

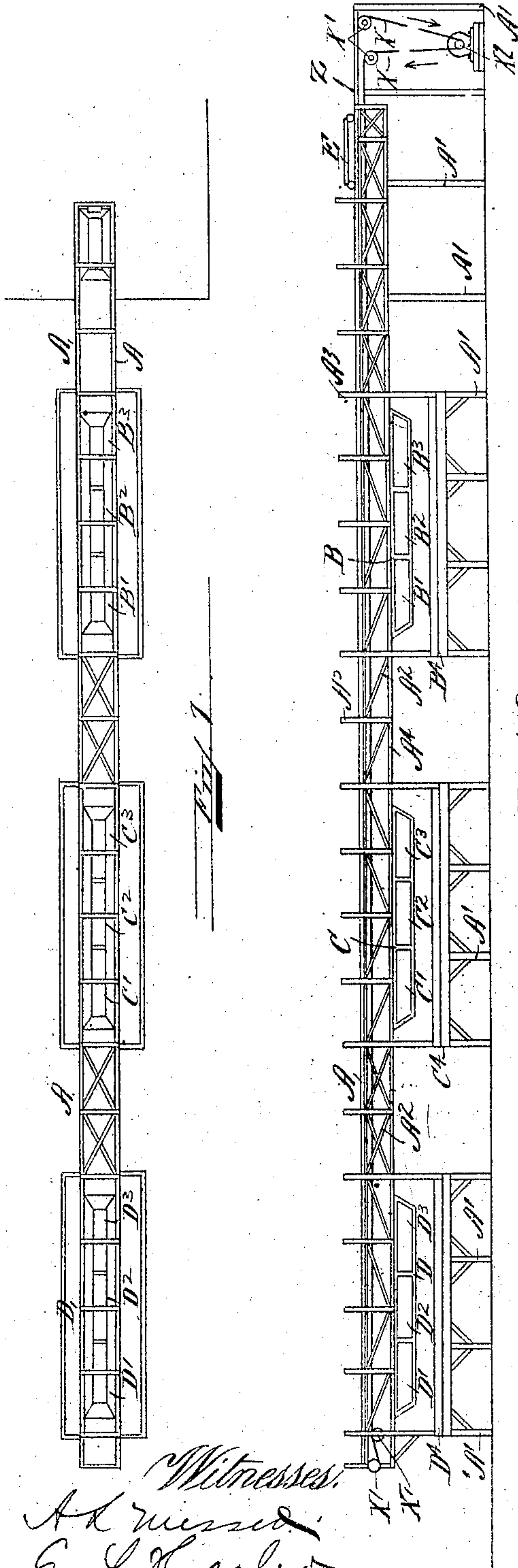
No. 869,296.

PATENTED OCT. 29, 1907.

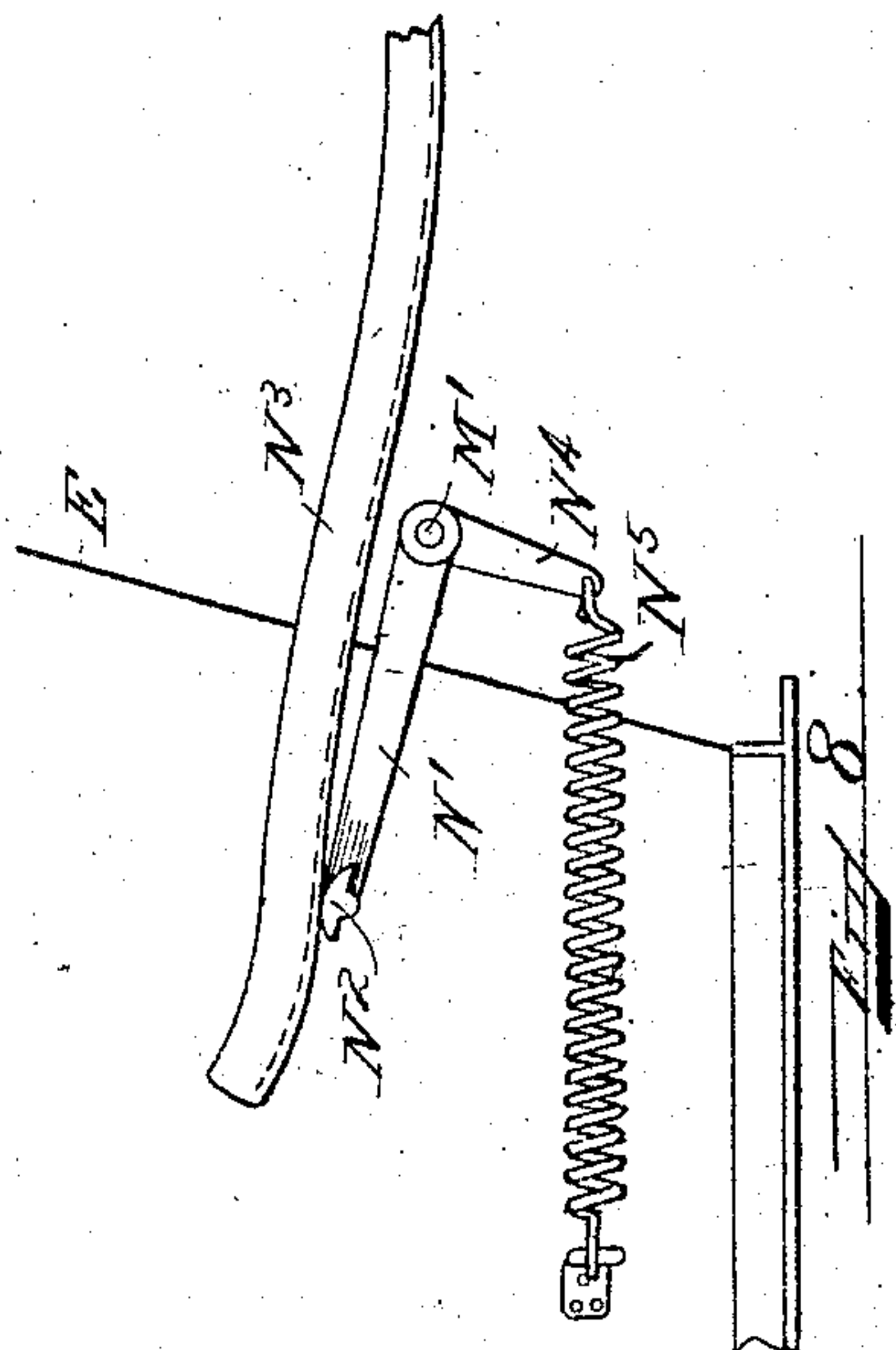
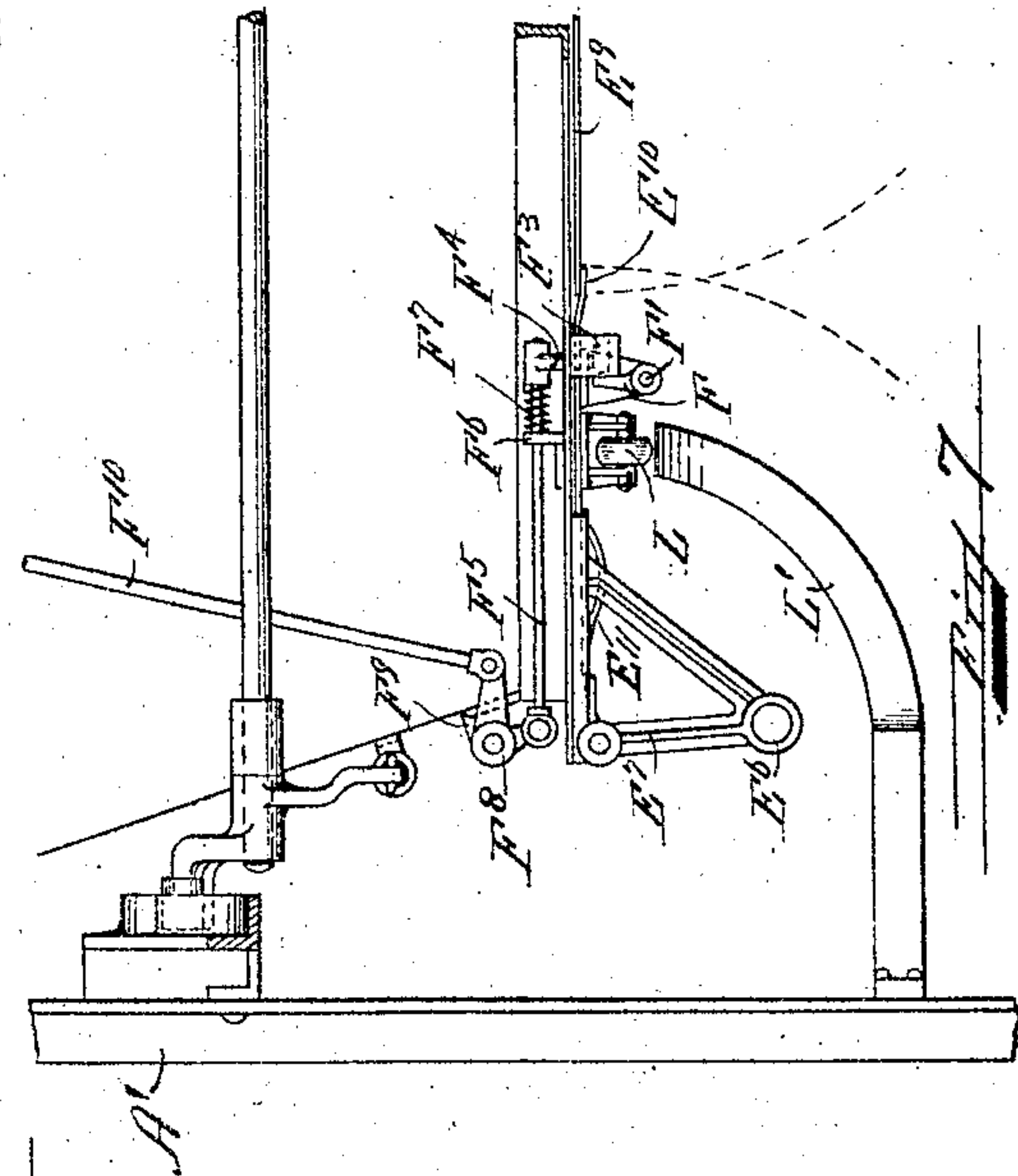
J. T. COWLEY.  
CONVEYING APPARATUS.

APPLICATION FILED JUNE 22, 1905.

3 SHEETS—SHEET 1.



Witnesses:  
Adm. signed:  
E. L. Carlson



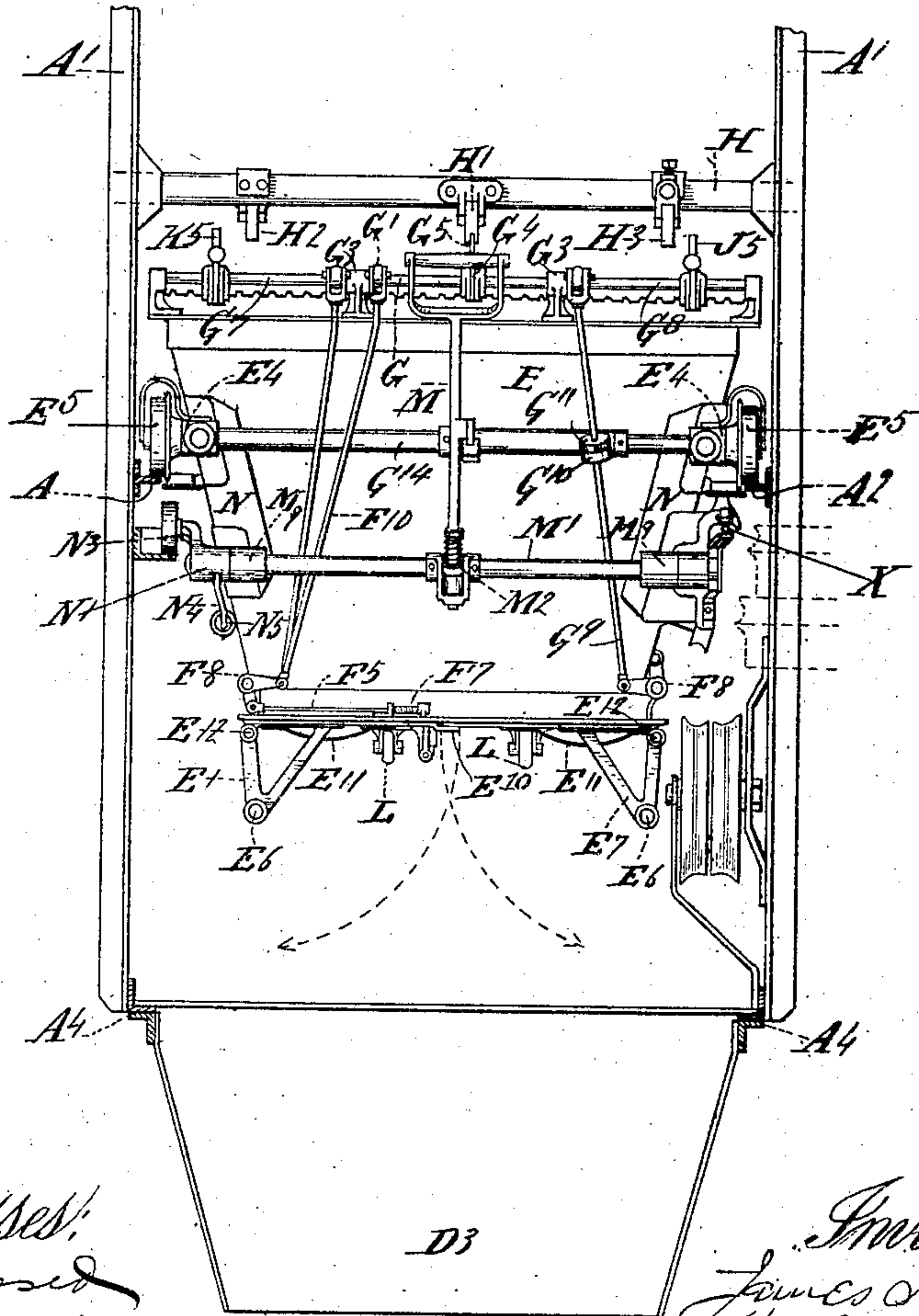
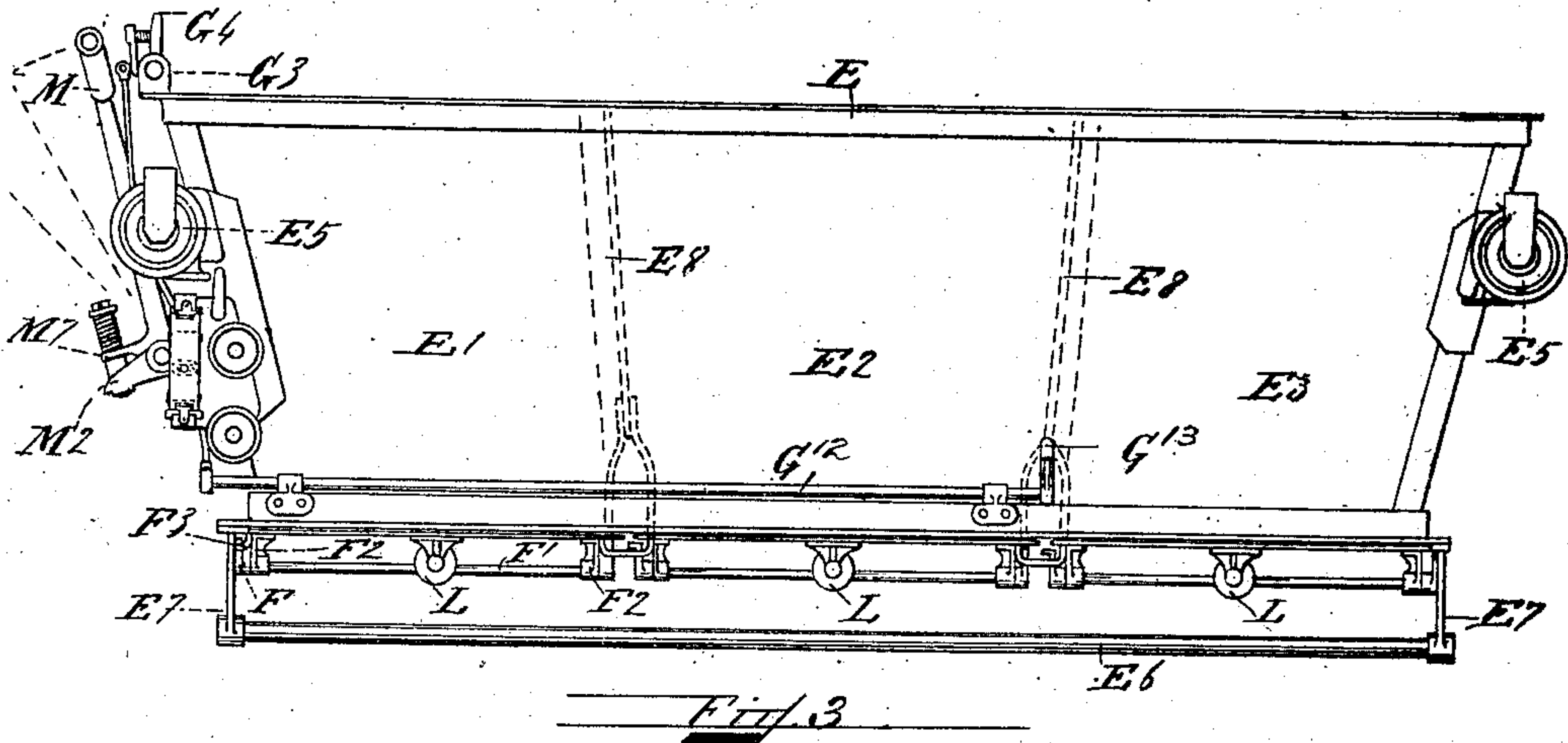
Inventor:  
J. T. Cowley  
By E. L. Carlson  
Attorney

No. 869,296.

PATENTED OCT. 29, 1907.

J. T. COWLEY.  
CONVEYING APPARATUS.  
APPLICATION FILED JUNE 22, 1905.

3 SHEETS—SHEET 2.



Witnesses:  
H. A. Russell  
E. L. Harlow

Inventor:  
James T. Cowley  
By C. E. Liguori  
J. A. Rush  
Attorney

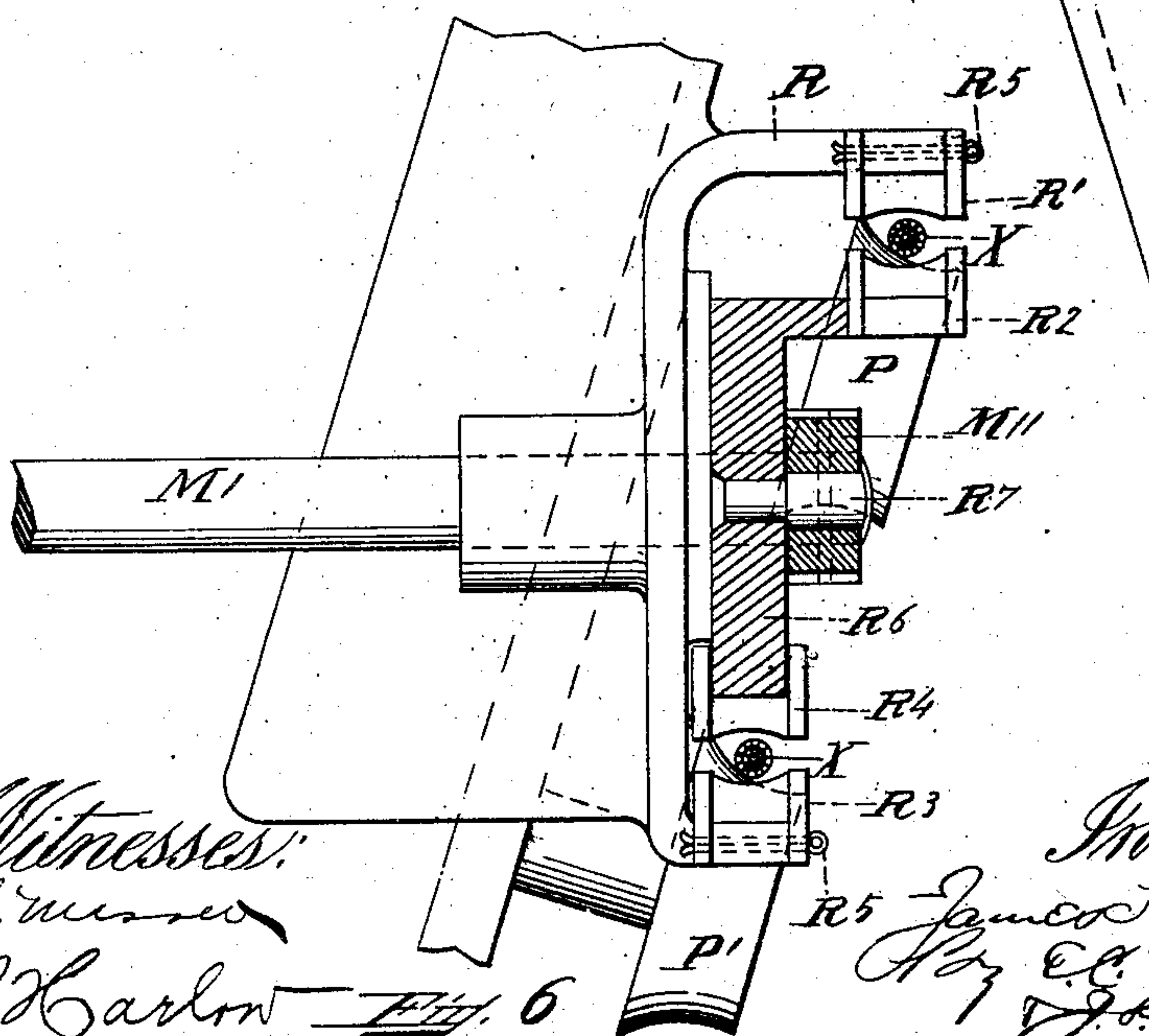
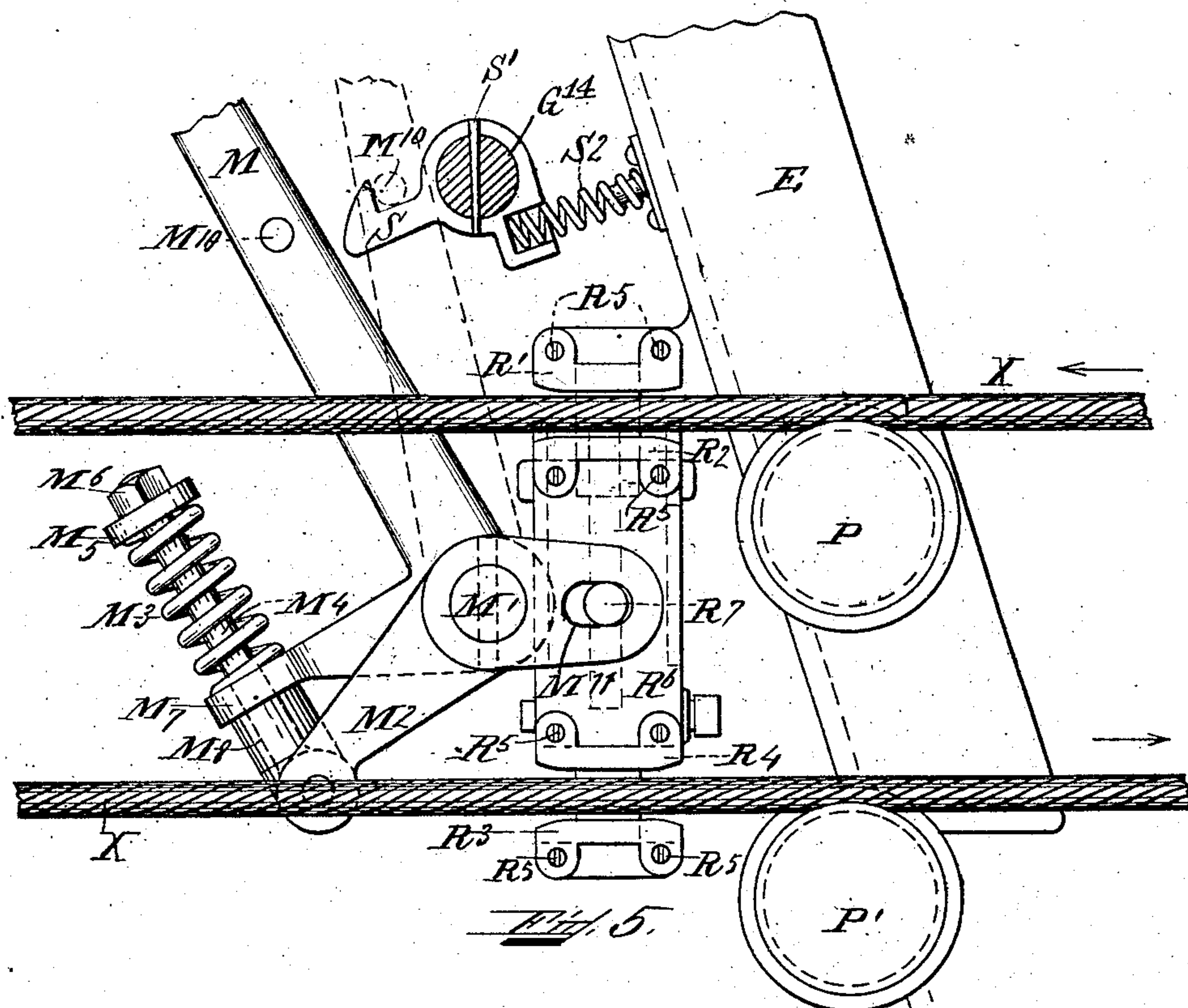


No. 869,296.

PATENTED OCT. 29, 1907.

J. T. COWLEY.  
CONVEYING APPARATUS.  
APPLICATION FILED JUNE 22, 1906.

3 SHEETS—SHEET 3.



Witnesses:  
Admrs  
E L Harlow July 6

R3  
Inventor:  
James T. Cowley  
By E. C. Sullivan  
J. R. Lusk  
Attys



# UNITED STATES PATENT OFFICE.

JAMES T. COWLEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## CONVEYING APPARATUS.

No. 869,296.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed June 22, 1905. Serial No. 266,394.

*To all whom it may concern:*

Be it known that I, JAMES T. COWLEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in

5 Conveying Apparatus, of which the following is a specification.

My invention relates to improvements in that class of conveying apparatus wherein an endless traveling cable is utilized to actuate a car or carrier traveling

10 upon tracks or guide rails, and is so constructed and combined as to enable a car or carrier to be loaded at a main or despatching station with several separate loads or consignments, and automatically deliver any of the

15 said loads or consignments independently to any of a series of stations located along the system.

This invention also provides for the automatic return of the empty carrier after delivering the last consignment.

In the accompanying drawings which illustrate a

20 construction embodying my invention, Figure 1 is a plan view of the machine. Fig. 2 is a side elevation of same. Fig. 3 is a side elevation of the carrier. Fig. 4 is an end view in elevation of the carrier. Fig. 5 is an enlarged side elevation of cable-gripping mechanism.

25 Fig. 6 is an enlarged section of same. Fig. 7 is an end elevation showing door-closing and cable-reversing cams. Fig. 8 is an enlarged side elevation of cable-reversing cam.

Like letters of reference refer to like parts throughout

30 the several views.

The tracks A are fixed to the supports A' which also carry the longitudinally mounted rails A<sup>4</sup>, and the standards A<sup>3</sup> and diagonal braces A<sup>2</sup> fixed upon the said rails A<sup>4</sup> support the tracks A. The hoppers B, C

35 and D are fixed to the rails A<sup>4</sup> and each hopper is divided into three compartments. The tables B<sup>4</sup>, C<sup>4</sup> and D<sup>4</sup> mounted on the supports A' are located under the hoppers B, C and D respectively. The endless cable X is mounted on the pulleys X' and is driven

40 by the motor X<sup>2</sup>. The carrier E (Fig. 3) carries the shaft G<sup>14</sup> fixed in the extensions E<sup>4</sup> upon which shaft are mounted the flanged wheels E<sup>5</sup> adapted to travel on the tracks A. The rods E<sup>6</sup> are longitudinally mounted in the brackets E<sup>7</sup> hung under each side of the carrier E. The carrier is divided into three compartments

45 E<sup>1</sup>, E<sup>2</sup> and E<sup>3</sup> by the partitions E<sup>8</sup>. The bottom of each compartment is divided into two swinging doors E<sup>9</sup> and E<sup>10</sup> which swing on the pivots E<sup>12</sup>, the doors E<sup>10</sup> overlapping the doors E<sup>9</sup>. The rods E<sup>6</sup> prevent the said doors from swinging outward too far and the force of contact therewith is checked by the springs E<sup>11</sup>. The catch F (Figs. 3 & 7) is fixed to the rod F<sup>1</sup> which is pivoted in the bearings F<sup>2</sup> fixed to the under side of the doors E<sup>10</sup>. The said catch F engages the latch F<sup>3</sup> holding the swing-

50 ing doors closed.

The pin F<sup>4</sup> is fixed to the rod F<sup>5</sup> which is longitudinally movable in the support F<sup>6</sup> which is fixed to the carrier E. The spring F<sup>7</sup>, mounted between the said support F<sup>6</sup> and the pin F<sup>4</sup>, holds the rod F<sup>5</sup> in an inward position. The outer end of the rod F<sup>5</sup> is pivoted

60 to the lower end of the bell crank lever F<sup>8</sup> which is pivoted to the extension F<sup>9</sup> on the carrier E. The other end of the bell crank lever F<sup>8</sup> is pivoted to the rod F<sup>10</sup>. The upper or bifurcated end of said rod F<sup>10</sup> is pivoted to the extension G<sup>1</sup> on the notched bar G

65 which is pivoted in the bearings G<sup>3</sup>. The spring clutch G<sup>4</sup> is adapted to engage any notch on the bar G, each notch designating a correspondingly numbered hopper. The projecting finger G<sup>5</sup> on the clutch G<sup>4</sup> is adapted to engage a trip finger H<sup>1</sup> fixed to the cross bar

70 H. The finger G<sup>5</sup> controls the discharging of the contents of the compartment E<sup>1</sup> into any of the nine hoppers. The finger J<sup>5</sup> controls similar mechanism for discharging compartment E<sup>3</sup>, and the finger K<sup>5</sup> controls the discharging of compartment E<sup>2</sup>.

75

Cross bars H are located over each compartment and fingers H<sup>1</sup>, H<sup>2</sup> and H<sup>3</sup> are consecutively staggered thereon to engage any of the fingers G<sup>5</sup>, K<sup>5</sup> or J<sup>5</sup> respectively, designating stations represented by said staggered fingers. The rolls L are journaled in bearings

80 on each swinging door E<sup>9</sup> and E<sup>10</sup> and are adapted to engage the door-closing cams L' which are fixed to the supports A'.

The hand lever M (Fig. 5) is pivoted on the bar M' and works in the yoke M<sup>2</sup> which is pinned to the said

85 bar M'. The spring M<sup>3</sup> mounted on the spindle M<sup>4</sup> and held thereon by the collar M<sup>5</sup> and the nut M<sup>6</sup> acts upon the extension M<sup>7</sup> of the lever M<sup>1</sup>, which forms an eye through which the spindle M<sup>4</sup> is mounted. The shoulder M<sup>8</sup> into which the lower end of the spindle M<sup>4</sup> is

90 fixed, is pivoted in the yoke M<sup>2</sup> and forms a backing for the extension M<sup>7</sup> of the hand lever M. The rod M' is pivoted in the bearings M<sup>9</sup> which are mounted on the blocks N attached to the car E. The lever N' (Fig. 8) is fixed upon the end of the rod M' at the side of the car

95 E and carries the shoe N<sup>2</sup> thereon. The finger N<sup>4</sup> on the lever N' is connected with the spring N<sup>5</sup> fastened to the side of the car E and which spring N<sup>5</sup> acts upon the said finger N<sup>4</sup>. The latch S is pinned to the shaft G<sup>14</sup> by the pin S' and is held outward by means of the

100 spring S<sup>2</sup> fastened to the carrier E. The slotted extension M<sup>11</sup> is fixed to the rod M' and carries movably mounted therein the pin R<sup>7</sup> fixed to the sliding grip R<sup>6</sup>. The stationary member R carries the grooved jaw R' fastened to the upper portion thereof by the cotter pins

105 R<sup>5</sup>, and the grooved jaw R<sup>3</sup> fastened to the lower portion thereof by the cotter pins R<sup>5</sup>. The grooved jaw R<sup>2</sup> is fixed to the upper portion of the sliding grip R<sup>6</sup> and the grooved jaw R<sup>4</sup> is fixed to the lower portion of the said sliding grip R<sup>6</sup> by the cotter pins R<sup>5</sup>. The grooved

110



rolls P and P' are mounted upon the side of the car E and support the cable X centrally between the jaws R' and R<sup>2</sup> and R<sup>3</sup> and R<sup>4</sup> preventing the cable from wearing when the carrier is idle.

- 5 The operation is as follows: The operator standing at the main or despatching station Z loads the carrier E, filling as many of the compartments E', E<sup>2</sup> and E<sup>3</sup> as desired, each with a separate consignment for any of the department stations located along the line. The operator then adjusts the clutch G<sup>4</sup> (Fig. 4) which clutch controls the discharging of the contents of the compartment E' of the carrier E into the notch representing the department station for which said contents are consigned. The clutch K<sup>5</sup> controlling the discharge of the contents of the compartment E<sup>2</sup> is then adjusted into the notch on the bar G<sup>7</sup> representing the department station to which said contents of compartment E<sup>2</sup> are consigned. The clutch J<sup>5</sup> controlling the discharge of the contents of compartment E<sup>3</sup> is then adjusted into the notch on the bar G<sup>8</sup> representing the department station to which the contents of compartment E<sup>3</sup> are consigned. The hand lever M is then pushed up until the pin M<sup>10</sup> engages the latch S and is held in the position indicated by dotted lines Fig. 5. The extension M<sup>7</sup> of the hand lever M in this position is forcing the spring M<sup>3</sup> against the collar M<sup>5</sup> forcing the yoke M<sup>2</sup> upwards by means of the rod M<sup>4</sup> fastened thereto. The yoke M<sup>2</sup> being fixed to the bar M' causes the slotted extension M<sup>11</sup> fixed to said bar M' to force the pin R<sup>7</sup> mounted in the sliding grip R<sup>6</sup> down, causing the grooved jaw R<sup>4</sup> fixed to said sliding grip R<sup>6</sup> to close the lower portion of the cable X between said grooved jaw R<sup>4</sup> and the grooved jaw R<sup>3</sup>. The spring M<sup>3</sup> furnishes the required tension by the grip upon the cable. The lower portion of the cable traveling in the direction indicated by the arrow impels the car E upon the tracks in the same direction. If the contents of compartment E' are consigned to the department station C<sup>2</sup>, the projecting finger H' mounted upon the cross bar H directly over said station C<sup>2</sup> engages the clutch G<sup>4</sup> causing the pivoted bar G to partly turn in the bearings G<sup>3</sup>, the extension G' mounted thereon forcing the rod F<sup>10</sup> down and throwing the rod F<sup>5</sup> back against the spring F<sup>7</sup> by means of the bell crank lever F<sup>8</sup>. The finger F<sup>4</sup> fixed to the rod F<sup>5</sup> now throws the catch F out of the latch F<sup>3</sup> causing the swinging doors E<sup>9</sup> and E<sup>10</sup> (Fig. 7) of the compartments E' to swing outward in the direction indicated by the dotted lines until they are checked by the buffer spring E<sup>11</sup> hitting against the rods E<sup>6</sup>. The contents of said compartment are discharged through the hopper C<sup>2</sup> and out upon the table C<sup>4</sup> directly under said hopper. The car continuing in the same direction, the rolls L mounted upon said doors E<sup>9</sup> and E<sup>10</sup> engage the cams L' said rolls riding upon said cams, the roll on the door E<sup>9</sup> in advance of the roll on the door E<sup>10</sup> until the doors are closed and the catch F' engages the latch F<sup>3</sup> holding the said doors closed, the pin F<sup>4</sup> in the meantime, having resumed its normal position by means of the spring F<sup>7</sup> acting thereon after the finger G<sup>5</sup> of the clutch G<sup>4</sup> has passed the trip H'. The load in compartment E<sup>2</sup> may be similarly discharged by the clutch K<sup>5</sup> engaging the finger H<sup>2</sup> at the designated station, and the operation repeated, as heretofore described. The contents of the compartment E<sup>3</sup> being consigned to department station D', the clutch J<sup>5</sup> engages the trip H<sup>3</sup>

mounted on the bar H over said station, causing the pivoted bar G<sup>8</sup> to turn, forcing the rod G<sup>9</sup> downward and releasing the doors E<sup>9</sup> and E<sup>10</sup> of the compartment E<sup>3</sup> by means of the bell crank lever F<sup>8</sup> acting upon the rod G<sup>12</sup> throwing the pin G<sup>13</sup> fixed thereto against the catch F releasing the same. The collar G<sup>11</sup> fixed to the rod G<sup>9</sup> throws the collar G<sup>10</sup> fixed to the shaft G<sup>14</sup> down releasing the latch S from the pin M<sup>10</sup> forcing the hand lever M acted upon by the spring N<sup>5</sup> downwards. The slotted extension M<sup>11</sup> acting upon the pin R<sup>7</sup> throws the jaw R<sup>4</sup> releasing the lower part of the cable X until the upper grooved jaw R<sup>2</sup> grips the upper portion of the cable X between said grooved jaw R<sup>2</sup> and the grooved jaw R'. The car E now returns with the upper portion of the cable X in the direction indicated by the arrow until it reaches the main or despatching station. The shoe N<sup>2</sup> on the lever N' fixed on the rod M' at the side of the car E now engages the cam N<sup>3</sup> forcing the lever N' down until the rod M' throws the hand lever M upward and the slotted extension M<sup>11</sup> acting upon the pin R<sup>7</sup> causes the grooved jaw to release the cable and the said pin R to assume a central position between the upper and lower portion of the cable. The car E now comes to a standstill and the operation may be repeated.

Having thus described 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 framework, tracks mounted in said framework, a carrier adapted to travel on said tracks, an endless cable mounted in said framework and adapted to actuate said carrier, means for driving said cable, a despatching station, a receiving station, means for automatically discharging the contents of said carrier into said receiving station, and means for automatically reversing said carrier upon said tracks and returning it to said despatching station after discharging said contents.
2. In a conveying apparatus, a framework, tracks mounted in said framework, a carrier adapted to travel on said tracks, an endless cable mounted in said framework and adapted to actuate said carrier, means for driving said cable, a despatching station, a series of receiving stations, means for automatically discharging the contents of said carrier into any one of said receiving stations, and means for automatically reversing said carrier upon said tracks and returning it to said despatching station after discharging said contents.
3. In a conveying apparatus, a framework, tracks mounted in said framework, a carrier adapted to travel on said tracks, a plurality of compartments in said carrier, an endless cable mounted in said framework and adapted to actuate said carrier, means for driving said cable, a despatching station, a series of receiving stations, means for automatically discharging the contents of any one of said compartments into any one of said receiving stations, and means for automatically returning said carrier to said despatching station after discharging the contents of said compartments.
4. In a conveying apparatus, a track, a carrier adapted to travel on said track, an endless cable adapted to actuate said carrier, a despatching station, a receiving station, hand operated gripping means located on said carrier for gripping the forward moving portion of said endless cable, means for locking said hand operated gripping means in position, means for automatically discharging the contents of said carrier into said receiving station, means for automatically releasing said locking means after discharging said contents, spring actuated means for gripping the returning portion of said endless cable, and means located at said despatching station adapted to engage said spring actuated means for releasing the grip on said cable and stopping said carrier.



5. In a conveying apparatus, a track, a carrier adapted to travel on said track, an endless cable adapted to actuate said carrier, a despatching station, a series of receiving stations, a plurality of compartments in said carrier, means for predetermining the receiving station at which the contents of any one of said compartments shall be discharged, hand-operated gripping means located on said carrier for gripping the forward-moving portion of said endless cable, means for locking said hand-operated gripping means in position, means for automatically discharging the contents of said compartments into their predetermined receiving stations, means for automatically releasing said locking means after discharging the contents of the last compartment, spring-actuated means for gripping the returning portion of said endless cable, and means located at said despatching station adapted to engage said spring-actuated means for releasing the grip on said cable and stopping said carrier.

6. In a conveying apparatus, a way, a carrier adapted to travel on said way, an endless cable for actuating said carrier, means for driving said cable, gripping means located on said carrier for engaging said cable, means for unlocking said gripping means whereby said cable is released from said gripping means and for gripping the returning portion of said cable whereby the travel of the carrier is reversed upon the way.

7. In a conveying apparatus, a way, a carrier adapted to travel on said way, an endless cable for actuating said carrier, means for driving said cable, gripping means located on said carrier for engaging said cable, manually-operated means for locking said gripping means, and means for automatically releasing said locking means whereby said cable is released from said gripping means and for gripping the returning portion of said cable whereby the travel of the carrier is reversed upon the way.

8. In a conveying apparatus, a framework, tracks mounted on said framework, a carrier adapted to travel on said tracks, an endless cable mounted in said framework

and adapted to actuate said carrier, means for driving said cable, gripping means located on said carrier for engaging the forward-moving portion of said cable, means for locking said gripping means, and means located at the terminus of said tracks for automatically releasing the forward-moving portion of said cable and for gripping the returning portion of said cable whereby the travel of said carrier is reversed upon said tracks.

9. In a conveying apparatus, a framework, tracks mounted on said framework, a carrier adapted to travel on said tracks, an endless cable mounted in said framework and adapted to actuate said carrier, means for driving said cable, gripping means located on said carrier for engaging the forward-moving portion of said cable, means for locking said gripping means, means located at the terminus of said tracks for automatically releasing the forward moving portion of said cable and for gripping the returning portion of said cable whereby the travel of said carrier is reversed upon said tracks, and means for automatically disengaging said gripping means from the returning portion of said cable when a carrier has arrived at the opposite end of the track.

10. In a conveying apparatus, a track, a carrier adapted to travel on said track, an endless cable adapted to actuate said carrier, means for driving said cable, gripping means located on said carrier for engaging the forward-moving portion of said cable, manually-operated means for locking said gripping means, and means located at the terminus of said track for automatically releasing the forward-moving portion of said cable and for gripping the returning portion of said cable whereby said carrier is reversed upon said tracks.

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

JAMES T. COWLEY.

Witnesses:

WILLIAM WILCOX,  
WILLARD A. MARCY.