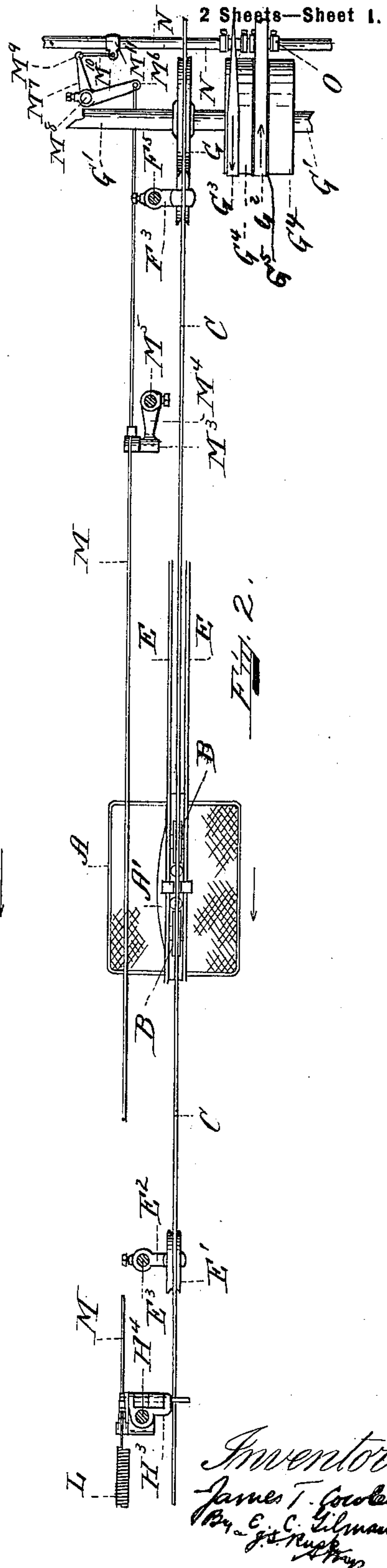
Patented Dec. 26, 1899.

J. T. COWLEY.
CONVEYING APPARATUS.

(Application filed Mar. 23, 1899.)



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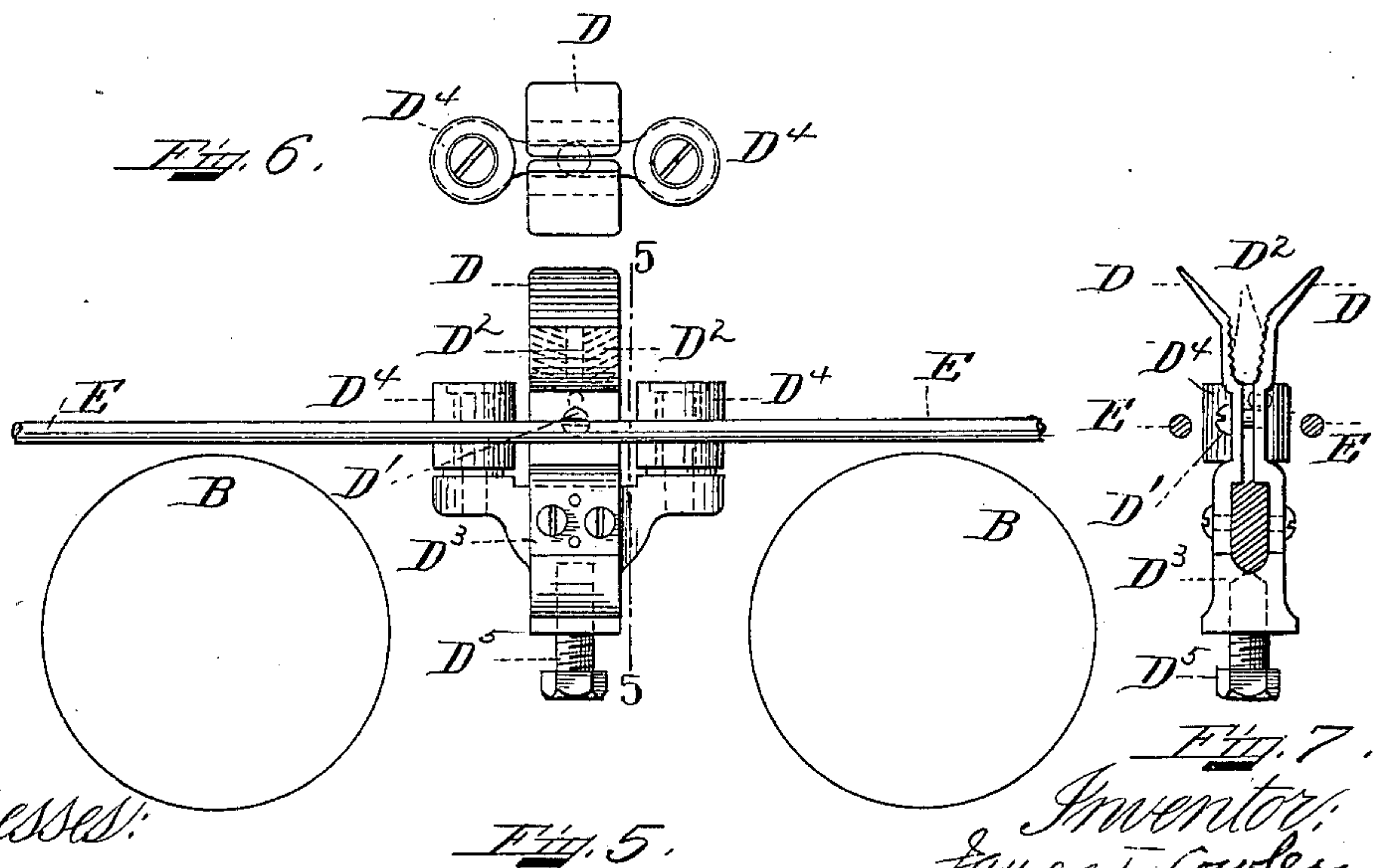
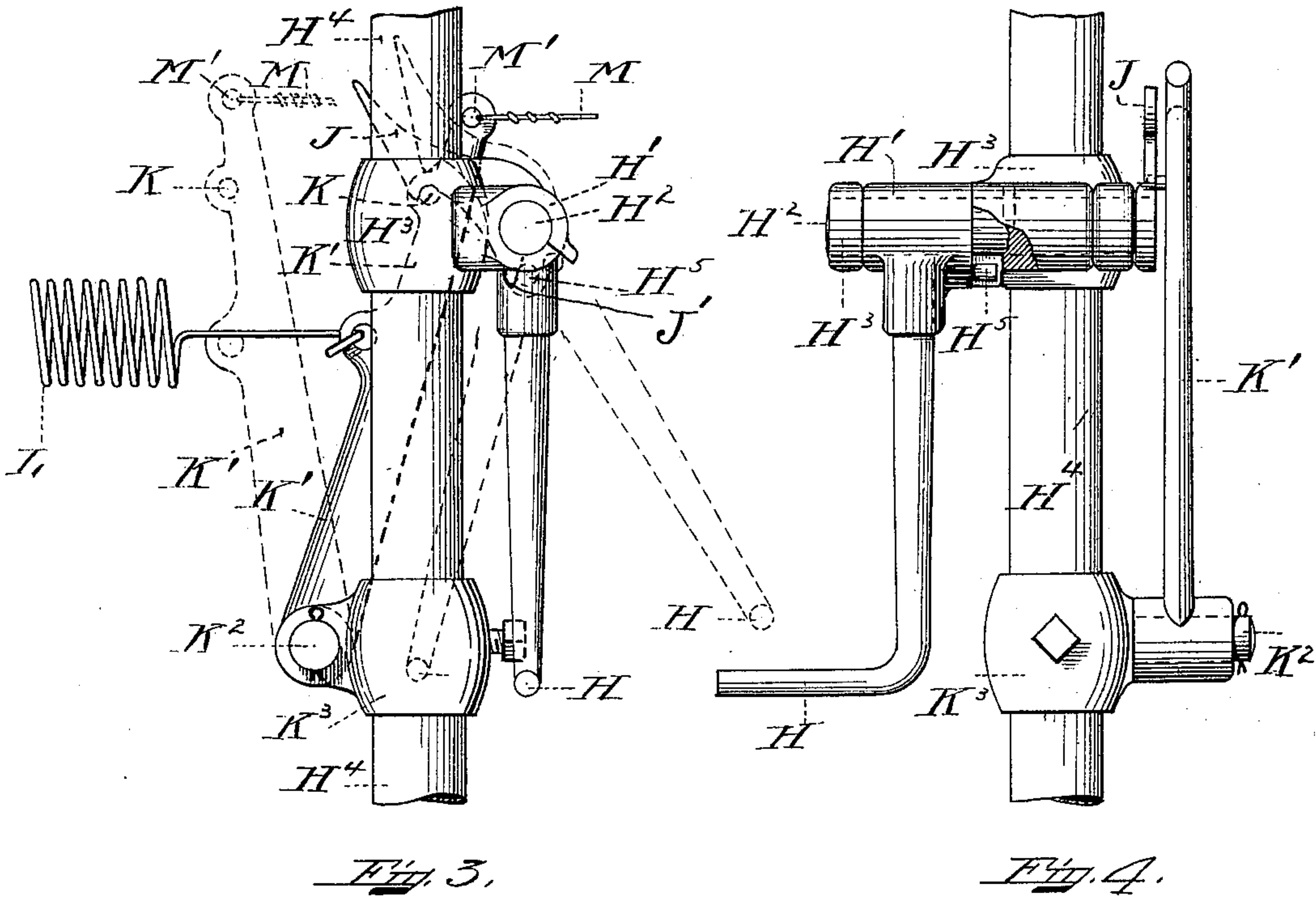
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JAMES T. COWLEY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY.

CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 640,104, dated December 26, 1899.

Application filed March 23, 1899. Serial No. 710,156. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. COWLEY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Conveying Apparatus, of which the following is a specification.

My invention relates to improvements in conveying apparatus; and its object is to provide a line over which a carrier will be propelled in both directions by the same cable, and, further, to provide automatic means for shifting the direction of travel of the cable when the carrier reaches the opposite end of the line.

My invention relates to certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a side elevation of the line with the carrier in the center of the line traveling in the direction indicated by the arrow. Fig. 2 is a plan view of the same. Fig. 3 is a detail side view of the trip mechanism. Fig. 4 is an end view of the trip mechanism. Fig. 5 is a side view of the cable-gripping mechanism on the carrier. Fig. 6 is a top plan view of the same. Fig. 7 is a sectional view taken on the line 5 5, Fig. 5.

Like letters of reference refer to like parts throughout the several views.

The carrier A is provided with wheels B, adapted to travel on the track C. Said carrier is provided with fixed gripping-jaws D, capable of adjustment by the set-screw D', and which jaws are internally provided with oppositely-inclined corrugations D² for the purpose of gripping the cable as the carrier travels in opposite directions and forcing the cable toward the bottom of the jaws D. These gripping-jaws are secured to the frame D³ by suitable means, and on the opposite ends of said frame are mounted friction-rollers D⁴ for steadying the carrier as it travels along the track by engaging with the guide-rails E, which may extend a part or the entire distance of the track. The continuous cable F passes around the pulley E', carried by the bracket E², supported on the hanger E³, and around the pulleys F' and F², supported in

the hangers F³ and F⁴ on the hanger F⁵. This cable passes around the driving-pulley G, mounted fast on the shaft G', which is driven by the straight belt G² and the cross-belt G³, running on the loose pulleys G⁴ and fast pulley G⁵. As shown in Fig. 2, the belt G² is on the fast pulley G⁵ and the cable is pulling the carrier in the direction indicated by the arrow, Figs. 1 and 2. As the carrier A runs down the depressed portion C' of the track C it becomes disengaged from the cable and runs by momentum along the track until it strikes the lever H, having a hub H' loosely mounted on the shaft H², which is supported in the bracket H³, carried by the hanger H⁴. On the shaft H² is securely fastened the catch J in engagement with a pin K on the lever K', mounted on the stud K² in the hub K³. Secured to the lever K' is a spring L, the opposite end of which is secured to some fixed point and so adjusted as to maintain the tension at all times on the lever K' to pull it forward to the position shown in dotted lines, when the catch J is released from the pin K.

The trip-wire M is connected at M' to the lever K' and at M² to a pivoted link M³, mounted on the bracket M⁴, carried by the hanger M⁵. Said trip-wire then continues and is connected at M⁶ to the bell-crank lever M⁷, pivoted at M⁸, and to the opposite end of said bell-crank lever is connected the link M¹⁰, secured at its opposite end to a bracket M¹¹ on the belt-shifting rod N. On the belt-shifting rod N there are mounted fast the belt-shifting fingers O O' in engagement, respectively, with the straight and cross belts G² and G³.

The operation of the apparatus is as follows: When it is desired to send a carrier from the right-hand end of the line, it is moved up the inclined portion C² until the gripping-jaws engage the cable. As the carrier A reaches the depressed portion C' of the track C it pulls away from the cable F and continues its travel by momentum until it strikes the lever H, which moves to the left-hand dotted position, Fig. 3. When the lever H is in this position, the pin H⁵, engaging with the finger J' of the catch J, will lift the catch J into the position shown in dotted lines Fig. 3, and out of engagement with the pin K on the lever K'. The lever K' will then be pulled forward by

the action of the spring L, carrying with it the trip-wire M, which, being connected to the bell-crank lever M' and the belt-shifting rod N, will shift the belts G² and G³ so that the belt G³ will occupy the position on the tight pulley G⁵ now occupied by the belt G² (see Fig. 2) and the direction of travel of the cable will be reversed and will return the carrier to the station from which it was sent as soon as the carrier has again engaged with the cable. In returning the carrier from the left end of the line to the right end it is moved along the depressed portion C' and strikes the lever H, moving it to the right-hand dotted position, (shown in Fig. 3,) and as the carrier passes under said lever the lever returns by gravity to the position shown in full lines, Fig. 3. The carrier upon its return movement toward the right end leaves its engagement with the cable F upon arriving at the depressed portion C² at the right end. When it is desired to again send the carrier over the line, the operator will shift the belts G² and G³ to the position shown in Fig. 2 by moving the shifting-rod N. This movement of the rod N will carry with it the bell-crank lever M' and trip-wire M, connected to the lever K', and restoring the lever to its position in engagement with the catch J and put the spring L under tension for the next operation of the shifting belts. The carrier is then moved up the inclined portion C² of the track C until the gripping mechanism is in engagement with the cable F, when the carrier will be moved over the line to the opposite end, when the operation will be the same as above described.

I do not limit myself to the arrangement and construction shown, as the same may be

varied without departing from the spirit of my invention.

Having thus ascertained the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a conveying apparatus, a cable, a motor for propelling said cable, a track, a carrier adapted to travel on said track and to engage with said cable and be propelled thereby, and mechanism for automatically reversing the direction of travel of said cable and adapted to be actuated by the movement of the carrier to reverse the cable after the carrier has become disengaged from the cable.

2. In a conveying apparatus, a cable, a motor for propelling said cable, a track, a carrier adapted to travel on said track and to engage with said cable and be propelled thereby, and mechanism for automatically reversing the direction of travel of the cable after the carrier has become disengaged from said cable.

3. In a conveying apparatus, a cable, a motor for propelling said cable, a track, a carrier adapted to travel on said track and to engage with said cable and be propelled thereby, and mechanism for reversing the direction of travel of said cable after the carrier has become disengaged from said cable.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of March, A. D. 1899.

JAMES T. COWLEY.

Witnesses:

A. L. MESSER,
C. A. STEWART.