No. 756,551. PATENTED APR. 5, 1904.

L. ABRAHAM.

TERMINAL FOR PARCEL CONVEYERS.

APPLICATION FILED NOV. 5, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

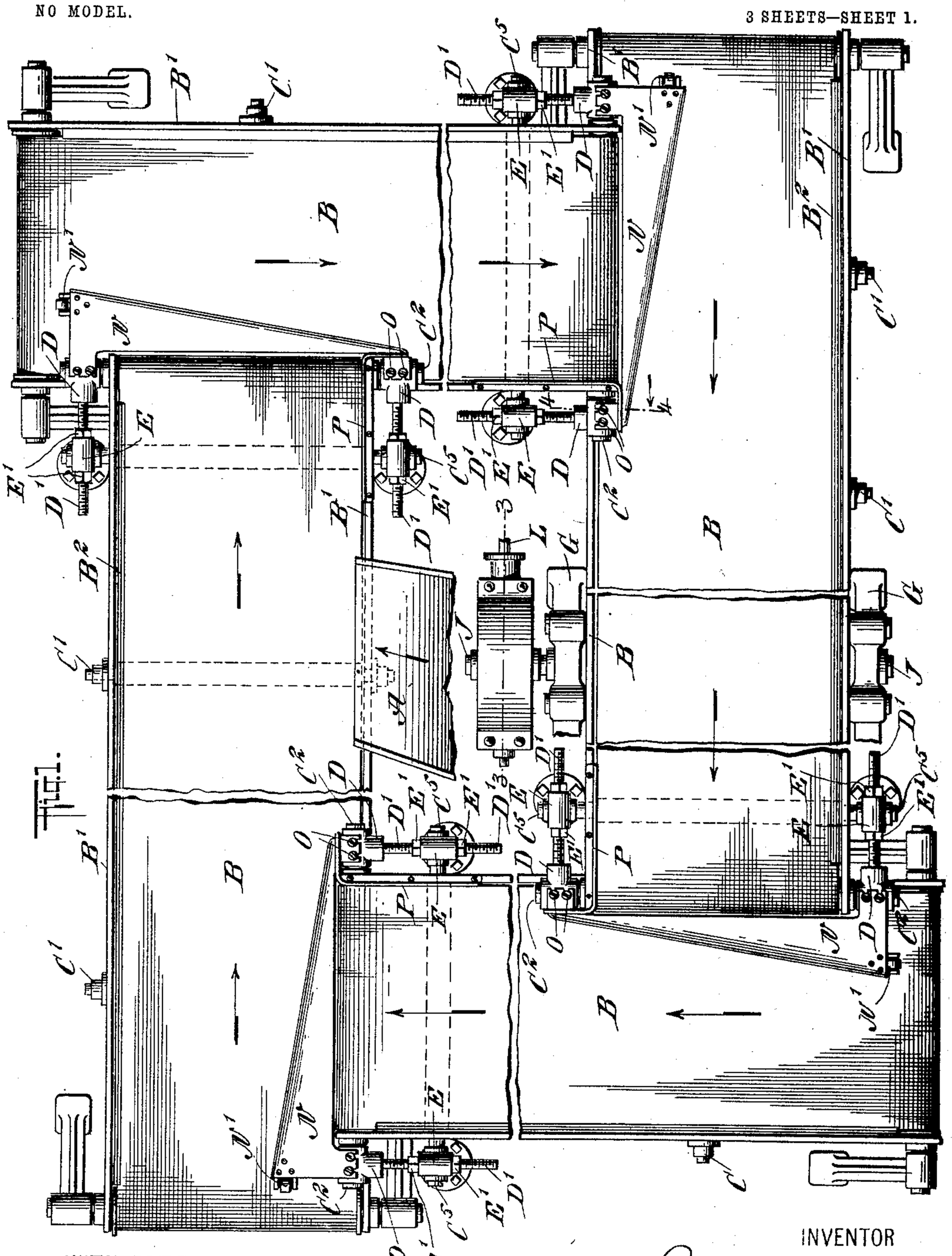

Fig. 1.

WITNESSES

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NO MODEL. 3 SHEETS—SHEET 2.

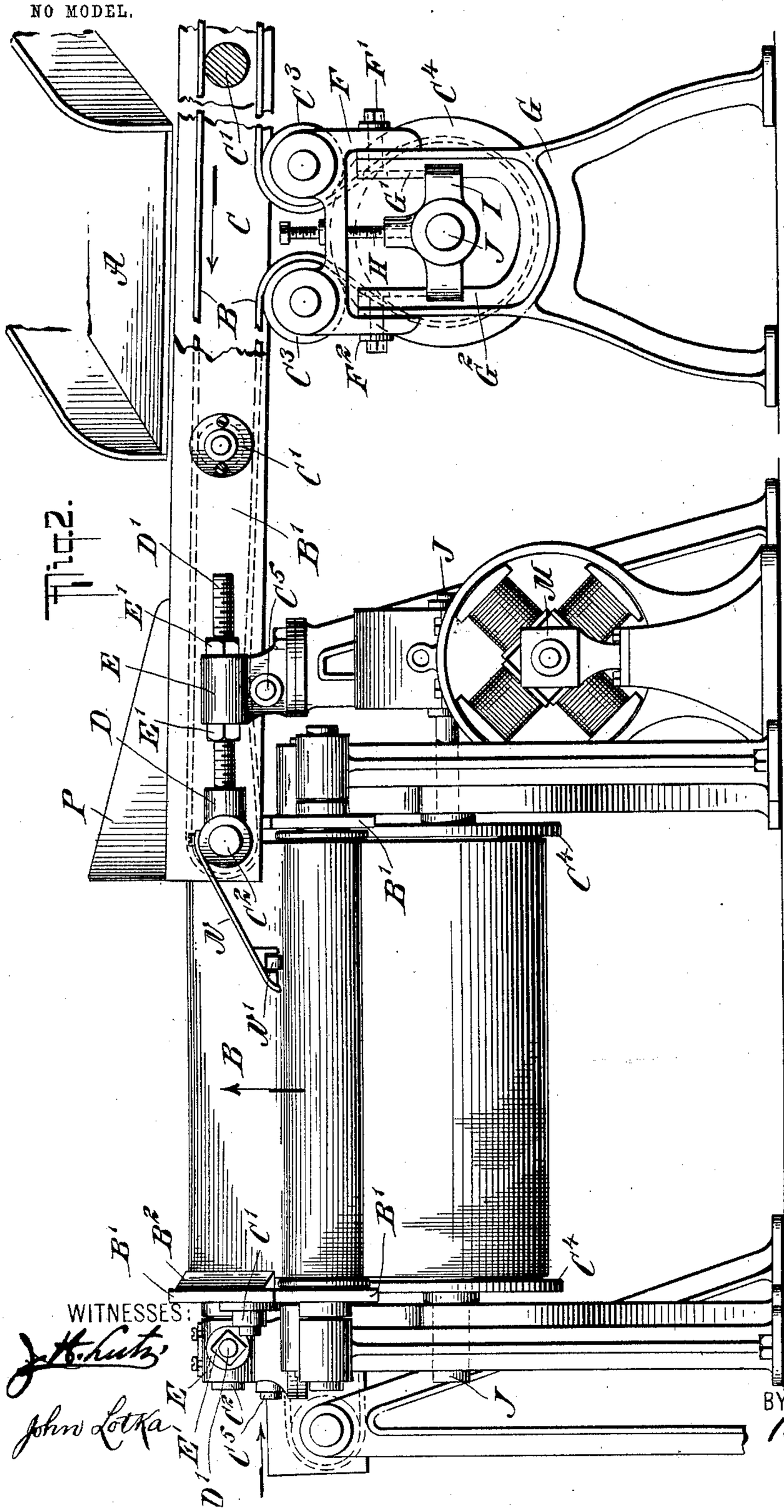

Fig. 2.

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NO MODEL. 3 SHEETS—SHEET 3

Fig. 3.

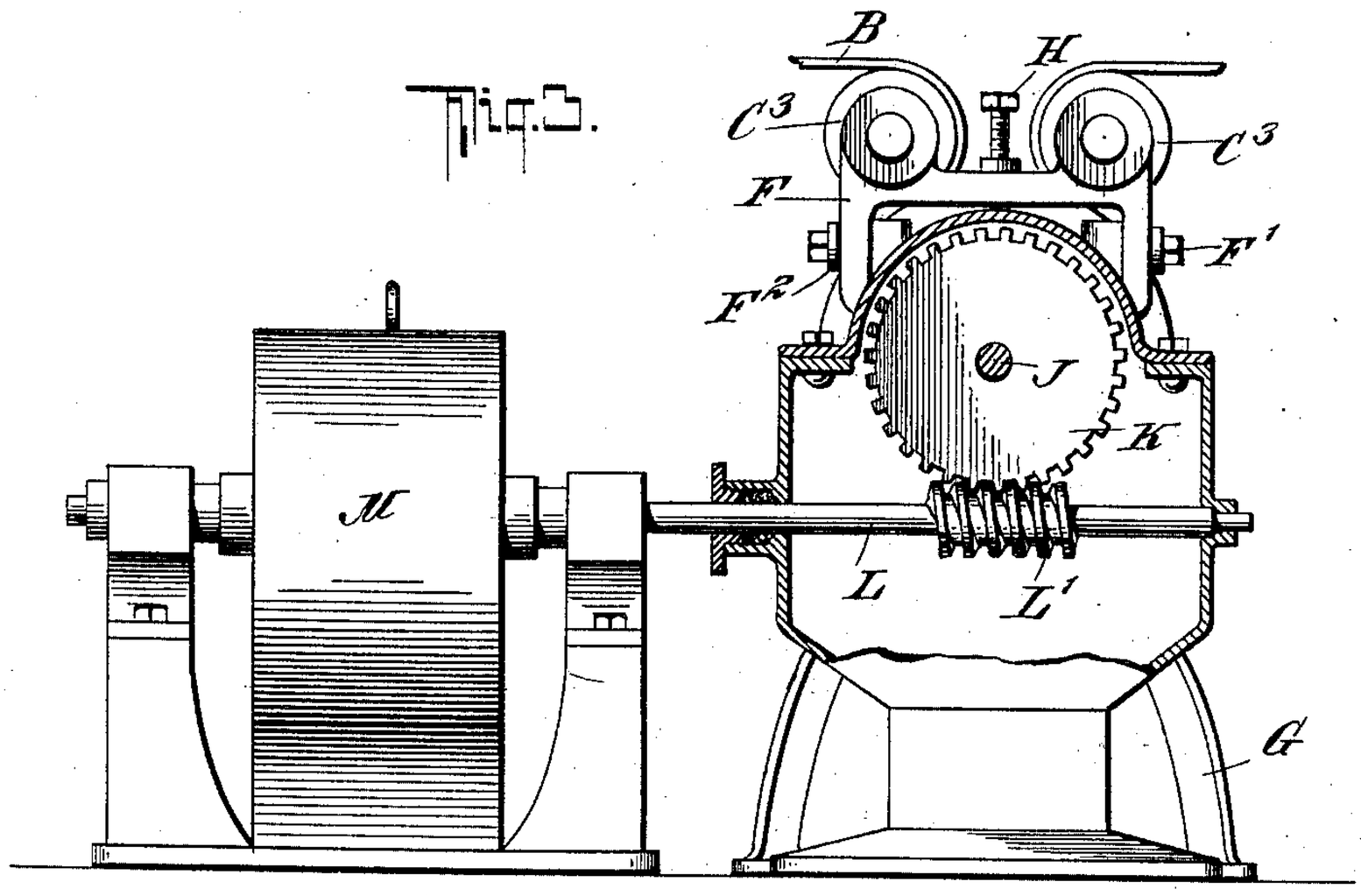
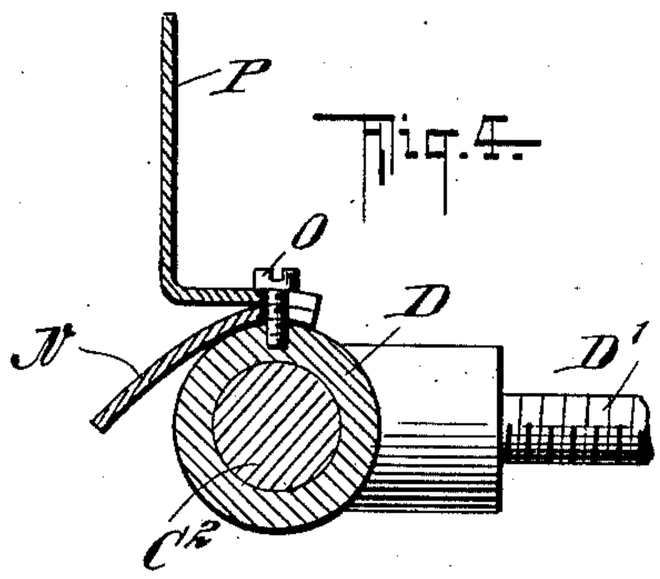


Fig. 4.



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UNITED STATES PATENT OFFICE.

LAWRENCE ABRAHAM, OF NEW YORK, N. Y.

TERMINAL FOR PARCEL-CONVEYERS.

SPECIFICATION forming part of Letters Patent No. 756,551, dated April 5, 1904.

Application filed November 5, 1903. Serial No. 179,893. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE ABRAHAM, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Terminals for Parcel-Conveyers, of which the following is a specification.

My invention relates to terminals for parcel-conveyers—that is, to that portion of a conveying apparatus from which the parcels are taken off by the attendants to be distributed for shipment, as by placing them in various bins.

In parcel-conveyers as heretofore constructed the parcels have been allowed to accumulate at the end or terminal of the apparatus, and considerable delay and confusion is often the result of this arrangement.

My present invention has for its object to overcome the above-indicated defect by keeping the parcels moving in a continuous endless path, in which said parcels will travel over and over again until they are removed by the attendants. The accumulation of parcels in a heap is thus efficiently avoided and at the same time the distribution of the parcels is facilitated and expedited.

I will now describe a practical embodiment of my invention with reference to the accompanying drawings and will then point out the novel features in the appended claims.

Figure 1 is a plan of the improved terminal with parts broken away. Fig. 2 is an elevation of a portion of the terminal with parts in section. Fig. 3 is an elevation with parts in section on line 3 3 of Fig. 1. Fig. 4 is a sectional detail on line 4 4 of Fig. 1.

The parcels are conveyed to the terminal in any suitably way—as, for instance, by means of inclined chutes, one of which is indicated at A, it being understood that in practice there will be a greater number of such chutes or feeders.

The terminal consists of an endless movable track or carrier for the parcels which are supplied by the chute A or other feeder. In the particular instance shown the moving track consists of the upper runs of four belts arranged substantially in the form of a rectangle and each so located as to discharge the parcels at one end upon the receiving portion of the next conveyer-belt. Preferably the conveyers are upwardly inclined toward their delivery ends, and there are also provided adjacent to such ends devices for properly supporting the parcels in their movement when dropped onto a belt.

Other details of the invention will appear from the description presently to be given.

The four conveyer-belts B are constructed of any suitable material, and while I have shown them as continuous aprons I do not wish to restrict myself to such construction. In order to prevent the parcels from working off the belts laterally, I have provided stationary stops or guides B′, extending along the upper runs of the conveyers B, as shown in Figs. 1 and 2. In the construction shown the chute A is arranged to deliver the parcels from the inside of the rectangular space inclosed by the conveyers, and the attendants who remove the parcels from the conveyers are supposed to step up to the conveyers from the outside. In order to facilitate the removal of the parcels and to protect the fingers of the operators from injury, I may provide guards B^2, overlapping the conveyers. The delivery end of each conveyer is preferably arranged to slightly overlap a portion of the next conveyer, (see Fig. 2,) and I also prefer to incline the upper run of each conveyer lengthwise, so that a continuous path is afforded. The manner of supporting and operating the conveyers may be varied considerably. In the drawings I have shown a frame C, with intermediate rollers or bars C′ for supporting the conveyer between its ends, end rollers C^2, central rollers C^3, and a driving-roller C^4. As shown in Fig. 2, the rolls at one end are carried by bearings D, which are adjustable lengthwise, as by means of screws D′, passing loosely through stationary brackets E and held in place after adjustment by nuts E′. The central rollers C^3 are preferably adjustable relatively to the driving-roller C^4—for instance, by making the double track F vertically adjustable on the support G by means of screws F′, working in slots G′ and nuts F^2. The driving-roller C^4 may itself be adjusted, as by means

of a screw H, working in the double track F and arranged to shift the bearings I up or down on suitable guides G^2, forming part of the support G. It will be readily understood that these adjustments permit of regulating the tension of the conveyer-belts B. Small rollers C^5 are provided near the ends to support the lower runs of the conveyers.

The shaft J, on which the driving-roller C^4 is mounted, also carries a worm-wheel K in mesh with a worm L′ upon a shaft driven in any suitable manner. For instance, the shaft L may be the shaft of an electric motor M. I prefer to provide a separate motor for each of the conveyer-belts.

At the point where each of the conveyer-belts is arranged to deliver the parcels to the next belt I provide a stationary guide N, preferably inclined, as shown in Fig. 2, so as to cause the parcels to slide down from one belt to the next. This guide may be provided with a roller N′, adapted to engage the upper run of the rear belt, which lies immediately below said guide. I also prefer to arrange the lower edge of said guide at an angle to the direction in which the lower belt B moves, as shown in Fig. 1, so that after a parcel has fallen on the lower belt it will be carried along without rubbing against the edge of the guide N. This guide is secured in any suitable manner. For instance, it may be fastened to the bearings D by screws O, which also serve to secure an angular or L shaped guide or deflector P, a portion of which extends along the inner edge of the upper belt, while its end is bent at a right angle to extend practically in line with the delivery end of the upper part. The purpose of these deflectors is to prevent any parcel from being thrown off the upper belt, as might happen in the case of a large parcel, which would still rest partly on the upper belt at the time that the lower belt is beginning to carry the parcel in a direction at a right angle to the first path of said parcel.

The conveyers may be fed continuously or intermittently, as desired. In any event all the parcels which are deposited on any one of the conveyers will be caused to circulate in a continuous path, so that they will periodically pass at the same point of the circuit until they are removed by the attendants. If, therefore, the attendants are unable for a time to remove the parcels, such parcels will not accumulate at any point, but will be distributed over the entire moving path or circuit and will be kept moving in said circuit, so that each parcel will at definite intervals of time pass in front of the same point, thus enabling the operator for whom it is intended to take such parcels off, either the first time it passes his stand or the second or the third, as may be most convenient. Not only is a crowding of the parcels and injury to them avoided, but as the parcels remain plainly visible their sorting is materially expedited, and all delays which might result from a parcel being covered by others or removed to some general storage or dumping place are efficiently avoided.

I claim as my invention—

1. In a parcel-conveying apparatus a terminal for receiving parcels, the said terminal comprising an endless movable track for causing the parcels to circulate over and over again in the same circuit until they are removed.

2. In a parcel-conveying apparatus a terminal for receiving parcels, the said terminal consisting of a series of conveyers, one arranged to deliver the parcels to the next, the said conveyers forming an endless chain or complete circuit.

3. A parcel-terminal comprising a series of movable conveyers forming a complete circuit for the parcels, the delivery end of each conveyer overlapping the receiving portion of the next conveyer.

4. A parcel-terminal comprising a series of conveyers inclined lengthwise and each having its upper delivery end arranged to overlap the receiving portion of the next conveyer, the said conveyers forming a complete circuit.

5. A parcel-terminal comprising four conveyers disposed in rectangular arrangement and each adapted to receive parcels at one end from one of the adjacent conveyers and to deliver parcels at the other end to the other adjacent conveyer, so that the parcels are caused to circulate in a continuous path.

6. In a parcel-conveying apparatus the combination with two conveyers arranged at an angle to each other, and one of them having its delivery end at a higher level than the receiving portion of the other conveyer, of an inclined guide extending from said delivery end to the surface of the conveyer below, that edge of said guide which extends lengthwise to the lower conveyer, being inclined away from the direction in which the lower conveyer moves, so as to be divergent from said direction.

7. In a parcel-conveying apparatus the combination with two conveyers arranged at an angle to each other, of a guide disposed at the delivery end of one conveyer and having its free edge inclined away from the direction in which the other conveyer moves so as to be divergent from said direction.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LAWRENCE ABRAHAM.

Witnesses:

JOSEPH KUNRENTHER,

HENRY WILHELM.