H. J. BUCK.

ELEVATOR.

APPLICATION FILED OCT. 23, 1914.

1,193,118.

Patented Aug. 1, 1916.

2 SHEETS—SHEET 1.

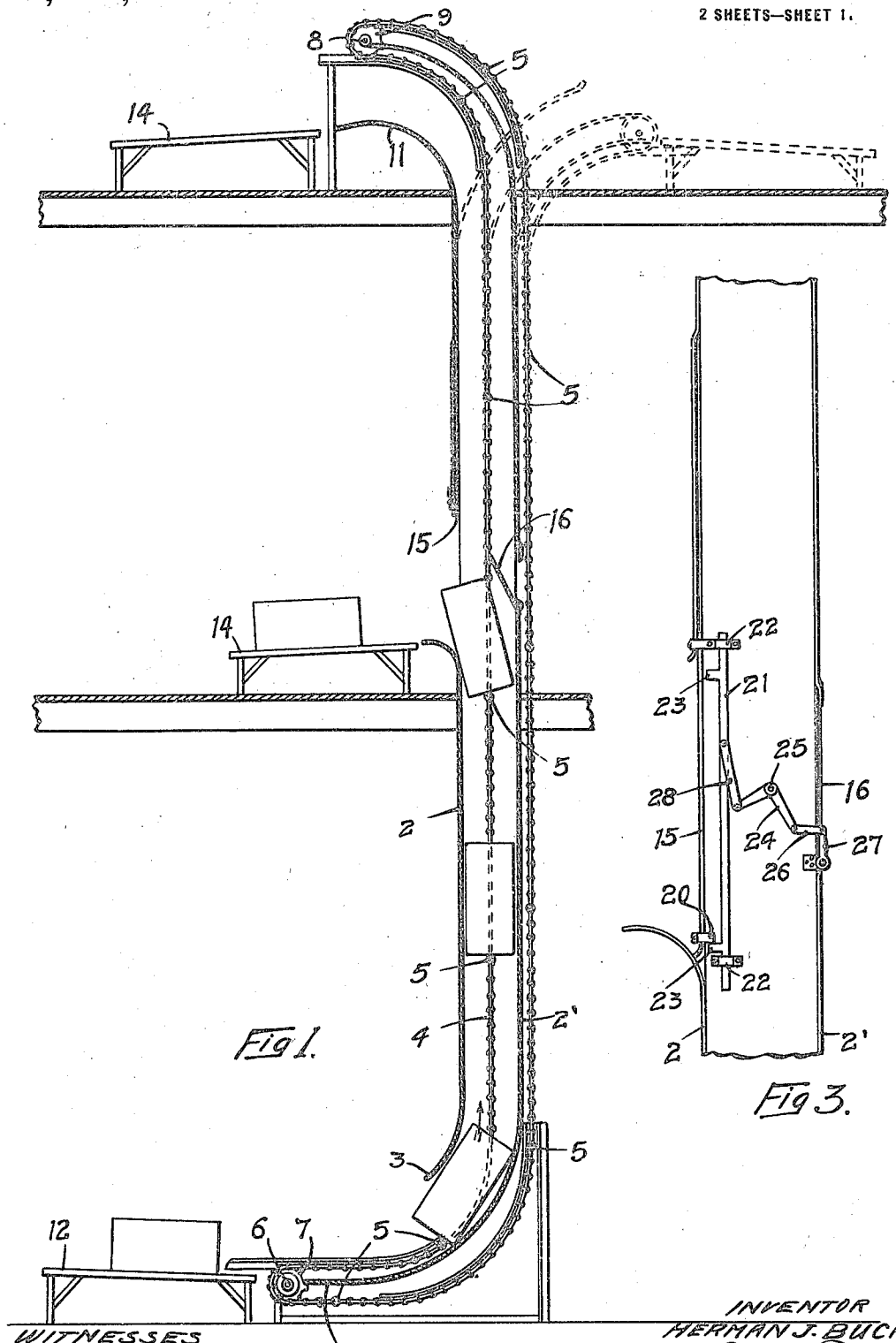


Fig 1.

Fig 3.

WITNESSES

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INVENTOR

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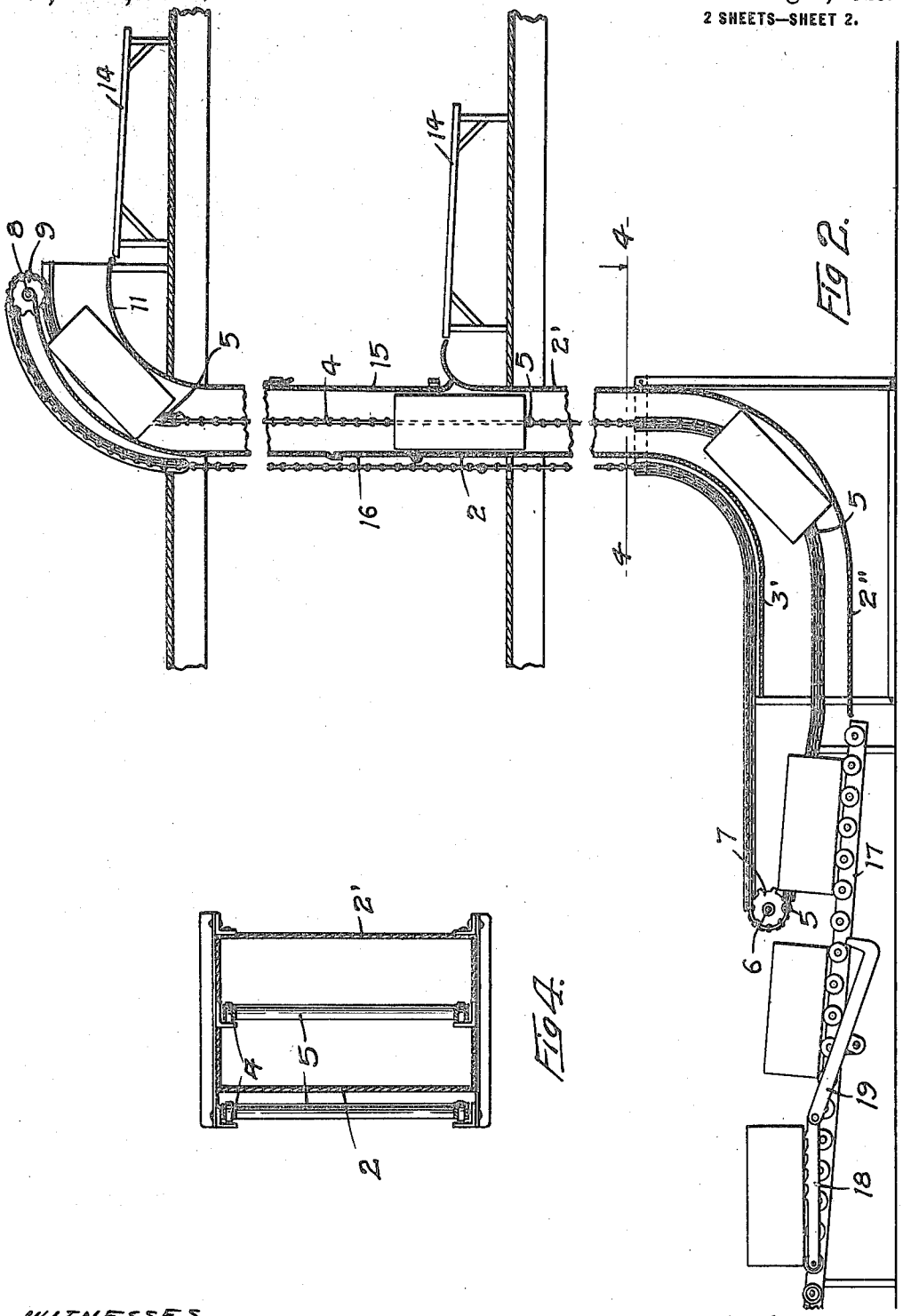


Fig 2.

Fig 4.

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UNITED STATES PATENT OFFICE.

HERMAN J. BUCK, OF ELLWOOD CITY, PENNSYLVANIA, ASSIGNOR TO MATHEWS GRAVITY CARRIER COMPANY, OF ELLWOOD CITY, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ELEVATOR.

1,193,118. Specification of Letters Patent. Patented Aug. 1, 1916.

Application filed October 23, 1914. Serial No. 868,158.

To all whom it may concern:

Be it known that I, HERMAN J. BUCK, a citizen of the United States, resident of Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

This invention relates to improvements in elevators designed especially for receiving packages on a lower floor or at a lower level, and carrying them up and automatically delivering them on any desired higher floor, or at any desired higher level.

The invention consists generally in the constructions and combinations hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a vertical elevation partly broken away, of an elevator embodying my invention, Fig. 2 is a similar view of a slightly modified construction, Fig. 3 illustrates the mechanism connecting the deflector and sliding door hereinafter described, Fig. 4 is a cross sectional view, taken on the line 4—4 of Fig. 2.

In the drawings, 2 represents an upright casing which may extend through any desired number of floors of a building, or up on the outside of a building. The forward wall of the casing is preferably outwardly curved and at its lower end terminates at the point marked 3, as shown in Fig. 1 of the drawings. The rear wall 2′ continues downwardly and is curved forwardly and preferably ends in a horizontal section or portion 2″.

An endless carrier, formed preferably of a pair of endless chain belts 4 with cross bars 5 extends up through the casing 2. The lower ends of the chain belts are carried by sprocket wheels 7, mounted upon the shaft 6, and the upper ends of said belt are carried by sprocket wheels 9 mounted upon the shaft 8. The upper end of the carrier is preferably extended on a curve to one side of the upper end of the casing 2, and the front wall of the casing is extended as a curved section 11, substantially parallel with the curved upper part of the carrier. The downwardly traveling reach of the carrier is outside or back of the rear wall 2′ of the casing. Any suitable means may be provided for supporting the carrier on curved lines at its upper and lower ends. I have not thought it necessary to show the supporting means in this application.

Arranged in front of the lower end of the elevator is a table 12, upon which the packages to be elevated are placed, and from which they are fed on to the curved floor 2″ of the elevator, which extends upwardly to form the lower end of the vertical part of the casing 2.

Upon each of the floors at which packages may be delivered, I provide a suitable receiving table 14 upon which said packages will be automatically placed by said elevator. If preferred a suitable gravity carrier may be employed, in place of the table 12, to deliver the packages to the lower end of the elevator, and suitable gravity carriers may be employed to receive the packages from the elevator at any floor on which it is desired to discharge them.

For the purpose of permitting the packages to be discharged on a floor below the top, I prefer to provide at any such floor a vertical sliding gate 15, and in the rear of this gate I provide a deflector 16. The gate 15 may be raised and lowered by hand, and the deflector 16 may be pulled forward so as to prevent the packages from going above the corresponding opening when the gate 15 is open, or it may be moved back against the rear wall of the casing 2 when it is desired to have the packages go above this particular floor.

Any suitable means may be employed for holding the gate and the deflectors in either open or closed position.

The sliding gate and the deflector may be coupled together so as to operate simultaneously. Any suitable means may be employed for such coupling. I prefer to employ the mechanism shown in Fig. 3 of the drawings. As here shown the sliding gate 15 is provided with a lug 20 which extends inwardly. A sliding rod 21 is arranged in suitable guides 22 and is provided with lugs 23, either one of which may be engaged by the lug 20 on the sliding door. A bell crank lever 24 is mounted upon a suitable pivot 25 and has one arm connected by a link 26 to an arm on the pivot of the deflector 16. The other arm of the bell crank lever 24 is connected by a link 28 to the sliding rod 21. With this arrangement, as the door is opened the lug 20 on the door strikes the up-

per lug 23 on the sliding rod, and turns the deflector 16 into the position shown in Fig. 1 of the drawings. When the package reaches the door opening its delivery through said opening will be insured by the position of said deflector. When the door is closed the lug 20 strikes the lower lug 23 on the sliding rod 21, and the deflector 16 is moved back flush with the rear wall of the casing.

The packages to be delivered are placed on the lower horizontal part of the elevator resting on the curved plate 2''. They may be delivered to the elevator by a gravity carrier or by other suitable means, or may be put in place by hand. The cross bars between the chains engage the ends of the packages and move them along the said plate into the lower end of the casing 2. They are confined in the casing by the walls thereof and must travel to the upper end of the elevator, or to the first open gate. They will be discharged on to the upper table, or one of the lower tables, as may be desired.

When the elevator is arranged as shown in the full lines in Fig. 1, the packages will be delivered on any one of the tables in a reversed position to that in which they are placed upon the elevator. In other words, they will be upside down. I may, however, extend the upper end of the elevator in the other direction, as indicated by dotted lines in Fig. 1. In this case the packages will be delivered upon the receiving table right side up.

In the construction shown in Fig. 2, the elevator runs in the opposite direction and the packages are received at the lower end of the elevator beneath the elevator carrier, and they are in this case delivered on the tables right side up.

I have indicated in Fig. 2 an automatic arrangement by which the packages may be delivered, one at a time, to the lower end of the elevator. I make no claim to this automatic delivering device, as the same is substantially shown and described in the patent to A. S. Dehler, No. 1,020,746, issued Mar. 19, 1912. With this construction the packages are fed, one at a time, beneath the endless carrier at the lower end of the elevator, and they are moved forwardly into the upper end of the casing 2. In this construction the upper wall of the casing preferably extends downwardly and horizontally to the point marked 3' in the drawings. As here shown a gravity carrier section 17 is arranged beneath the receiving end of the elevator and the packages are adapted to move by gravity into position to have the end of the package engaged by one of the cross bars 5 of the carrier. The stop device, the details of which are shown in the said Dehler patent is indicated by the parts to which I have applied the reference figures 18 and 19. As this automatic device forms no part of my present invention it is thought to be unnecessary to illustrate or describe the same in detail.

I claim as my invention:

1. The combination, with an upright casing, of an endless carrier arranged in said casing, means for operating said carrier, means for feeding packages to said carrier at the lower portion of said casing, a discharge opening in the wall of said casing below the upper end thereof, a door for said opening, and a deflector connected with said door and arranged to be moved into or out of the path of the moving package by a movement of the door, substantially as described.

2. The combination, with an upright casing arranged to extend above one or more floors of the building, of an endless carrier arranged in said casing, means supporting the upper and lower ends of said carrier, means for feeding packages to the lower portion of said carrier, a discharge opening in the wall of said carrier above one of said floors, and a deflector connected with said door and arranged to be moved into and out of the path of the moving article, by the movement of said door.

3. The combination, with an upright casing arranged to extend above one or more floors of a building, and provided with an open upper end and with a discharge opening in its wall below its upper end, of a door arranged to close the wall opening, a deflector connected with said door and arranged to be moved into the path of the moving article as the door is opened and to be moved out of said path as the door is closed, means supporting the upper and lower ends of said carrier, and means for feeding packages to the lower portion of said carrier, substantially as described.

In witness whereof, I have hereunto set my hand this 3 day of September 1914.

HERMAN J. BUCK.

Witnesses:
Jos. W. Humphrey,
L. G. Tingwall, Sr.