C. P. GRANDFIELD.

MAIL RECEIVING AND DELIVERING APPARATUS.

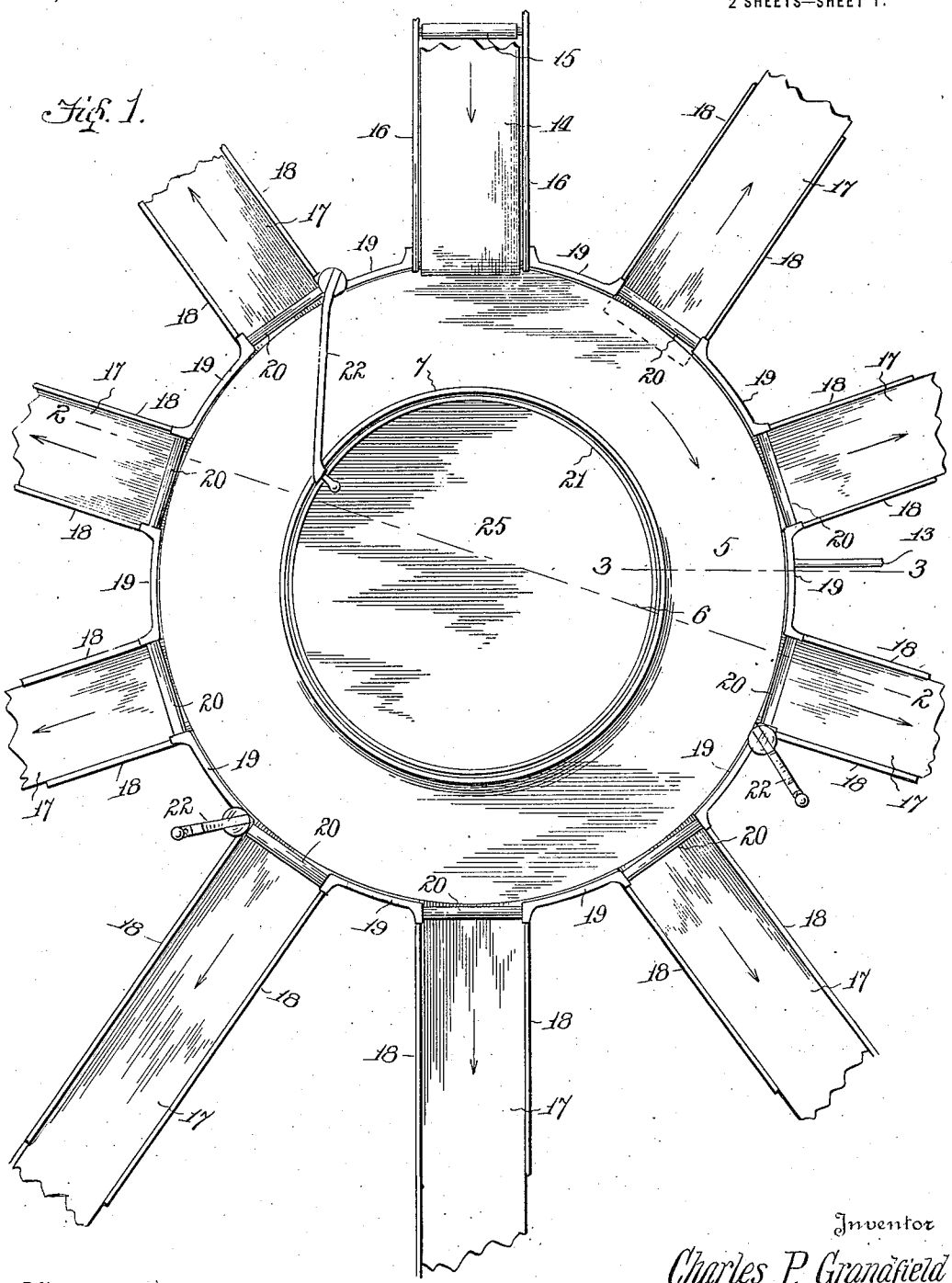
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1,204,428.

Patented Nov. 14, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

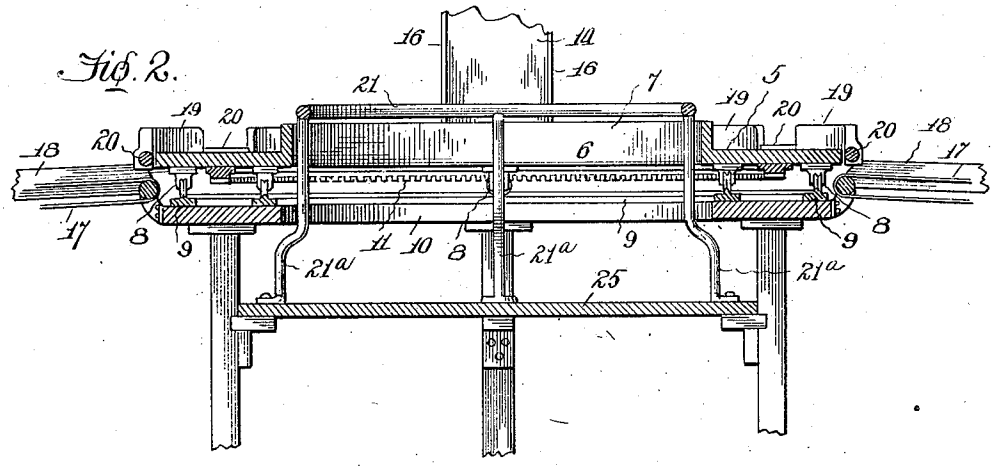


Fig. 3.

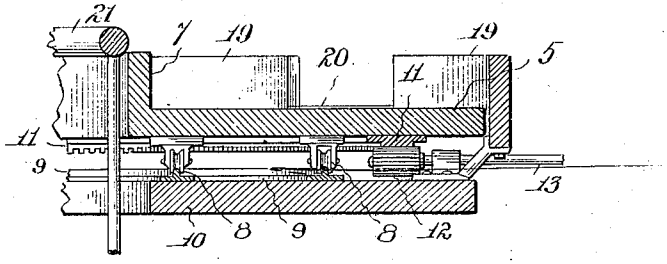
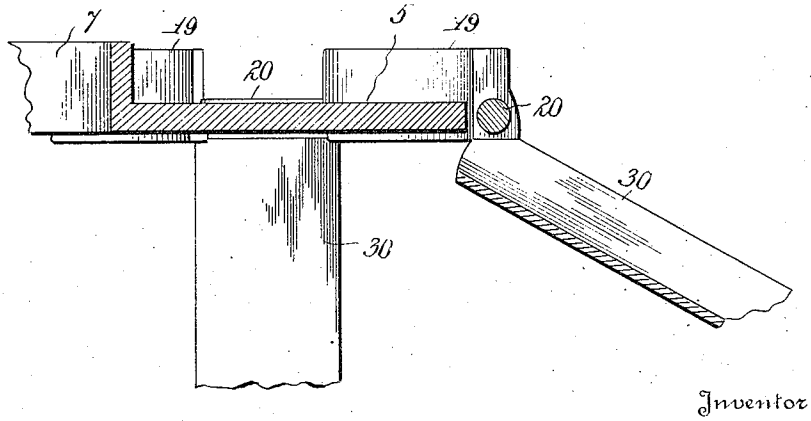


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MAIL RECEIVING AND DELIVERING APPARATUS.

1,204,428. Specification of Letters Patent. Patented Nov. 14, 1916.

Application filed November 2, 1914. Serial No. 869,924.

To all whom it may concern:

Be it known that I, CHARLES P. GRANDFIELD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a Mail Receiving and Delivering Apparatus, of which the following is a full and complete specification.

My invention relates to improvements in post-office furniture, and more especially to that particular class of mail handling apparatus employed for the purpose of receiving and delivering bags of mail matter to different places in the building where the mail is to be assorted according to carriers or routes.

In the handling of mail in those post-offices where the mail matter, transported in bags, is received in large quantities for distribution, it is customary to deposit the bags from a delivery-belt or chute on to a stationary table from which conveyer-belts radiate to different places where assortment takes place, and of course if a number of conveyer-belts are employed the table must be large and the bags, labeled according to place for assortment, must be dragged across the table and dropped on to their respective conveyer-belts. This operation, under the present arrangement, requires the services of several men, and the work of handling the bags is not only laborious but consumes time, inasmuch as the men must drag the heavy bags across the table and go back and forth between the delivery belt and the conveyer-belts.

The object of my present invention is to provide a simple, effective and economical arrangement for facilitating the transfer of the bags of mail matter from the delivery-belt or chute to the conveyer-belts, to save time and labor, as well as expedite the work in such manner that a minimum number of men will be required to make the transfer. This is accomplished in the present instance by providing a revolving table on which the bags are deposited near one edge, and are carried thereby to the point where they may be pushed off on to the conveyer-belts, respectively. In the present instance the table is provided with a central opening below which is a platform on which the men who distribute the bags to the conveyer-belts stand, and in addition there are provided hinged guides which may be moved into place for automatically deflecting a bag to a conveyer-belt.

In the following description I have set forth the construction and operation of the preferred form of my improved mail receiving and delivering apparatus, and what I claim as new, and desire to protect by Letters-Patent, is particularly set forth in the appended claims.

In the accompanying drawings, which form a part hereof:—Figure 1 is a plan view of a mail receiving and delivering apparatus, constructed in accordance with my invention. Fig. 2 is a transverse sectional view, on the line 2—2 of Fig. 1. Fig. 3 is an enlarged detail sectional view on the line 3—3 of Fig. 1. Fig. 4 is a modification, hereinafter referred to.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my invention I employ a circular table, as 5, preferably provided with a central opening, as 6, and at the inner edge of said table is a raised rail, 7, to prevent the bags or other articles deposited on the table from falling off. This table is mounted for rotation on suitable supports, in the present instance by means of grooved rollers 8, attached to the underside of the table and traveling on annular track-rails 9, carried on supporting-beams 10, though of course other means may be employed, it being desirable merely to so support the said table that it may revolve easily and with a minimum amount of friction. For the purpose of turning or rotating the table it is provided on its underside with an annular rack-bar 11, with which meshes a gearwheel 12 on a suitably driven shaft 13.

Projecting over the annular table 5, so as to deposit articles, as bags of mail matter, thereon, there is a delivery-belt 14, passing over suitable guide-rollers, as 15, and provided with stationary side pieces 16, forming a trough in connection with the traveling-belt. This delivery-belt or trough is intended to receive the bags of mail transported to the post-office by wagons or cars and deposit them on to the table, and of course leads from a suitable place where the bags may be transferred from the wagons or cars.

Extending from different points below the outer edge of the table are conveyer-belts 17, leading to suitable places where the bags may be deposited for the assortment of the mail, said conveyer-belts also having stationary side pieces, as 18, to confine the bags

thereon. The conveyer-belts preferably project a short distance under the outer edge of the table so that the bags may be dropped thereon.

Between the conveyer-belts, at the outer edge of the table, are stationary guide-rails 19, to prevent the bags from falling off the table between said belts, and in order to facilitate the operation of transferring the bags from the revolving table to the conveyer-belts horizontal rollers 20 are disposed between the guide-rails 19 directly above the conveyer-belts, the upper edges of the rollers being slightly above the plane of the top of the table. These rollers are loosely journaled and serve the purpose of relieving the bags of the turning movement of the table as soon as the weight of a bag is placed thereon, thus permitting the bags to be more easily slid from the table to the conveyer-belts.

As heretofore stated, the inner edge of the annular table is provided with a raised rail to prevent the bags falling in to the central opening, and in order to provide a support against which the men may lean in shifting the bags from the table to the conveyer-belts I may, and preferably do, provide a stationary rail 21, surrounding the inner edge of the table on a plane approximating the upper edge of the aforesaid rail.

It will be understood, of course, that instead of employing endless belts for delivering the bags to the table and for conveying them from the table to the places desired I may use ordinary chutes, as 30, (Fig. 4), but endless traveling belts are preferred inasmuch as they may be disposed horizontally and therefore the distributing table would not have to be located at such a great elevation.

In the operation of the apparatus the men required for distributing the mail-bags to the different conveyer-belts are stationed in the opening in the table upon the platform, 25, the latter being arranged with respect to the table so that the men can conveniently reach over said table and push the bags on to the conveyer-belts. As the bags are deposited from the delivery-belt on to the revolving table they are carried by the latter around in front of the conveyer-belts, and as a bag arrives opposite or above a conveyer-belt to which it is to be assigned the man in charge of this belt pushes it over the interposed roller on to said belt. It will be understood that each bag is suitably labeled to indicate the conveyer-belt it is to be deposited on, and in handling a very large number of mail-bags they are fed continuously on to the table, which in practice revolves at a speed corresponding with the speed of the delivery-belt. The speed of the table and delivery-belt may be regulated according to the ability of the men to distribute the bags, and when there is not a rush the speed may be reduced to such an extent that two or three men may distribute to eight or ten conveyer-belts. If a man should neglect to push a bag off on to the proper conveyer-belt it will be permitted to pass on by the other men until it reaches his station again.

To divert or deflect a bag automatically on to a conveyer-belt, I provide a guide plate or bar 22, which is hingedly supported at or near one edge of the table, for instance to one of the guide-rails 19 at the far side of each opening leading to the conveyer-belts; said guide-plate being adapted to be folded down and disposed at an angle to the direction of movement of the table, whereby to arrest the bag and guide it to the roller above the conveyer-belt. Of course the guide-plate coöperating with the last conveyer-belt would in practice be down in operative position so as to automatically deposit bags on to the same, but this one also should be hinged so that it could be swung up to permit a neglected bag to pass.

Though I have described my invention as especially adapted for the purpose of receiving and delivering or distributing bags of mail matter, it will be readily understood that it may be used also for distributing other articles; for instance it may be employed in large commercial houses for the purpose of distributing goods assigned to a house to different departments of the house.

Having described my invention I claim:

1. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a revolving table, a stationary platform adjacent thereto, a delivery-belt leading on to the table, and conveyer-belts leading from below the table to places where the bags are to be delivered, for the purpose set forth.

2. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a revolving table having an opening at the center thereof, a platform below the opening, a delivery-belt leading onto the table, and conveyer-belts leading from below the outer edge of the table to places where the bags are to be delivered, for the purpose set forth.

3. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a revolving table, a platform adjacent thereto, a delivery-belt leading on to the table, conveyer-belts leading from the table below the edge thereof, and rollers supported above the conveyer-belts at the edge of the table, substantially as shown and for the purpose set forth.

4. In a receiving and delivering apparatus for mail-bags, &c., the combination of a circular revolving table having an opening at the center thereof and a rail at the edge around the opening, a delivery-belt leading

on to the table, conveyer-belts extending from below the outer edge of the table, stationary rails at the outer edge of the table between the conveyer-belts, and rollers beyond the edge of the table between the said rails, substantially as shown and for the purpose set forth.

5. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a circular revolving table having an opening at the center thereof and a rail surrounding the opening, a platform below the opening in the table, and a stationary rail supported adjacent the inner edge of the table; together with a delivery-belt depositing on to the table, and conveyer-belts leading from below the outer edge of the table, substantially as shown and described.

6. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a circular revolving table having an opening at the center thereof and a rail thereon surrounding the opening, a platform below the opening in the table, and a stationary rail supported adjacent the inner edge of the table, together with conveyer-belts leading from below the outer edge of the table, rails supported between the belts, and rollers journaled in said rails and located above the conveyer-belts at the outer edge of the table, substantially as shown and for the purpose set forth.

7. In a receiving and delivering apparatus for mail-bags, &c., the combination, of a revolving circular table having an opening at the center and a rail surrounding the opening, a platform below the opening in the table, conveyer-belts extending from the outer edge of the table, and stationary rails supported between the conveyer-belts to project above the outer edge of the table and leave openings leading to said conveyer-belts, and guide-plates pivoted to the stationary rails at the far side of the aforesaid openings to be folded down on the table and deflect the bags to the conveyer-belts, substantially as shown and described.

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Witnesses:
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