No. 884,240. PATENTED APR. 7, 1908.

W. C. THORNTON.

MAIL HANDLING APPARATUS.

APPLICATION FILED JAN. 14, 1908.

2 SHEETS—SHEET 1.

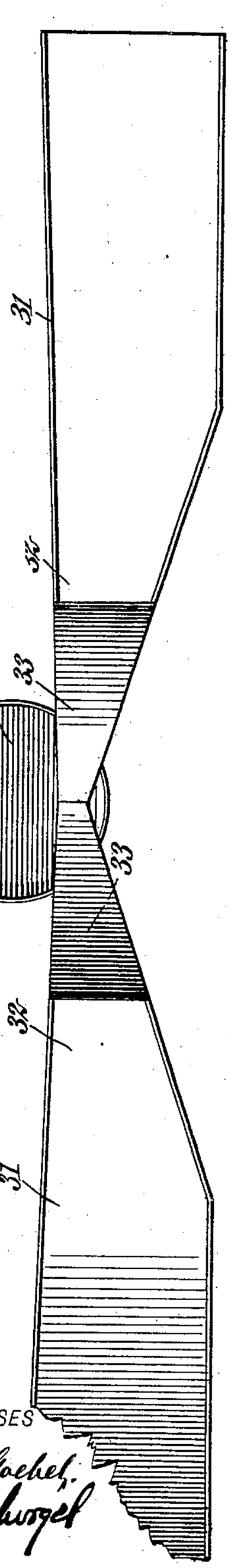

Fig. 1.

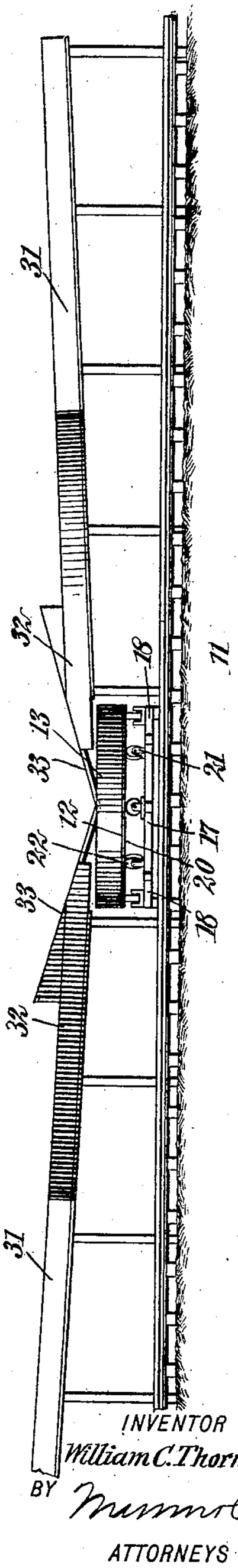

Fig. 2.

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Fig. 3.

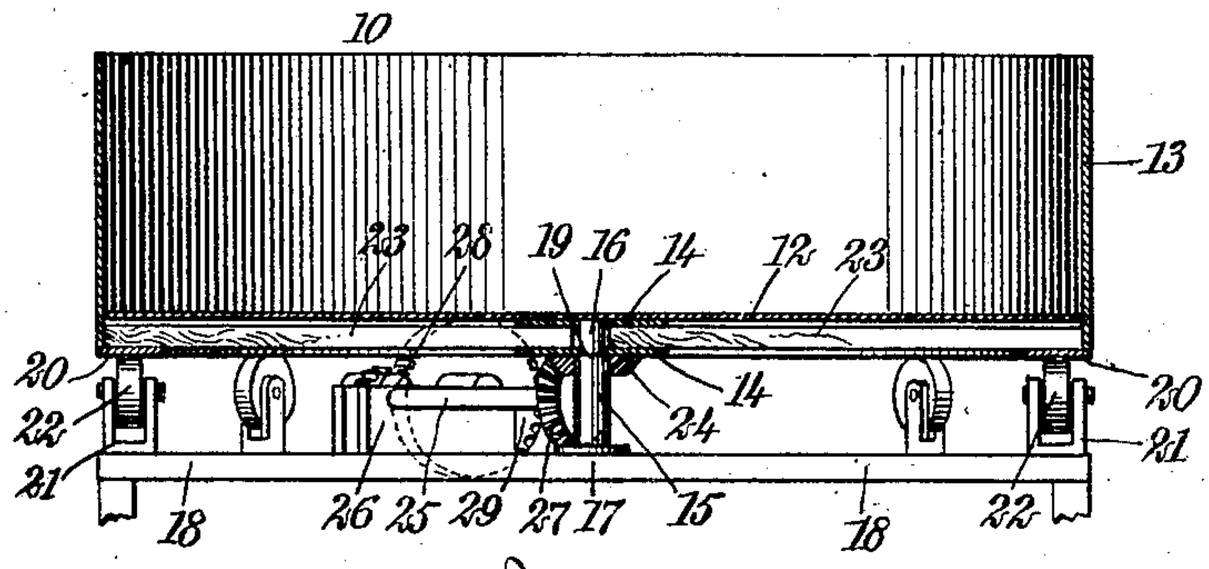


Fig. 4.

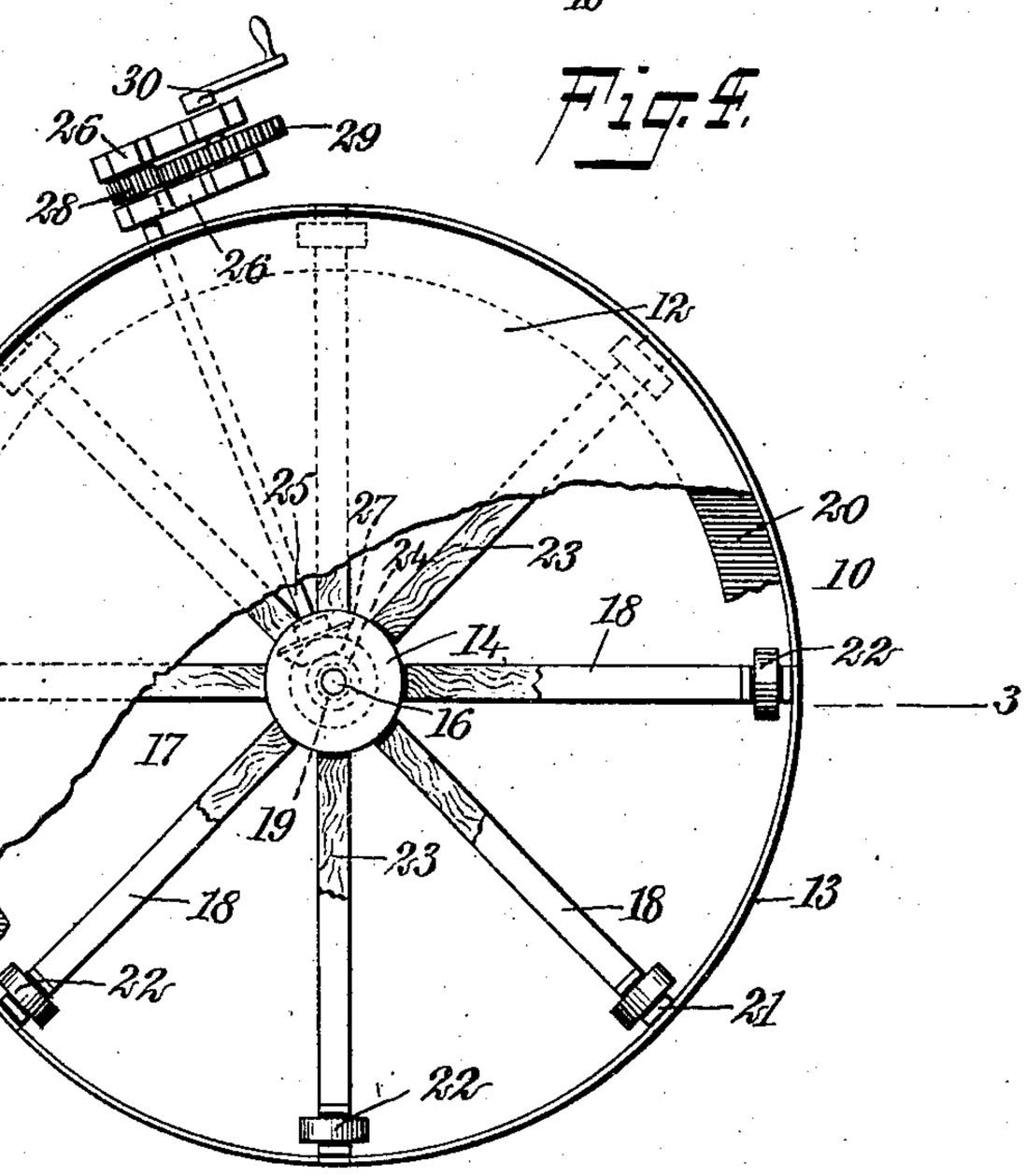
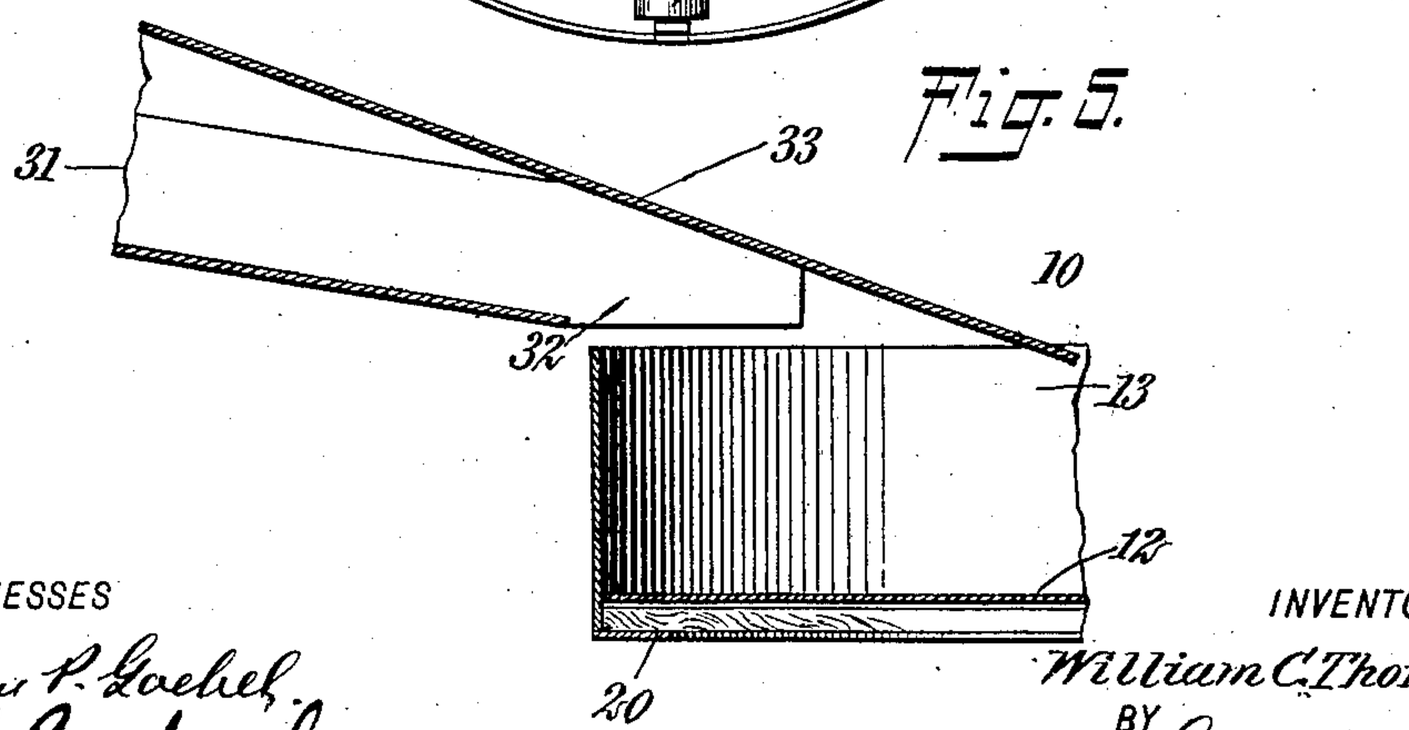


Fig. 5.



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MAIL-HANDLING APPARATUS.

No. 884,240. Specification of Letters Patent. Patented April 7, 1908.

Application filed January 14, 1908. Serial No. 410,723.

To all whom it may concern:

Be it known that I, WILLIAM C. THORNTON, a citizen of the United States, and a resident of Jefferson City, in the county of Cole and State of Missouri, have invented a new and Improved Mail-Handling Apparatus, of which the following is a full, clear, and exact description.

This invention relates to mail handling apparatus and more particularly apparatus of this type for delivering mail bags from moving trains.

An object of the invention is to provide a simple, strong and efficient mail handling apparatus for delivering mail bags and similar objects from moving trains, in such manner that injury and excessive wear of the mail bags is obviated, and by means of which the delivery can be effected from trains moving at high rates of speed.

A further object of the invention is to provide mail handling apparatus comprising a movable receiver, which can be actuated so that the mail bag, when delivered to the receiver, falls upon the latter when it is moving at a rate of speed approximating that of the train, so that there is no sudden arresting of the momentum acquired by the bag.

A still further object of the invention is to provide an apparatus of the class described, comprising a movable receiver, chutes for delivering mail and other objects to the receiver, from a moving train, and means for actuating the receiver so that when the mail bag falls thereupon, the receiver is moving in the same direction, and at a rate of speed approximately that of the train, whereby the momentum of the bag can be gradually overcome by slowly bringing the receiver to a stop.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which

Figure 1 is a plan view showing a section of a railway track, with my invention at the side thereof; Fig. 2 is a longitudinal elevation of the apparatus; Fig. 3 is an enlarged longitudinal section of the receiver, on the line 3—3 of Fig. 4; Fig. 4 is a plan view of the receiver, showing the floor thereof broken away; and Fig. 5 is an enlarged longitudinal section showing a portion of the receiver and a portion of one of the delivery chutes.

Before proceeding to a more detailed explanation of my invention, it should be understood that while it is particularly useful for delivering mail bags from rapidly moving trains, it can also be used in connection with the delivery of other objects from moving carriers, for example, the delivery of packages from traveling vans, and the delivery of material from moving conveyers. It has been found that in delivering mail bags from trains moving at high rates of speed, the wear and tear of the bags incident to the throwing of the same upon station platforms and the like, is excessive. Furthermore, it is a difficult matter properly to catch or receive the bags, which often weigh as much as two hundred pounds each, owing to the great momentum which the bags acquire from the moving trains. To obviate these difficulties I provide a receiver which can be actuated so that the bag falls upon the moving receiver, which is afterwards brought to a stop, so that the momentum of the bag is gradually arrested. I provide chutes which taper to the receiver, and upon which the bags can be thrown, to slide of their own momentum to the receiver, the chutes offering practically no resistance to their progress. The arrangement is such that the bags can be delivered from trains moving in opposite directions.

Referring more particularly to the drawings, the receiver 10 of my invention is arranged adjacent to a railroad or other track 11. The receiver comprises, preferably, a substantially circular platform 12 having arranged at the periphery, a cylindrical side wall 13. The receiver, as well as chutes which will be described hereinafter, may be fashioned from any suitable material such as sheet metal or the like. The platform 12, at the under side, near the center, has separated plates 14 provided with openings to receive a constricted part 16 of a pivot member 15. The pivot member 15 is mounted at the center of a support 17 having arms 18 radiating from the center. At the junction of the constricted part 16 with the pivot member 15 is formed a shoulder 19, which engages at

the under face of the lower plate 14. In this way, the platform is rotatably mounted upon the pivot member.

The side wall 13 of the receiver is extended below the platform and is inwardly disposed to form an annular track 20. Near the ends, the arms 18 have bearing brackets 21 which carry the rollers 22, engaging at the track 20 to support the platform movably. Floor beams 23 have the inner ends arranged between the plates 14 and extend toward the rim of the platform to engage between the track and the bottom of the platform.

A bevel gear 24 is movably mounted upon the pivot member 15 and is rigid with the lower plate 14. A shaft 25 is journaled in the sides 26 of a frame arranged adjacent to the platform and has a bevel gear in mesh with the bevel gear 24. Between the sides 26, the shaft 25 has a pinion 28 in mesh with a gear wheel 29 also revolubly carried between the sides of the frame. A hand crank 30 rigid with the gear wheel, permits its manual operation.

Chutes 31 are arranged at each side of the receiver, substantially parallel to the length of the track. The chutes have tapered sections 32 adjacent to the receiver and terminating near the receiver at the side thereof adjacent to the track. The chutes are open, and at the delivery ends have covers 33, each inclined downward toward the receiver and projecting beyond the ends of the chutes. The covers insure that the bags or other objects sliding along the chutes fall upon the receiver, and for this purpose extend over the receiver rim and slant downward nearly to the center of the receiver.

When an object is to be delivered to the receiver from a train moving along the track, the receiver is actuated by means of the hand crank 30, so that it has a peripheral movement adjacent to the track, in the same direction as the train. The speed of the rotation of the receiver is regulated so that its speed near the periphery is approximately equal to the speed of the train. The mail bag is thrown from the train upon the chute first reached by the train, and the momentum of the bag carries it along the chute to the delivery end, from which it falls upon the receiver. The cover 33 of the chute insures that the bag is properly delivered to the receiver. As the receiver is moving in the same direction as the bag, the latter is not suddenly brought to a stop, but falls upon a moving body, and consequently, there is no sudden shock or impact. As soon as the bag falls upon the receiver, the operation of the latter can be brought to a gradual stop so that the momentum acquired by the bag is slowly overcome.

It will be understood that if so desired, I can provide any preferred or common means for actuating the receiver, for example, a prime mover or motor can be connected therewith. As the receiver can be turned in opposite directions, it is adapted to receive objects from trains moving in both directions along the track.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a receiver arranged to move continuously, means for actuating said receiver at different speeds and in different directions, and means for delivering objects to said receiver.

2. In combination, means for guiding and delivering objects, a receiver arranged to move continuously in the same direction as the object delivered to it, and means for mechanically actuating said receiver at different speeds.

3. In combination, a rotatable receiver, means for rotating said receiver in opposite directions, and a plurality of chutes adapted to deliver objects to said receiver from opposite directions.

4. In apparatus of the class described, means for receiving objects in such manner that the momentum of the objects, due to the movement of the train, is gradually overcome and means for driving said first means whereby the momentum is gradually overcome.

5. In apparatus of the class described, receiving means arranged gradually to overcome the momentum of an object delivered from a train and means for operating said receiving means whereby the rate at which the momentum is overcome can be regulated.

6. In apparatus of the class described, a receiver having means whereby the receiver is mechanically actuated so that the momentum of an object delivered from a moving train to the receiver, is gradually overcome.

7. In apparatus of the class described, a receiver having an unlimited movement, and means at said receiver for mechanically actuating said receiver.

8. In apparatus of the class described, a receiver having an unlimited movement, means at said receiver for mechanically actuating said receiver, whereby it can be moved in opposite directions, and means for directing objects to said receiver.

9. In apparatus of the class described, a member arranged to move in the direction of travel of a train, means at said receiver for mechanically actuating said member, and means for guiding an object from the train to said member.

10. In apparatus of the class described, a receiver arranged to move in opposite directions, means at said receiver for mechanically actuating said receiver whereby it is moved in opposite directions, and means for guiding objects to said receiver from opposite directions.

11. In mail handling apparatus, a rotatable receiver, means for rotating said receiver in opposite directions, and a plurality of chutes for directing objects to said receiver from opposite directions.

12. In apparatus of the class described, a receiver arranged to rotate, and a chute for directing objects to said receiver, said chute being located so that it delivers to a portion of said receiver which moves in the same direction as the direction of movement of the object along said chute to said receiver.

13. In apparatus of the class described, a platform having a rim, said platform being rotatably mounted, means for rotating said platform, means for movably supporting said platform, and means for directing objects to said platform.

14. In apparatus of the class described, a platform having a rim and at the under side a circular track, means for pivotally mounting said platform, fixed rollers engaging at said track to support said platform, means for rotating said platform, and chutes arranged to deliver objects to said platform from opposite directions.

15. In apparatus of the class described, a support having a pivot member, a platform rotatably mounted upon said pivot member and having a rim extending above and below said platform, said rim, below said platform being formed into a circular track, said support having rollers engaging said track to support said platform, said platform having a gear, a shaft having a gear in mesh with said first gear, means for manually operating said shaft, and means for directing objects to said platform from opposite directions.

16. In apparatus of the class described, a movable receiver, and chutes arranged to direct objects to said receiver from opposite directions, each of said chutes being tapered and having the delivery end projecting over said receiver, each of said chutes at the delivery end having a cover arranged at an angle with the chute and the receiver, and extending further over the receiver than the chute.

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

WILLIAM C. THORNTON.

Witnesses:
HENRY C. GOLLER,
W. R. FOSTER.