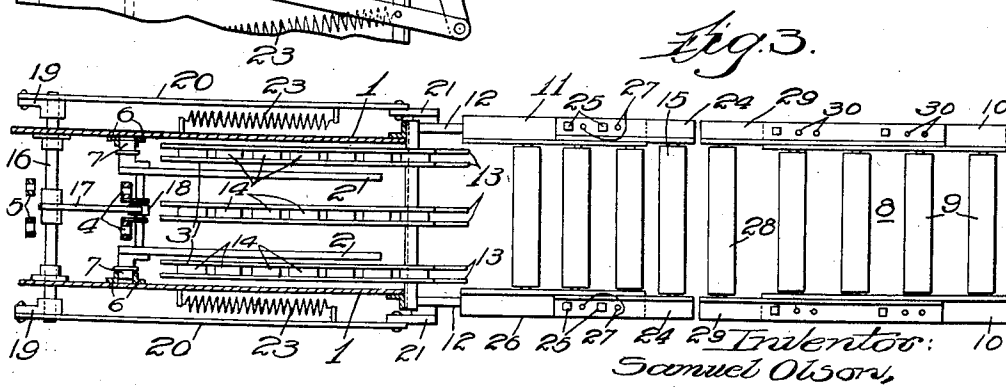
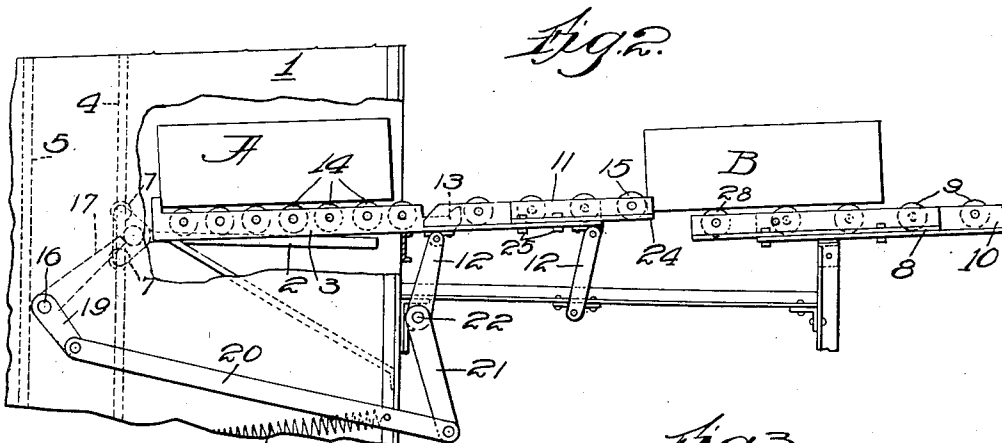
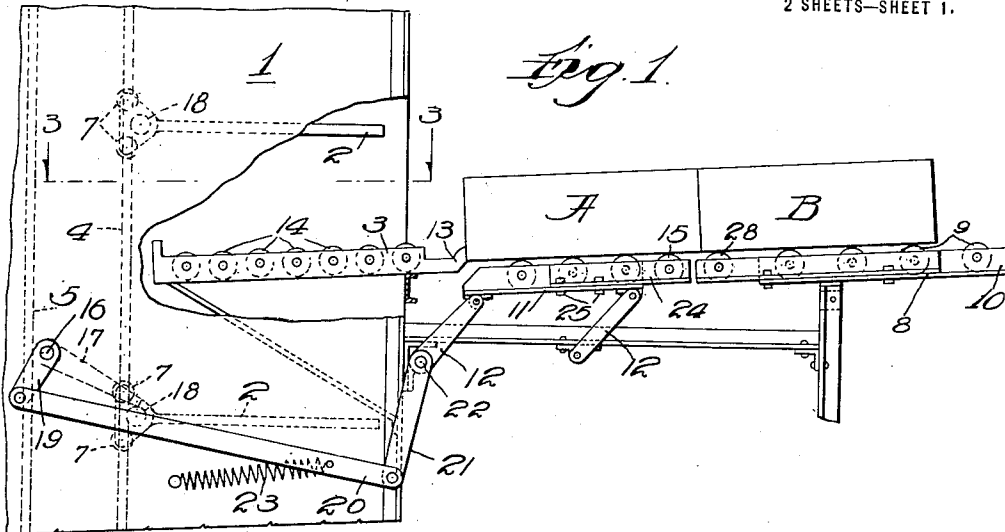


1,362,034.

Patented Dec. 14, 1920.

2 SHEETS—SHEET 1.



Inventor:
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Witness:

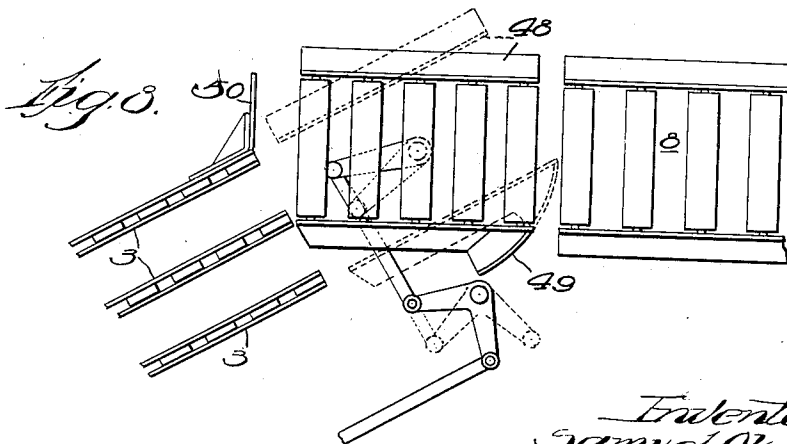
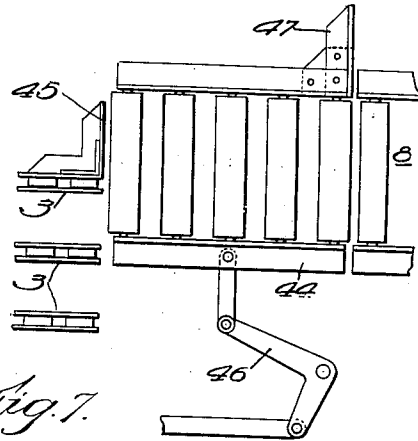
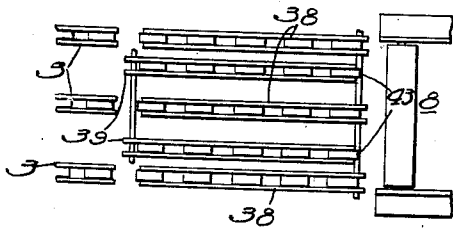
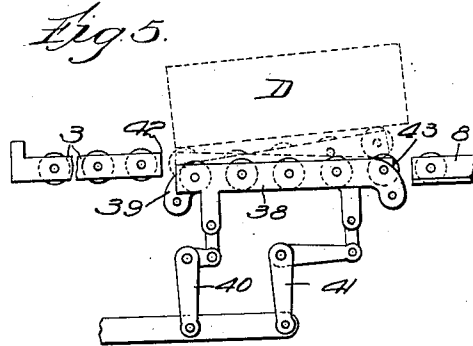
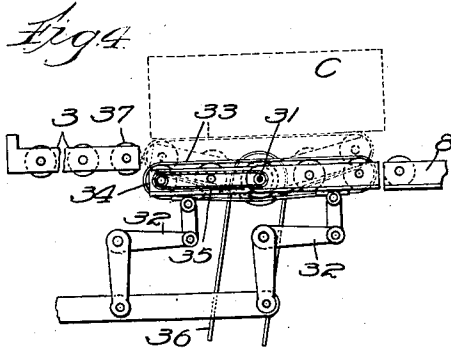
[Signature]

By *Burlin Burlin*
His Attys

S. OLSON.
PACKAGE FEEDER FOR CARRIERS.
APPLICATION FILED JAN. 24, 1919.

1,362,034.

Patented Dec. 14, 1920.
2 SHEETS—SHEET 2.



Witness.
[Signature]

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UNITED STATES PATENT OFFICE.

SAMUEL OLSON, OF CHICAGO, ILLINOIS.

PACKAGE-FEEDER FOR CARRIERS.

1,362,034.

Specification of Letters Patent.

Patented Dec. 14, 1920.

Application filed January 24, 1919. Serial No. 272,800.

To all whom it may concern:

Be it known that I, SAMUEL OLSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Package-Feeders for Carriers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention is directed to means for regulating the travel of packages along a carrier track or runway by controlling the transfer of such packages from one section of the track to another, and it is illustrated by a structure in which the receiving section of the track is also a loading station for an elevator, and arranged so that the elevator movement automatically controls the transfer action and thus regulates the feeding of packages to the elevator. The invention consists in various features and elements of the structure hereinafter described and shown in the drawings together with certain combinations thereof as indicated by the claims.

In the drawings:

Figure 1 is a side elevation of an elevator structure and a runway including package feeding means embodying this invention, and showing the parts in position for stopping the packages prior to their final delivery to the elevator.

Fig. 2 is a similar side elevation showing the parts in position for delivering a package to the elevator loading station.

Fig. 3 is a plan view of certain parts shown in Figs. 1 and 2, taken as a section at line 3—3 on Fig. 1.

Fig. 4 is a side elevation of a modified form of feeding device.

Fig. 5 is a side elevation of another modification of the feeding mechanism.

Fig. 6 is a plan view of the parts shown in Fig. 5.

Fig. 7 is a plan view illustrating another modification of the feed mechanism.

Fig. 8 is a plan view showing a still further modification of the feeding device.

In Figs. 1 and 2 the side wall, 1, of the elevator shaft is partly broken away to show in full line one of the elevator trays, 2, and the receiving section, 3, of the carrier track which constitutes a loading station for the elevator. The upwardly travel-

ing ply of the chain is indicated at 4, and the downwardly returning ply at 5 in dotted line, being shown in section in Fig. 3, which also includes the guide rails, 6, which coast with the guide rollers, 7, of the elevator trays, to maintain the latter in horizontal position in their upward travel. The carrier or runway proper of which the end portion is shown at 8 may be of the common construction in which packages travel upon rollers, 9, extending transversely between longitudinal side frames, 10, which are sufficiently inclined to the horizontal so that gravity will cause travel of the packages over the rollers.

For regulating the feed of such packages to the final receiving section or loading station of the elevator at 3, there is interposed between the said section, 3, and the runway, 8, a transverse section, 11, which, as shown in Figs. 1 and 2, is mounted for bodily vertical movement upon parallel rocker arms, 12, so that, at one limit of the movement, it is alined with the runway, 8, for receiving packages therefrom but misalined with the loading station, 3, lying in a plane somewhat below that of said station, so that a stop, 13, associated with the loading station stands above the level of the rollers of the transverse section, 11, and in position to engage a package thereon and arrest its travel. The length of the transverse section, 11, should be equal to or slightly less than the length of one of the packages which it is to handle, such as a box, A, shown in Figs. 1 and 2; thus the rear end of said part, A, will serve as a stop to arrest the next box, B, as it comes along the runway, 8, at a position beyond the rear end of the transverse section, 11, so that as the said section is moved to its upward limit, as shown in Fig. 2, the box, A, may continue to act as a stop for box, B, until the rear end of section, 11, has risen into a position to intercept said box, B, by which time the box, A, will have been lifted above the stop, 13, and allowed to proceed on to the loading station, as shown in Fig. 2. The rollers, 14, of the loading station, 3, are arranged in several sets, transversely separated to permit the carrying arms, 2, of the elevator trays to pass between them and pick up the load, such as the box, A, from them, as said arms, 2, travel upward,—this relation of the parts being indicated in Fig. 3.

Preferably the rear roller, 15, of the transfer section, 11, serves as a stop for box, B, so that as the section is lowered back to its former position in alinement with the track, 8, said stop member, 15, rolls without friction against the end of box, B, and finally out of contact therewith, permitting the box, B, to advance on to the transfer section, 11, to the stop, 13. This up-and-down movement of the transfer section, 11, may be effected in properly timed relation to the travel of the carrier arms, 2, of the elevator by means of a linkage comprising a bell crank fulcrumed at 16 with its arm, 17, extending for contact with a roller, 18, which is associated with each tray or carrier of the elevator at its connection with the chain, 4; the other arm, 19, of the bell crank is connected by a link, 20, with a rocker arm, 21, on shaft, 22, of one set of the rocker arms, 12. A spring, 23, tends to hold the transfer section, 11, in its lower position in alinement with the runway, 8, while actuation of the bell crank arm, 17, by the passage of an elevator tray carries the section, 11, to its upper limit in alinement with the receiving section, 3.

To adapt this feed mechanism for handling packages of different sizes at different times, the terminal portion of the runway, 8, and the transfer section may both be made of variable length, so that the section, 11, may always be adjusted to a length that is slightly less than that of the package which it is to handle. This may be accomplished by mounting the end roller of each part in longitudinally adjustable side frame members; as shown in Figs. 1, 2 and 3, the roller, 15, is carried in the side frames, 24, secured by bolts or screws, 25, to the members, 26, which are carried directly by the rocker arms, 12, and several sets of holes, 27, are provided for the bolts, 25, to permit longitudinal adjustment and securement of the members, 24, on the parts, 26. The terminal roller, 28, of the runway is similarly carried in adjustably mounted side frames, 29, several holes, 30, being provided therein to receive the securing bolts for attachment to the permanent or fixed side frames, 10.

The drawings also show several modified forms of feed devices all embodying the same general principle as illustrated in Figs. 1, 2 and 3,—namely, the bodily movement of the transfer section from one limit to the other, it being alined with the runway and misalined with the receiving section at one limit, and then alined with the receiving section and misalined with the runway at the other limit, and provided with suitable stops which are brought into action by such misalinement at one point or the other to control the travel of the packages.

In Fig. 4 the transfer section is shown as composed of two parts hinged together

at the middle of the length of the section at 31 with bell cranks, 32, arranged for simultaneously elevating or depressing the opposite ends of the section but leaving the hinge axis, 31, stationary. At the lower limit the rear end of the transfer section is alined with the runway, 8, while at the upper limit, shown in dotted lines, the forward end of the section would be alined with the receiving section or loading station, 3. Preferably a feeding belt, 33, is included in this combination, traveling over the end rollers of the transfer section and arranged to directly support the box or other load, indicated at C. Such belt may be driven by its engagement with the forward roller, 34, which is rendered a live roller by connection through the driving chain, 35, and belt, 36, with any suitable source of power. If the belt, 33, is continuously driven, it will of course slip under the package, C, when the latter first arrives upon the transfer section, and is stopped against the roller, 37, of the loading station, 3. But as the end portions of the transfer section rise into alinement with said loading station, the belt will feed the package, C, on to the station with greater certainty than it would travel by gravity over the rollers thereon.

Fig. 5 illustrates another modification in which the two sections of the transfer device, instead of being hinged together at the middle, are separately fulcrumed at opposite ends, the rollers of these sections being constructed somewhat as those of the loading station, 3, shown in Fig. 3, and carried in frames which are transversely spaced apart and interlapped past each other, as illustrated in the plan view of Fig. 6. The free ends of the sections, 38 and 39, respectively, are actuated by bell cranks, 40 and 41, which may be proportioned, if desired, to elevate the movable end of the part, 39, which is the rear end of the transfer section by a greater amount than the forward end, so as to incline the package, C, sufficiently to insure its traveling on to the loading station, 3, by gravity. It will be understood that the rear end, 42, of the station, 3, will act as a stop to arrest the package as it arrives on the transfer section composed of parts 38 and 39, and that the rear end of its portion, 39, carrying the roller, 43, will act as a stop to arrest a package traveling on the runway, 8, while the transfer section is in its upward position.

The transfer section, 44, shown in Fig. 7, is mounted for horizontal movement in its own plane transversely of the direction of travel of packages along the runway, 8, and said runway is transversely misalined with the loading station, 3. When the section, 44, is in proper alinement with the runway, 8, a package arriving thereon is arrested by 130

means of a stop, 45, rigidly associated with the receiving section, 3. Then by movement of the bell crank, 46, controlled by travel of the elevator, the transfer section is moved 5 laterally into alinement with the receiving section, 3, and, being inclined to the horizontal, the package thereon will travel by gravity on to the receiving section. A stop, 47, carried by the transfer section, 44, being 10 thus positioned at the end of the runway, 8, serves to arrest further movement of any packages thereon until section, 44, is returned into alinement therewith.

Fig. 8 shows another form of the invention in which the runway, 8, is angularly 15 misaligned with the loading station, 3, and the transfer section, 48, rotates between limits for alternate alinement with the parts, itself carrying a stop, 49, and the loading station carrying a stop, 50, serving to prevent travel of packages over the misaligned parts.

I claim:—

1. In combination with an elevator and a 25 runway for packages leading thereto, a loading station associated with the elevator, and a transfer section at the end of the runway mounted for movement of both its ends in the same direction transversely of the principal direction of travel of packages 30 over the runway, and means for effecting such movement of the transfer section controlled by the travel of the elevator.

2. In the combination set forth in claim 1, 35 the transverse movement of the transfer section being limited so that at one limit said section forms a continuation of the runway but is misaligned with the loading station.

3. In the combination set forth in claim 1, 40 said movement of the transfer section being limited so that at one limit said transfer section connects operatively with the loading station for delivery of a package thereto, but is misaligned with the runway.

4. In the combination set forth in claim 1, 45 said movement of both ends of the transfer section being effected by a bodily movement of the section in said transverse direction.

5. In the combination set forth in claim 1, 50 said movement of both ends of the transfer section being effected by a bodily movement of the section in said transverse direction, and such bodily movement transversely of the direction of travel of the packages being 55 combined with a longitudinal movement toward the loading station for initiating travel of a package from the transfer section to said loading station.

6. In the combination set forth in claim 1, 60 the said movement of the transfer section being limited so that at one limit said section forms a continuation of the runway, but is misaligned with the loading station, and a stop associated with the rear end of said loading station, arranged to engage a

package on the transfer section when the latter is thus misaligned with said loading station.

7. In the combination set forth in claim 1, such transverse movement of the transfer 70 section being limited so that at one limit said section connects operatively with the loading station for delivery of a package thereto, but is misaligned with the runway, and a stop associated with the rear end of 75 said transfer section, arranged to engage a package on the runway when said section is misaligned therewith.

8. In combination with an elevator and a runway for packages, a loading station asso- 80 ciated with the elevator, and a transfer section at the end of the runway, normally alined therewith for receiving a package therefrom, but mounted for limited movement of both its ends transversely of the di- 85 rection of travel of packages along the runway, and at the limit of such movement alined with the loading station for delivering a package thereto, together with means for effecting such movement of the transfer 90 section controlled by the travel of the elevator.

9. In the combination set forth in claim 8, means fixedly associated with the loading station positioned to engage the forward end 95 of a package on the transfer section when the latter is alined with the runway but disengageable from such package by movement of the section into alinement with the loading station. 100

10. In the combination set forth in claim 8, means fixedly associated with the transfer section positioned to arrest travel of a pack- 105 age along the runway while said transfer section is alined with the loading station.

11. In combination with an elevator and a runway for packages leading thereto, a loading station associated with the elevator, and a transfer section at the end of the runway mounted for movement of its rear end 110 adjacent the runway alternately into and out of alinement therewith, the terminal portion of said runway being longitudinally adjustable and the rear end of the transfer section being also longitudinally adjustable to 115 permit varying the length of said transfer section.

12. In a carrier comprising a runway for packages and a receiving section, a transfer section at the end of the runway mounted 120 for movement transversely of the principal direction of travel of packages over the carrier for alternate alinement with the runway and receiving sections respectively, means for varying the length of the transfer section 125 and means for longitudinally adjusting the end of one of the other sections adjacent thereto.

13. In the combination set forth in claim 1, said movement of both ends of the trans- 130

fer section being effected in vertical direction.

14. In the combination set forth in claim 1, said movement of both ends of the transfer section being effected in vertical direction, and so limited that at one limit of such movement the rear end of the transfer section projects above the plane of the runway.

15. In the combination set forth in claim 1, said movement of both ends of the transfer section being effected in vertical direction, and so limited that at one limit of such movement the rear end of the loading station stands above the plane of the transfer section track.

16. In the combination set forth in claim 1, said movement of both ends of the transfer section being effected in vertical direction, and means actuated by the travel of the elevator for effecting such movement of the transfer section.

17. In the combination set forth in claim 1, said movement of the transfer section being limited so that at one limit said section forms a continuation of the runway but is misaligned with the loading station, while at the other limit the transfer section connects operatively with the loading station for delivery of a package thereto, but is misaligned with the runway, and means rigidly associated with the transfer section and loading station respectively, serving as stops for engaging packages on the adjacent portions of the track during the misalignment aforesaid.

18. In combination with an elevator and a runway for packages leading thereto, a loading station associated with the elevator,

a transfer section at the end of the runway normally alined therewith and misaligned with the loading station for receiving a package therefrom, and mounted directly upon parallel rocker arms arranged to swing forwardly in the direction of advance of the packages in moving the transfer section into alinement with the loading station to effect delivery of a package thereto.

19. In a carrier comprising a runway for packages and a receiving section, a transfer section disposed between said parts and mounted for movement of both its ends in the same direction transversely of the principal direction of travel of packages over the carrier, such movement of the transfer section being limited so that at one limit said section registers with the runway but is misaligned with the receiving section and at the other limit the transfer section registers with the receiving section but is misaligned with the runway.

20. In a carrier comprising a runway for packages and a receiving section, a transfer section disposed between said parts and means adapted for simultaneously moving both its ends transversely of the direction of travel of the packages over the carrier, such movement of the transfer section being limited so that at one limit said section registers with the runway but is misaligned with the receiving section and at the other limit the transfer section registers with the receiving section but is misaligned with the runway.

In testimony whereof I have hereunto set my hand at Chicago, Illinois, this 10th day of January, 1919.

SAMUEL OLSON.