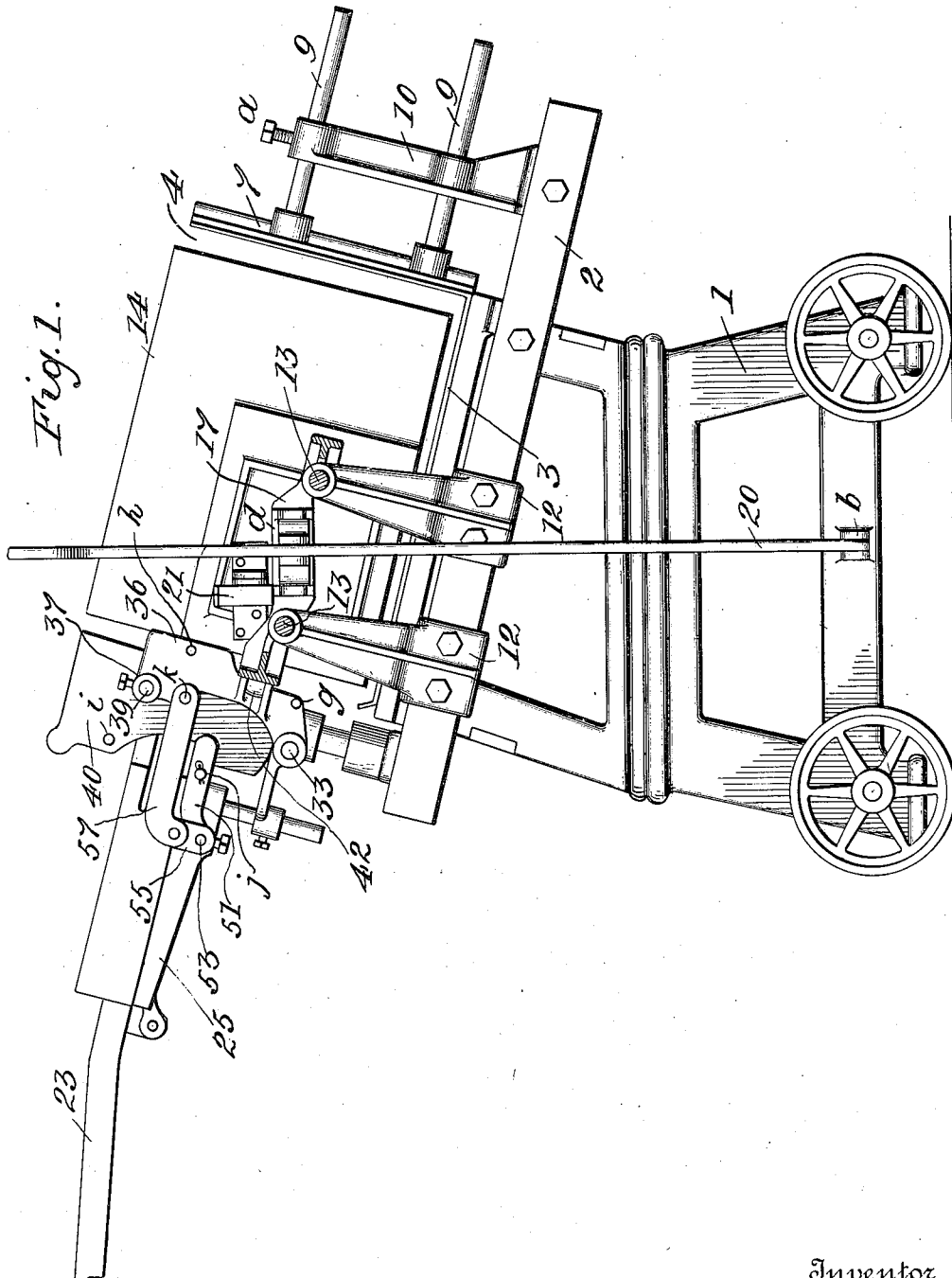


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MACHINE FOR CASING OR BOXING CANS.
APPLICATION FILED FEB. 5, 1914.

1,152,997.

Patented Sept. 7, 1915.
5 SHEETS—SHEET 1.



Witnesses
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Sarah Schotta.

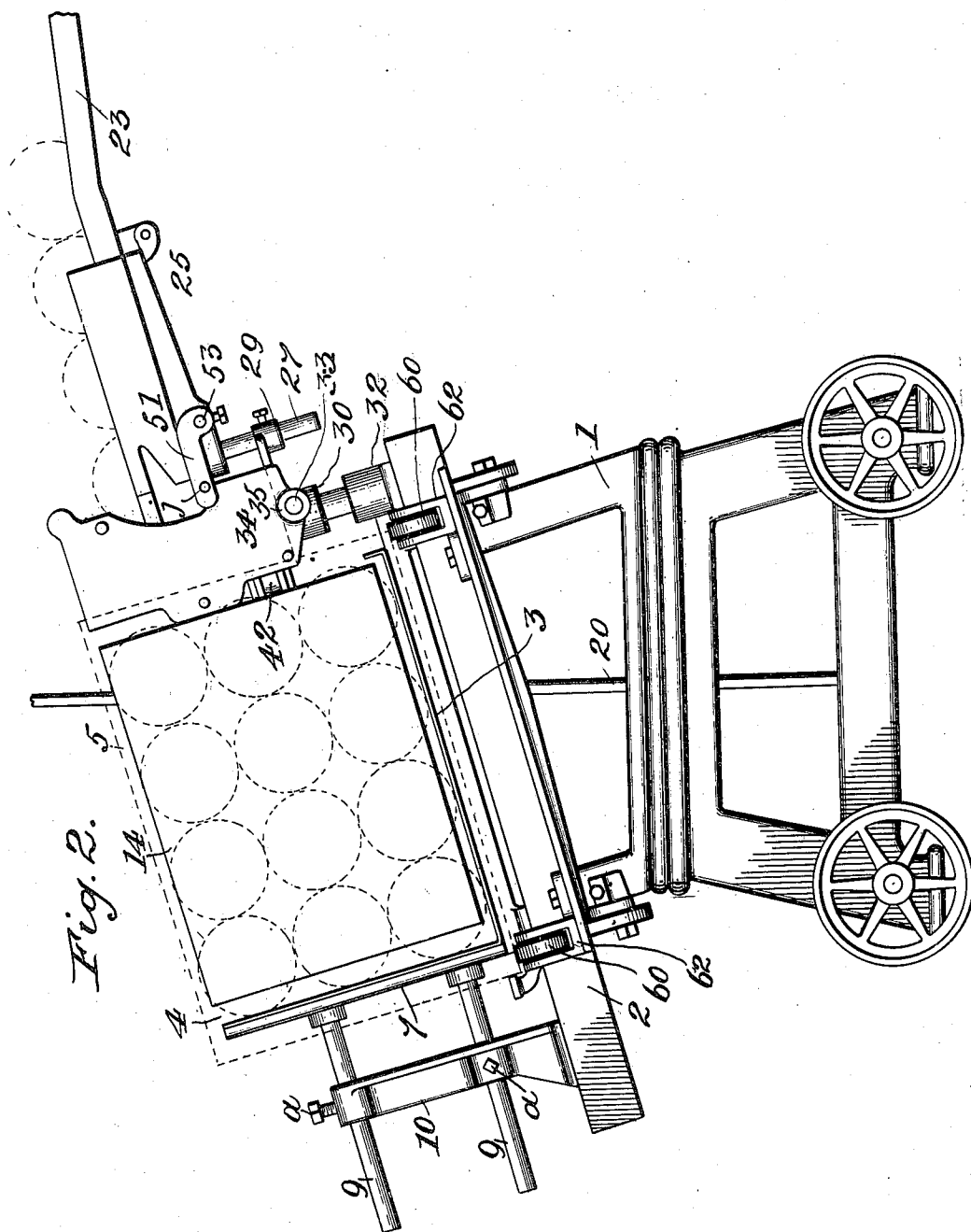
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Fig. 3.

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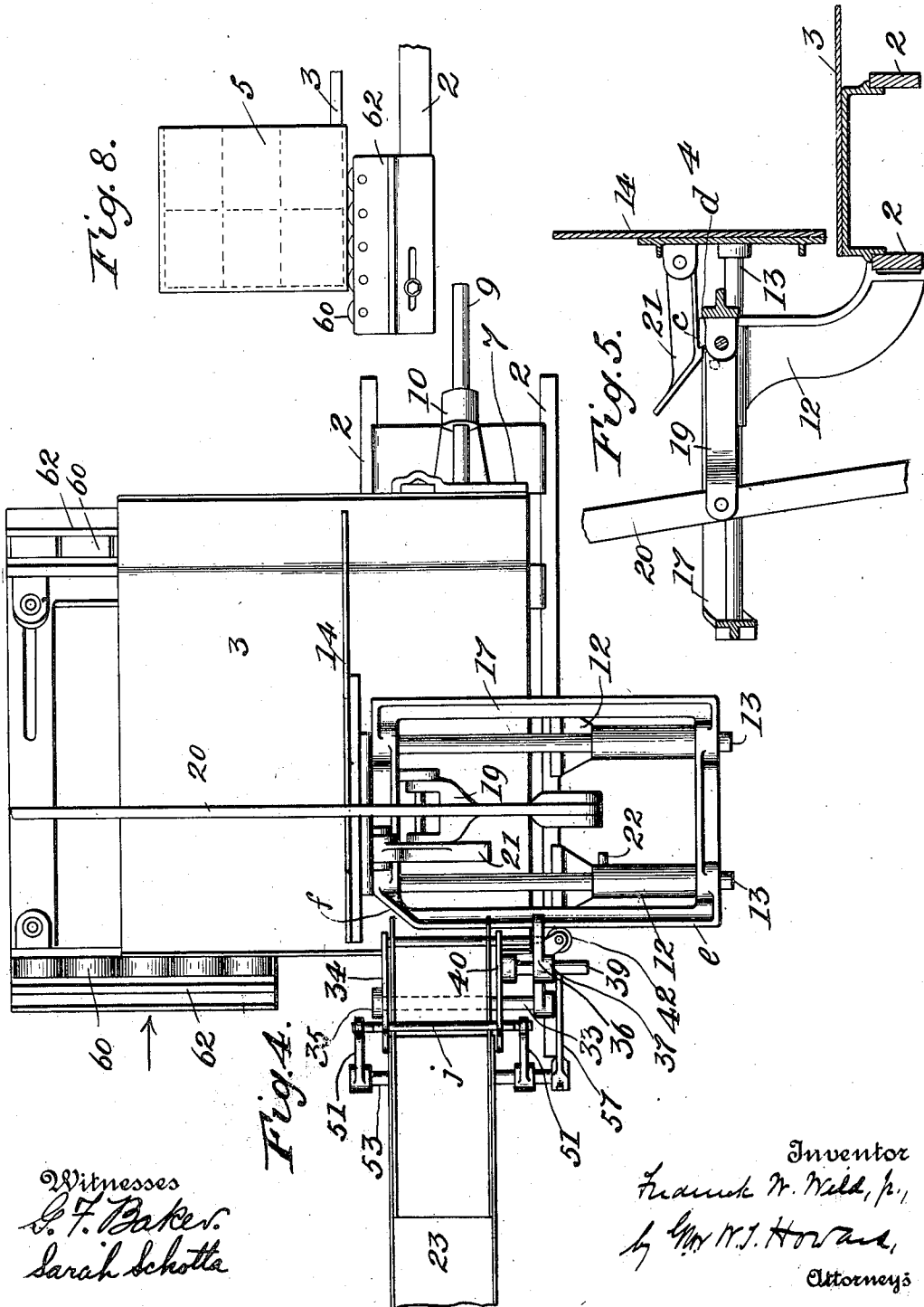
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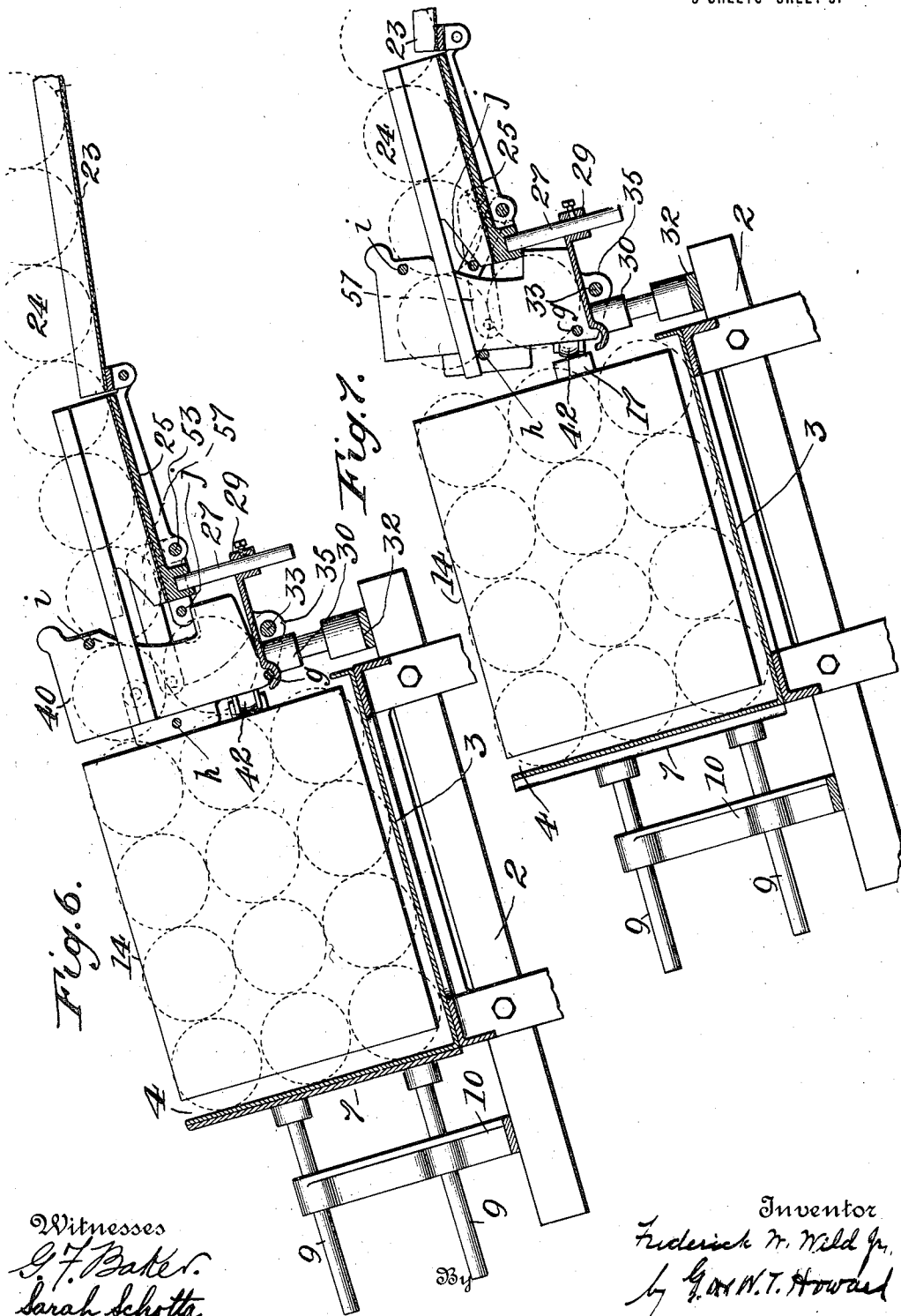
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UNITED STATES PATENT OFFICE.

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MACHINE FOR CASING OR BOXING CANS.

1,152,997.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK W. WILD, Jr., a citizen of the United States of America, residing at Baltimore, Maryland, have invented certain Improvements in Machines for Casing or Boxing Cans, of which the following is a specification.

This invention relates to a machine whereby cans automatically stacked therein are forced therefrom into a packing case or box in a condition for shipment, as will hereinafter fully appear.

In the description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which:—

Figure 1 is a side view partly in section, of the improved machine, and Fig. 2 is an exterior view of the reverse side of the same. Figs. 3 and 4 are top or plan views of the machine showing certain parts thereof in different positions. Fig. 5 is a sectional view of Fig. 3 taken on the broken line *x*. Fig. 6 is a sectional reverse side view of certain parts of the machine showing how cans are fed to and stacked in the same; and Fig. 7 a similar view illustrating how the cans to be pushed into a packing case or box, are isolated from others which are to follow in a subsequent operation of the machine. Fig. 8 is a view on a reduced scale of parts of the machine shown in Fig. 4, and looking in the direction indicated by the arrow in that figure, together with a packing case or box in a position to receive the cans as the same are pushed from the receptacle in which they have been stacked.

Referring now to the drawings, 1 is the wheeled frame of the machine, and 2, 2 are flat bars secured in an inclined position to the sides of the frame, and near the top thereof.

3 is a plate seated on the upper inclined surface of the frame 1, which at one side is turned upward at a right angle with its lower part, to form an open receptacle 4 in which cans are stacked in a condition to be pushed into a packing case or box 5 for shipment or any other purpose. An exterior view of the packing case or box on a reduced scale is shown in Fig. 8, and a dotted delineation of the same in Fig. 2.

To the upturned side of the plate 3, is fastened in any suitable manner, a backing

plate 7 having bars 9 which pass loosely through a bracket 10 fastened to the flat bars 2. By this means, the receptacle 4 can be adjusted longitudinally of the bars 2 to suit cans differing in diameter; and when adjustment is made, the receptacle is rendered immovable by means of set screws *a* shown in Figs. 1 and 2.

12, 12 are other brackets secured to one of the bars 2 at one side of the machine as shown in Figs. 1, 3 and 5, which are bored at their ends to serve as bearings for the bars 13 the inner ends of which are fastened to the vertical rectangular plunger plate 14 adapted to be moved laterally of the can receptacle 4.

17 is a saddle supported by, and adapted to be slid longitudinally of the bars 13 by means of the link 19 and the hand lever 20 which later is fulcrumed at *b* to the wheeled frame 1, as shown in Fig. 1.

A detachable connection between the plunger plate 14 and the saddle 17 is effected by means of a gravity pawl 21 which is hinged to the plunger plate and provided with a hook *c* adapted to engage a raised edge or lid *d* on the saddle, as best shown in Fig. 5.

The under surface of the outer end of the gravity pawl 21 is inclined, and the inner side of one of the brackets 12 is provided with a pin 22 over which the inclined surface of the pawl rides when the plunger plate 14 has been drawn outward to a predetermined position, which has the effect of lifting the pawl and disconnecting it from the saddle for a purpose hereinafter described.

By reference to Fig. 4 it will be seen that the inner corner to the left of the saddle 17 is inclined inward. The purpose of this construction will hereinafter appear.

23 is the runway along which the cans represented by 24, roll to the open receptacle 4. It is supported by a base plate 25 having a round bar 27 on its under side which passes through an arm 29 extending from the fixed stand 30 the lower end of which is made cylindrical and seated in a cross-piece 32 fastened in any suitable manner to the flat bars 2.

33 is a shaft extending crosswise of the bars 2, and adapted for vibration within the stand 30 which serves as its bearing.

34 is a plate shown in Figs 2, 3 and 4,

having a boss 35 in which the vibratory shaft 33 is fastened, and in consequence has a motion in common with it.

At the other end of the shaft 33 and to the front in Fig. 1, is secured a rocker 36 having a boss 37 at its upper left-hand corner, as shown in Figs. 1, 3 and 4, in which is secured a short shaft 39 which at its inner end carries a plate 40 at the front side of the runway, as best shown in Fig. 1. The plate 40 corresponds in all essential particulars with the plate 34, and has a motion in common with it. The object in not having the plate 40 fastened directly to the shaft 33, notwithstanding that it has to move with it, is to admit of its lateral adjustment with respect to the plate 34 to suit cans differing in length.

To adapt the rocker 36 as a mover for the plates 34 and 40 and certain connections hereinafter described, it is provided with a roller 42 which, due to the said rocker and its connections being in an inclined position with respect to a vertical line, bears at all times by gravity against one side of the saddle 17.

It will be seen by reference to Figs. 3 and 4 of the drawings, that the major portion *e* of the side of the saddle with which the roller 42 is in contact, is straight and at a right angle with the longitudinal center line of the machine, while the minor portion *f* at the inner end of the device, is inclined away from the said line, and in consequence, when the saddle is moved forward from its backward position shown in Fig. 3, the rocker 36 is pushed outward by the roller 42 coming in contact with the surface *e* of the saddle as is well shown in Fig. 4, and remains in that position until the saddle is restored to its backward position which brings the inclined portion of the saddle again in contact with the roller 42.

From the foregoing, it will be understood that the changes in position of the plates 34 and 40 and the rocker 36 as described, are performed by a single operation of the hand lever 20, and due primarily to the position of roller 42 with respect to the surfaces *e* and *f* of the saddle 17 with one of which it is, as before stated, always in contact.

It will be further understood that the plates 34 and 40 are thrown to their positions shown in Fig. 7, immediately after the plunger plate 14 begins its forward stroke, and when the open receptacle 14 is filled with cans, and for the purpose of separating the cans remaining on the runway from those in the said receptacle to be discharged into the case or box 5. This separation of the cans is effected by the rocker 36, the plates 34 and 40, and a device hereinafter described, being provided with the rods *g*, *h*, *i* and *j*, all of which extend transversely

of the machine. These strike the three forward cans in the runway, and force them and those behind them, backward and hold them so, until the cans in the receptacle 4 are discharged, and the plunger plate 14 moved back to admit of another charge of cans being admitted thereto by the replacing of the rods *g*, *h*, *i* and *j* in their original position where they do not interfere with the rolling of the cans from the runway to the said receptacle.

By reference to Fig. 7 it will be seen that the rods *g*, *h* and *i* take paths concentric with the path of the rocker, and impinge against and push back the first two of the cans in the runway, but such a path if taken by the rod *j* would not strike the second can on the runway, and it is therefore necessary that it should have an independent movement. This is produced as follows: The rod *j* is supported at its ends by the arms 51, which are tight on the vibratory shaft 53 which as before stated passes loosely through the base 25 of the runway 23, see Figs. 1, 3 and 4; and on the same shaft is secured a second arm 55 which is united by a link 57 to the rocker 36 at *h*.

It has hereinbefore been stated that the gravity pawl 21 is lifted from contact with the lip *d* on the saddle 17 as that device nears the limit of its backward stroke. This arrangement is not absolutely necessary, but is preferred, as the stroke of the saddle need not be as long as that of the plunger plate; and its use reduces the width of the machine.

The lower side of the packing case or box 5 which receives the cans as they are pushed from the receptacle 4, is slid directly under the portion of the plate 3 of the same which overhangs a proper distance beyond the bars 2 (see Figs. 5 and 8) until its bottom strikes the end of the said plate; and in this condition it is supported by the rollers 60 the shafts or pintles of which rotate in suitable supports 62 bolted to one of the said bars as shown in Fig. 8.

Supposing a packing case to be in the position described, and the receptacle 4 to contain twelve cans stacked therein as shown in Fig. 7, and separated from the cans on the runway in the manner before set forth, a forward movement of the plunger plate 14 produced by means of the hand lever, will force the said cans into, and in contact with the bottom of the packing case which remains stationary. Upon the return stroke of the plunger plate, the cans on the runway which are still held back until the saddle nearly reaches its extreme backward position, are released by the roller 42 passing to the inclined surface *f* on the saddle which brings the rods *g*, *h*, *i* and *j* to their original positions, and another charge of cans roll

to the receptacle 4 and are then pushed forward into the packing case. Upon a third charge of cans being moved forward they will come in contact with those in the case, and the filled case will therefore be rolled forward a distance equal to the length of a can, but still resting on the rollers 60. The delivery of the next charge of cans will cause the filled case to drop from the plate 3 of the receptacle 4 to the floor in an upright position, to be moved away by hand, or mechanically by suitable conveying apparatus.

An empty packing case is now slid under the plate 3 and pushed backward until its bottom comes into contact with the stack of cans in the receptacle 4, when the operation as before described is repeated.

It will be understood that when the machine is first started, as described, it requires two operations before a stack of cans are brought into contact with the bottom of the box, but after the first delivery, each operation of the machine will cause the packing case to move forward a distance equal to the length of a can, and in consequence a delivery is effected at the termination of every other stroke of the plunger.

I have described the machine as adapted to charge a case with twenty four cans, but it is evident that the machine can be constructed to fill cases of such size as to hold any number of cans; and also that the details of construction of the machine can be varied, provided the results produced remain prac-

tically the same, without departing from the spirit of the invention.

I claim as my invention:—

1. In a machine for the purpose described, a receptacle for cans, a plunger plate situated in the receptacle with means to effect its forward movement, a runway leading to the receptacle, hinged plates situated at the sides of the runway and exteriorly thereof carrying intercepting rods to hold back cans on the runway, or allow of the passage of cans from the runway to the said receptacle, combined with means to effect the movement of the plunger plate, and other means to actuate the said plates carrying the intercepting rods.

2. In a machine for the purpose described, a receptacle for the cans, a plunger plate situated in the receptacle, a hand lever mechanism to move the plunger plate in a forward or a backward direction in the receptacle, a sliding saddle having a straight and an inclined surface a detachable connection substantially as described between the hand lever mechanism and the saddle, and a runway for the cans leading to the receptacle, combined with devices to alternately interrupt and release the cans on the runway the said devices embracing a roller adapted to bear against either the straight or the inclined surface of the saddle.

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