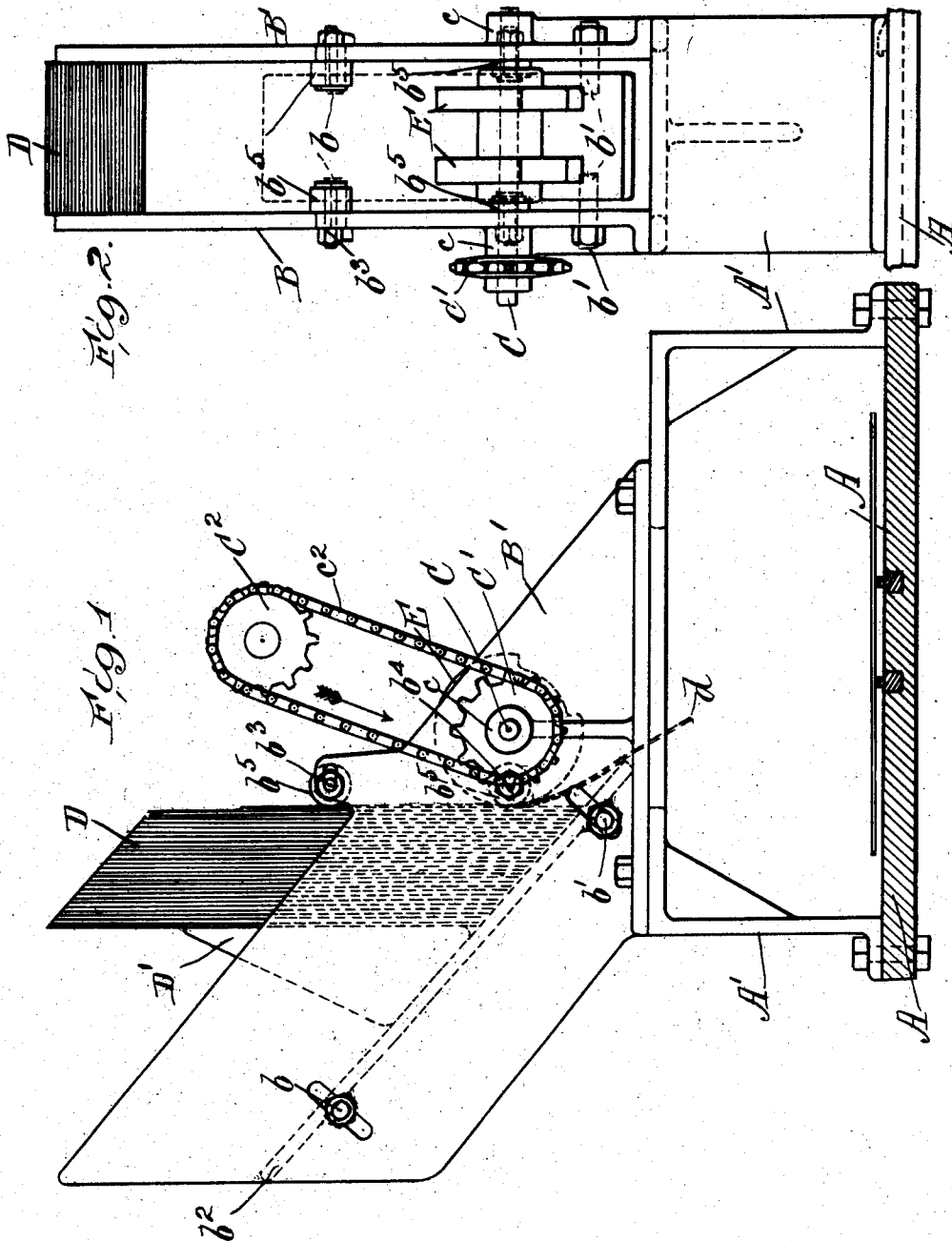


No. 866,160.

PATENTED SEPT. 17, 1907.

B. A. PETERSON.
BLANK FEED MECHANISM.

APPLICATION FILED SEPT. 16, 1903. RENEWED JAN. 17, 1907.



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UNITED STATES PATENT OFFICE.

BURT A. PETERSON, OF CHICAGO, ILLINOIS.

BLANK-FEED MECHANISM.

No. 866,160.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BURT A. PETERSON, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Blank-Feed Mechanism; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to a machine adapted to feed blanks of sheet metal such as tin to a receiving machine as for instance a can body machine or the like.

Heretofore considerable difficulty has been found in feeding such blanks automatically from a stack or pile to the various rapidly operating automatic machines adapted to receive the same. One serious objection to many of the automatic feed devices heretofore used is that frequently two or more blanks are fed simultaneously instead of but one as required thus wasting stock and causing frequent delays and breakages of machinery. It is also true that with the suction feed mechanisms heretofore used it has been difficult, if not impossible to feed the blanks continuously to the receiving machine as from the nature of these feed mechanisms a considerable interval necessarily occurs between delivering the successive blanks and even with feed mechanisms of this class it is not uncommon to have two or more blanks fed at the same time. Furthermore with the devices heretofore used complicated mechanisms have been required likely to frequently get out of order.

The object of this invention is to provide a construction adapted to permit the blanks to be fed either at intervals apart or in a continuous line as preferred, and so constructed as to absolutely preclude the possibility of more than one blank coming from the device at one time thus remedying the objections above stated.

It is also an object of the invention to provide an extremely strong, cheap, simple and durable construction adapted for either slow or rapid operation and not likely to get out of order.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a side elevation of a device embodying my invention showing the table of the receiving machine in transverse section. Fig. 2 is a rear elevation of the same with the upper driving shaft omitted.

As shown in said drawings: A indicates the table of the receiving machine such as a can body machine adapted to receive the flat blanks at one end of the machine and to form the same into can bodies or to other desired forms as they pass through the machine. Supported upon the front end of said table A of the machine

is the supporting frame of the feed mechanism comprising the uprights A'-A', rigidly bolted to the margins of the table A and of a sufficient height to provide space for the blank to fall in operative position upon said table. Rigidly bolted to said frame at its top and connecting the uprights A'-A' are the parallel side frame members B-B' which are connected together and held in parallel relations by means of the frame members B and also by means of a shaft C upon which is carried the operating means for feeding the blanks.

An adjustably inclined bottom b² is secured between said side members by means of laterally directed studs b-b' secured thereon which project through the transversely slotted apertures in said plates B and B' and are rigidly secured in said side members by means of nuts threaded on the ends of said studs thereby affording support for the inclined table b² which is more plainly shown in dotted lines in Fig. 2. Owing to the apertures being slotted the inclination of said table can be varied to the most effective angle to secure the ready discharge of the blanks therefrom. As shown other studs b³-b⁴ project inwardly through the plates B and B' and are each provided with a roller b⁵ thereon. Said rollers b⁵ are located one directly above the other and serve to hold the stack of plates or blanks D in vertical position during the operation of the machine. Said blanks are supported from behind by means of the sliding angle block D' shaped to fit closely in the angle formed by the adjustable table and the stack of blanks.

Rigidly secured on the shaft C which as shown is journaled in bosses c integral with said plates B and B', are the friction rollers or wheels E which in the construction shown are of a diameter sufficiently great to permit the periphery thereof to project slightly beyond the rollers b⁵ on the studs b³-b⁴ and bear firmly against the innermost blank. A sprocket wheel C' is rigidly secured on the outer end of said shaft in position to receive a sprocket chain c² trained over the sprocket wheel C² driven from any source of power but preferably in operative connection with the driving means for the machine to which the blanks are fed and timed therewith to deliver the blanks at the proper moment into said receiving machine.

The operation is as follows:—With the blanks arranged as shown in Figs. 1 and 2 or in other words in close contact and standing on end with the innermost bearing against the rollers b⁵ and the periphery of the friction wheels E the rotation of said friction wheels in the direction indicated by the arrow in Fig. 1 draws said innermost blank d downwardly along the inclined table bending the same sufficiently to spring the same away from the adjacent blanks separating the same therefrom and eventually dropping the blank upon the table A in position to be fed into the machine. As each blank is drawn downwardly and away from

the remaining blanks in the stack gravity tends to slide the stack into position for the next blank to be supported by the rollers b^5 in position to be engaged by the friction wheels. If the periphery be a true circle the next blank is engaged the moment the preceding blank is released therefrom and for this reason the device can be timed to deliver a continuous succession of blanks to the receiving table with no appreciable interval between successive blanks. Obviously if it is desired to provide an interval between the blanks as is necessary in the case of some receiving machines, the feed mechanism may be run slower or as shown in the drawings the periphery of the friction wheels E may be cut away for a part of the circumference so that for a part of a revolution of said friction wheels the same are out of engagement with the blanks. In the event of the periphery of said wheels being mutilated it is obvious that no movement of the blanks can occur while the mutilated portion of the periphery is passing the same but the remaining portion of the periphery should be of a length to insure the blank being carried free of the friction wheels. Obviously the interval between successive blanks is determined by the speed of rotation of said friction wheels and the portion of their peripheries removed.

The friction wheels may be of any suitable material and may be driven by any suitable means and many details of construction may be varied without departing from the principles of this invention.

I claim as my invention:-

1. In a blank feed mechanism the combination with supporting rollers placed one above the other of a table beneath the same adapted to be adjustably inclined at each end thereof and support a plurality of blanks and positively driven friction wheels having notched peripheries adapted to engage the innermost blank and draw it downwardly on and from the inclined table.
2. In a device of the class described the combination with an inclined table adapted at either end for adjustment, of means supporting a plurality of blanks thereon vertically and in close contact, rotative friction wheels

adapted to engage one of said blanks during a part of each revolution thereof and to remain out of engagement during the remainder of the revolution and means for rotating said friction wheels acting to draw one of said blanks away from the stack.

3. The combination with a plurality of vertically arranged blanks of an inclined table supporting the same, a plurality of rollers supporting the front end of said stack near the lower end of the table, an angle block slidable on the table and supporting the rear side of the stack and parallel friction wheels journaled in front of said rollers and projecting beyond the same and provided with notched peripheries adapted to engage a blank at intermittent intervals.

4. The combination with an inclined table of a stack of blanks supported vertically thereon, means for varying the inclination of said table, a pair of friction wheels provided with irregular peripheries adapted to engage said blanks during part of each revolution and to draw them downwardly and to remain out of contact therewith during the remainder thereof and an angular follower block positioned behind the blanks acting to move the same forwardly and to support the same.

5. The combination with a chute, of an inclinable floor therein adapted to be adjusted at either end, inwardly projecting rollers in the chute one above the other and adapted to support a plurality of blanks in close contact and in an upright position therein and one or more notched friction rollers journaled to project beyond the inner face of said inwardly projecting rollers adapted to engage said blanks during part of each revolution and to remain out of such engagement during the remainder thereof.

6. The combination with a chute, of an adjustably inclinable floor therein, inwardly projecting rollers in the chute one above the other and adapted to support a plurality of sheet metal blanks in close contact and standing on end and one or more friction wheels having a part of the periphery cut away operating on the lower end of the chute and against which and said rollers the first blank presses and acting by rotation to draw the blanks successively from the stack at intervals apart.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

BURT A. PETERSON.

Witnesses:

C. W. HILLS,
A. C. ODELL.