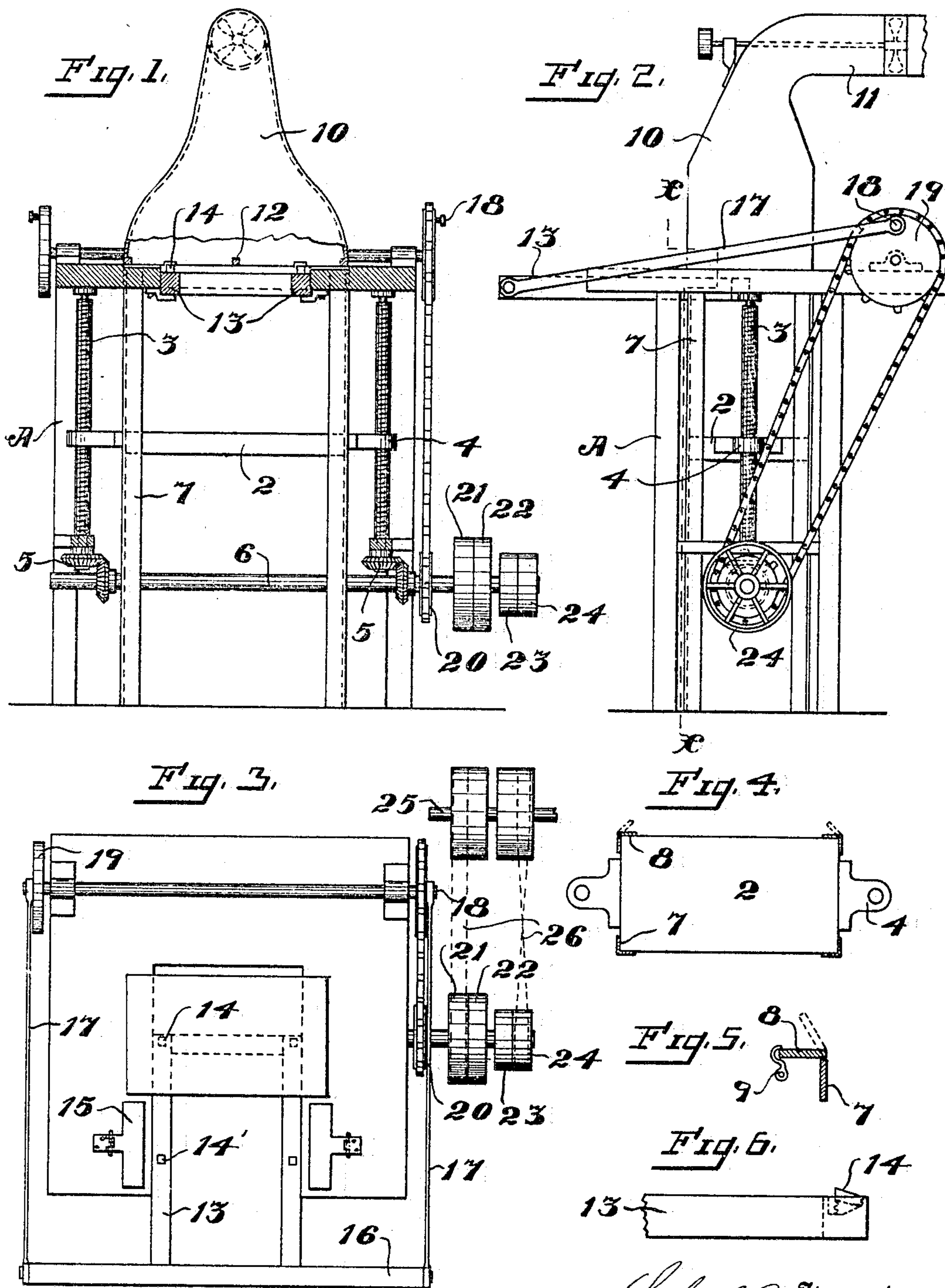


No. 781,855.

PATENTED FEB. 7, 1905.

S. E. WALKER.
 DEVICE FOR FEEDING BLANKS TO CAN MAKING MACHINES.

APPLICATION FILED NOV. 19, 1903.



Witnesses,
James Dudley Moss.

Selah E. Walker Inventor,
By Geo. H. Strong. atty

UNITED STATES PATENT OFFICE.

SELAH E. WALKER, OF SAN FRANCISCO, CALIFORNIA.

DEVICE FOR FEEDING BLANKS TO CAN-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 781,855, dated February 7, 1905.

Application filed November 19, 1903. Serial No. 181,840.

To all whom it may concern:

Be it known that I, SELAH E. WALKER, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Devices for Feeding Blanks to Can-Making Machines, of which the following is a specification.

My invention relates to an apparatus which is designed for feeding sheets of tin singly and successively to be delivered into a machine by which the tin is subsequently formed into can-bodies. Its object is to provide a simple effective means for doing this automatically and rapidly.

It consists of the parts and the construction and combination of parts hereinafter more fully described, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of my machine in partial section on the line *x x*, Fig. 2. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view of the same. Fig. 4 is a plan view of the follower and section of the guides. Fig. 5 is a cross-section of the guide, showing the latch. Fig. 6 is a portion of the carrier, showing the spring-dog.

By my invention I purpose placing the blanks one at a time in the path of the usual reciprocating blank-carrier of the can-making machine by means of a suction device, so feeding the column of blanks as to bring the topmost sheet on the column always into the sphere of influence of the suction means to permit the blank to be lifted and separated from the column, ready to be taken away by the carrier.

A represents a frame of suitable construction supporting the feed mechanism. Within this frame is a vertically-movable follower 2, upon which the column of blank sheets from which the can-bodies are ultimately to be formed are carried. The follower is moved step by step by means of the screws 3, engaging nut projections 4 on the sides of the follower, the screws being driven in unison through the medium of the gears 5 from the horizontal shaft 6. The column of blank sheets is supported and guided in its vertical travel by means of the angular guides 7. The

rearmost guides are formed each with a hinged portion 8, adapted to be turned outward to allow a column of blanks to be placed in position on the follower and then closing in against the column to support it from that side and being locked in position by suitable catches, as 9.

Removably seated over the opening in the frame in which the follower operates is a hood 10, having a connection, as 11, with any suitable suction or exhaust apparatus. The mouth of the hood is open except for some suitable means, as the cross-bar 12, which is to support the flexible tin sheet when the latter has been lifted from the pile and is being held by suction in readiness for the carrying means which will take the sheet to the body-formers. The space beneath the hood is open, so that when the follower has been lifted to bring the top of the blank column within the sphere of influence of the exhaust or suction set up in the hood the topmost sheet will be drawn upward and held against the bottom of the hood. The support 12 serves to prevent any bending or buckling of the sheet, as would otherwise occur on account of the powerful suction. A horizontal carrier is arranged to traverse the space between the hood and column of blank sheets and withdraw the sheets as they are lifted successively and temporarily supported by the suction set up in the hood. In the present instance I have shown carrier 13 as comprising two bars disposed one on each side of the suction-opening in the frame beneath the hood and reciprocable over the blank column on the follower. These bars are provided with the spring-pressed dogs 14, which are adapted to be depressed and slide beneath a lifted sheet, finally to engage the rear edge of it on the rearward movement of the carrier and then to carry the sheet from beneath the hood on the forward reciprocation of the carrier. The bottom of the lifted sheet when in position against the support 12 is approximately flush with the top of the carrier, and as the sheet is drawn off of the hood it passes beneath the laterally-disposed weighted hinged members 15 on the frame which hold the sheet against return when the carrier reverses its movement and allows a suc-

ceeding set of dogs 14' to engage it, and thus advance it step by step from the suction-feeder to the body-forming mechanism, where it is received by nippers or other means for advancing it in its future travels. As soon as one sheet is withdrawn from the hood the exhaust action of the hood will pick up another sheet from the pile in readiness for the carrier on its next forward reciprocation, and in this manner the regular feed of the tin to the body-forming apparatus may be effected.

Any suitable means may be provided to give the follower and the horizontally-reciprocating carrier 13 a coördinate movement whereby the top of the blank column will always be maintained within a certain distance of the mouth of the hood, yet at the same time not feeding the column upward so fast as to narrow the space between the hood and the column and to prevent the proper back-and-forth movement of the carrier.

Inasmuch as the blank-feed carrier of some can-body machines already in use is driven coordinately with the body-forming parts thereof, any suitable connections between the carrier and the follower operating means of my attachment may be employed. In the present instance, however, I have shown the carrier 13 and follower as operated from the shaft. Carrier 13 has a cross-head 16, from which lead the pitmen 17 to the wrist-pins 18 on the sprockets 19. The latter are connected with corresponding sprockets 20 on the ends of shaft 6. By varying the relative sizes of the sprockets any rate of upward travel desired of follower 2 relative to the speed of the horizontal carrier 13 may be obtained.

Motion may be imparted in either direction to the shaft 6 by means of the two sets of fast and loose pulleys 21 22 23 24, the latter being smaller and adapted to run faster for the purpose of running the follower down to receive a fresh charge of blanks, and both sets being run from the power-shaft 25 by the belts 26.

In practice it has been found that this apparatus may be worked at a high rate of speed and with great uniformity of result as compared with ordinary hand feed mechanism. The suction being constant so long as the top of the pile of blanks is within two or three inches, a sheet will jump into position as soon as another is removed. As the suction can act to hold only the sheet which is against the support 12, in case two sheets should be lifted momentarily the under one must necessarily drop back to place. Various devices may be employed to prevent the sheets sticking together.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. A feed mechanism for sheets of tin, consisting of a vertically-movable carrier, a horizontally-reciprocating carrier, means for giving the two carriers a coördinate movement and means including a stationary suction apparatus for transferring sheets singly from one carrier to the other.

2. A feed mechanism for sheets of tin consisting of a vertically-movable carrier, a horizontally-reciprocating carrier, means for giving the two carriers a coördinate movement, and a stationary suction apparatus adapted to lift successively the uppermost of a column of sheets upon the vertically-operating carrier into the path of the horizontally-operating carrier.

3. A feed mechanism for sheets of tin, comprising in combination a carrier, a stationary suction device located above the plane of said carrier and means for delivering sheets of tin successively into the range of said device.

4. A feed mechanism for sheets of tin, comprising in combination a stationary suction device, means for delivering sheets of tin into juxtaposition therewith, whereby the sheet will be lifted from its support and sustained by said device, and means for removing the sheet from said device.

5. A feed mechanism for sheets of tin, comprising in combination a stationary open-mouthed hood, means for creating a suction in said hood, means for delivering sheets across the mouth of said hood and means for removing the sheets so delivered.

6. A feed mechanism for sheets of tin, comprising in combination a stationary hood, means for creating a suction in said hood, a perforated support over the end of said hood, means for bringing sheets into juxtaposition with said support whereby the suction created in the hood will act to lift the sheet and hold it against said support, and means for removing the sheet from said support.

7. In a feed mechanism, the combination with a stationary suction lifting device, of a vertically-movable follower, guides between which said follower operates, said guides adapted to support the column of tin on said follower, and hinged members in conjunction with said guides to admit of the entrance of the sheet-column upon said follower.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SELAH E. WALKER.

Witnesses:

CHARLES A. WILLSON,
AGNES M. ROSER.