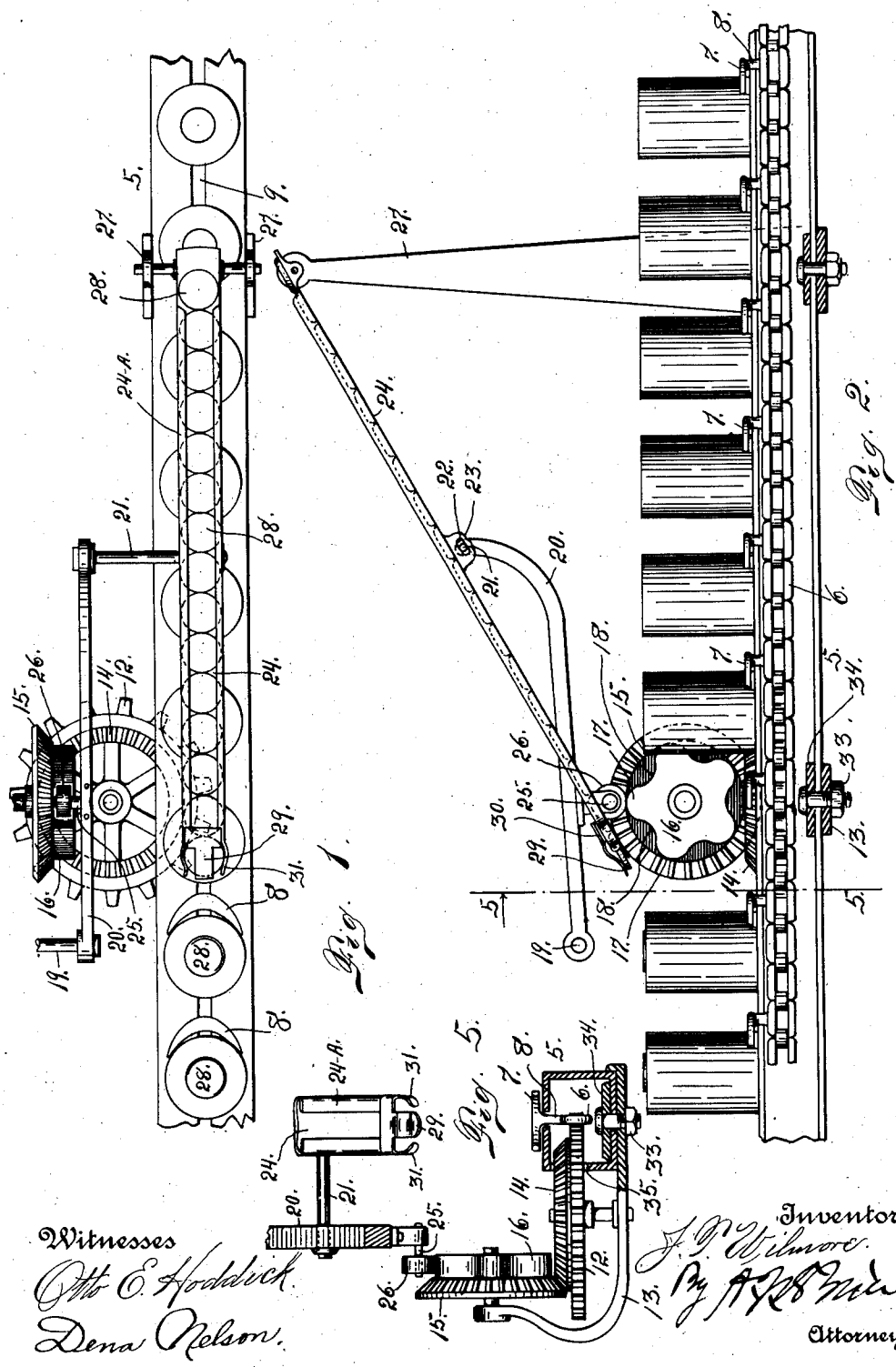
No. 882,728. PATENTED MAR. 24, 1908.

J. T. WILMORE.

CAN CAP PLACING APPARATUS.

APPLICATION FILED MAR. 20, 1906.

2 SHEETS—SHEET 1.



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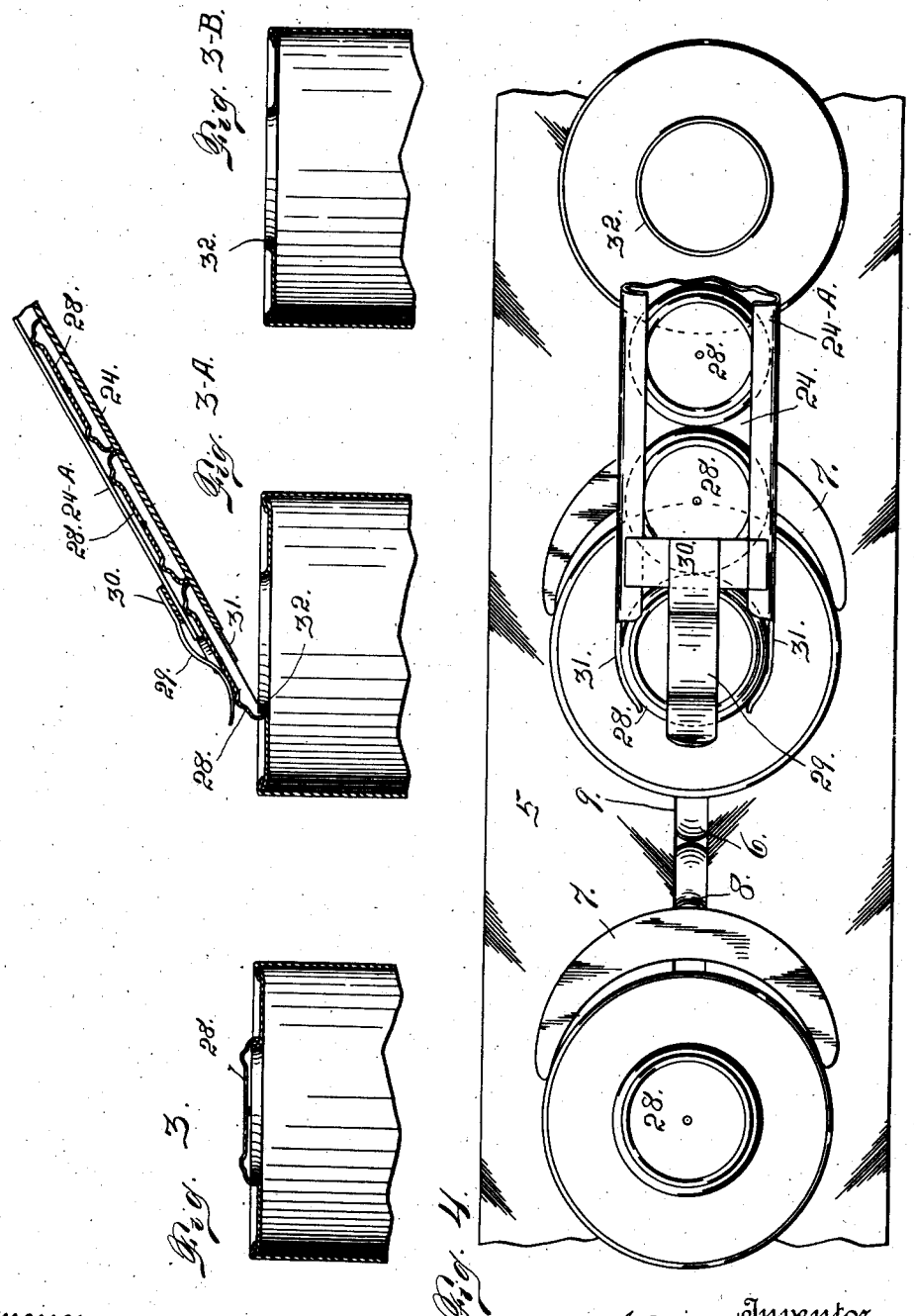
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UNITED STATES PATENT OFFICE.

JOHN T. WILMORE, OF DENVER, COLORADO.

CAN-CAP-PLACING APPARATUS.

No. 882,728. Specification of Letters Patent. Patented March 24, 1908.

Application filed March 20, 1906. Serial No. 306,978.

To all whom it may concern:

Be it known that I, JOHN T. WILMORE, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Can-Cap-Placing Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for placing can caps upon the cans preparatory to soldering, the said apparatus constituting a portion of the construction used in a plant where various kinds of goods are put up in cans. In establishments of this character it is very important that as much time as possible be saved during every step or stage of the work. My improved apparatus is designed to facilitate the step of placing the caps upon the cans as before intimated.

The invention will now be described in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a top plan view of my improved can-cap-placing apparatus shown in connection with a traveling conveyer on which the cans to be capped are mounted. Fig. 2 is a side elevation of the same. Fig. 3 is a view showing the upper portion of a can with the cap in place. Fig. 3^A is a similar view of a can showing the can cap chute in section and in the position at the beginning of the performance of the can cap placing function. Fig. 3^B shows a can in position to receive a cap as it is carried along by the conveyer. Fig. 4 is a top view illustrating the apparatus shown in Figs. 3, 3^A and 3^B, the conveyer, however, being shown in addition to the cans and cap placing chute. Fig. 5 is an end elevation partly in section taken on the line 5—5 Fig. 2 looking in the direction of the arrow.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a slotted track or support and 6 a conveyer chain provided with flights 7 projecting above the track 5, the flights being provided with necks 8 which pass through the slot 9 of the track. The flights are approximately crescent shaped as shown in Figs. 1 and 4 whereby they are adapted to conform in some degree to the curve of the cans to be capped. As these cans are of varying size it is impracticable to have the flights so formed as to exactly fit the cans. An exact fit in this regard, however, is not essential.

A sprocket wheel 12 occupying a horizontal plane is journaled in a suitable support 13, the wheel being so arranged that its teeth engage the links of the conveyer chain 6. This sprocket is also provided with a gear 14 which meshes with a vertically disposed gear 15 journaled in an upright part 13^A of the horizontal support 13. Formed on the gear 15, is a cam 16 having a series of projections 17 and recesses 18 the projections and recesses alternating in order to give vibrating vertical or upward and downward movement to a device resting thereon.

An arm 20 is pivotally mounted at one extremity on a support 19, the other extremity being made fast to a pin 21 extending laterally above the track 5, its extremity remote from the arm 20 passing through a slot 22 formed in a lug 23 fast on the under side on an inclined chute 24. The arm 20 intermediate its extremities is provided with a laterally projecting spindle 25 upon which is journaled a roller 26 adapted to engage the periphery of the cam 16 whereby an upward or downward movement or vertical vibration is imparted to the arm 20 and indirectly to the chute 24. This chute is pivotally mounted at its upper extremity to a suitable support 27 while its lower portion is supported by the arm 20 and the pin 19 as aforesaid. This chute is provided with inwardly turned flanges 24^A and is of sufficient depth to allow can caps 28 to pass down the chute, their outer edges passing below the flanges of the chute, the said flanges retaining the caps in place and preventing any tendency to move upwardly or escape from the chute.

The upper and lower extremities of the chute are both open one for the reception of the caps and the other for their escape. The lower extremity of the chute is provided with a top spring 29 which is secured to the chute at 30 and projects somewhat below the same whereby it is caused to engage each can cap as the latter passes downwardly and is about to escape from the chute. The lower extremity of this chute is also provided on opposite sides with stop springs 31 which en-

gage the caps as they reach the lower extremity of the chute and are about to escape therefrom. These springs allow the lowermost portion of the rim of each cap to engage the upwardly turned ledge 32 of a can. As the can cap engages the ledge of the can as shown in Fig. 3^A, the cap is held by the can and as the latter travels along with the conveyer, the cap is drawn out of the chute between the tension springs 31 and forced downwardly by the spring 29 whereby it is accurately placed upon the can for soldering purposes. In this manner each can as it travels along receives a cap from the chute the said caps moving downwardly through the chute successively and by gravity, their downward movement being to some extent facilitated by the vibration imparted by the actuating arm 20.

As shown in the drawing the track 5 forms a sort of conduit shown in cross section in Fig. 5 through which the link portion of the conveyer travels. This track has its lower portion bolted to the support 13 the bolt being designated 33, the said bolt passing through a plate 34 which facilitates the securing of the track in place. The upright wall of the track is cut away on one side as shown at 35 to allow the sprocket wheel 12 to enter in order to engage the conveyer chain 6.

From the foregoing description the use and operation of my improved apparatus will be readily understood. Assuming that the cans are carried along by the conveyer the same resting upon the top of the track 5 and being engaged by the crescent-shaped flights 7, the caps are fed downwardly automatically through the chute 24 and caused to engage ledges or upwardly projecting parts surrounding the openings of the cans. The chute is raised and lowered alternately by the cam 16 whose periphery is shaped to produce this result. The arm 20 and its roller 26 act upon the chute to operate the same as heretofore explained. Every time the lower extremity of the chute moves downwardly, due to a depression or recess in the cam 16, the cap at the lower extremity of the chute, catches upon the ledge or upwardly projecting rim of the can and holds thereto with sufficient force to cause the cap to be drawn from the chute as the can continues its travel. As soon as one cap passes out of the chute another moves downward automatically and takes its place and is in position for the next can. After placing any cap upon a can, the lower extremity of the chute is raised since a projection 17 engages the roller 26 and acts on the arm 20 to cause it to lift the chute.

The caps are fed to the upper extremity of the chute in any suitable manner.

Attention is called to the fact that it is necessary that the lower extremity of the chute should be alternately raised and lowered, since otherwise the can cap protruding from the lower extremity of the chute would catch on the outer edge of the can after placing a cap, since the top of the ledge surrounding the opening in the top of the can, lies in the same plane as the outer rim or ledge surrounding the top of the can and projecting above the head thereof. Hence as soon as the cap is placed, if the lower extremity of the chute were not immediately raised, the can cap would catch upon the outer rim of the can and pull out a cap in the same manner as is done by the ledge surrounding the opening as heretofore explained.

Attention is called to the fact that in Fig. 2 of the drawing one of the cans is omitted in order to show more clearly the apparatus for operating the chute.

Having thus described my invention, what I claim is:

1. In can-cap-placing apparatus, the combination with a conveyer for the cans to be capped, of a can cap chute movably mounted above the cans and in the plane of the conveyer, the lower extremity of the chute being provided with springs arranged on opposite sides, and a top spring projecting beyond the discharge extremity thereof and acting on the caps from above.

2. In a can cap placing apparatus, the combination with a conveyer for the cans to be capped, of a can-cap-carrying chute movably mounted above the cans and inclined to the plane of the travel of the conveyer, and suitable means acting on the chute whereby the latter is alternately raised and lowered.

3. In can-cap-placing apparatus, the combination with a conveyer for the cans to be capped, a can-cap-carrying chute mounted above the cans and inclined to the plane of the conveyer, the lower extremity of the chute being open for the escape of the caps and provided with tension springs arranged on opposite sides, and a top spring acting on the caps from above, all of the said springs protruding from or beyond the lower extremity of the body of the chute.

4. In can-cap-placing apparatus, the combination with a conveyer for carrying the cans to be capped, of an inclined can cap chute mounted above the conveyer and in the plane thereof, and suitable means acting on the chute whereby the latter is alternately raised and lowered.

5. In can-cap-placing apparatus, the combination of a conveyer for carrying the caps, the said conveyer being provided with a chain, a sprocket wheel propelled by the chain, the sprocket wheel being provided with a gear, another gear occupying a position at right angles to the sprocket gear and carrying a cam composed of alternating recesses and projections, an inclined can-cap-carrying

chute arranged in the plane of the conveyer and the cans mounted thereon, and an arm movably connected with a stationary support at one extremity while its other extremity is pivotally connected with the chute, the said arm having a projection adapted to engage said cam whereby as the cam is rotated, the chute is alternately raised and lowered.

6. In can-cap placing apparatus, the combination with a conveyer for carrying the cans to be capped, a chute mounted above the conveyer and in the plane thereof, the said chute being constructed to carry can caps, and suitable means acting on the chute and operated from the conveyer, for alternately raising and lowering the lower extremity of the chute for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. WILMORE.

Witnesses:
A. J. O'BRIEN,
DENA NELSON.