Aug. 5, 1924. 1,503,585

B. T. HEADLEY ET AL

FEEDING DEVICE FOR VIAL MACHINES

Original Filed Nov. 15, 1919 3 Sheets-Sheet 1

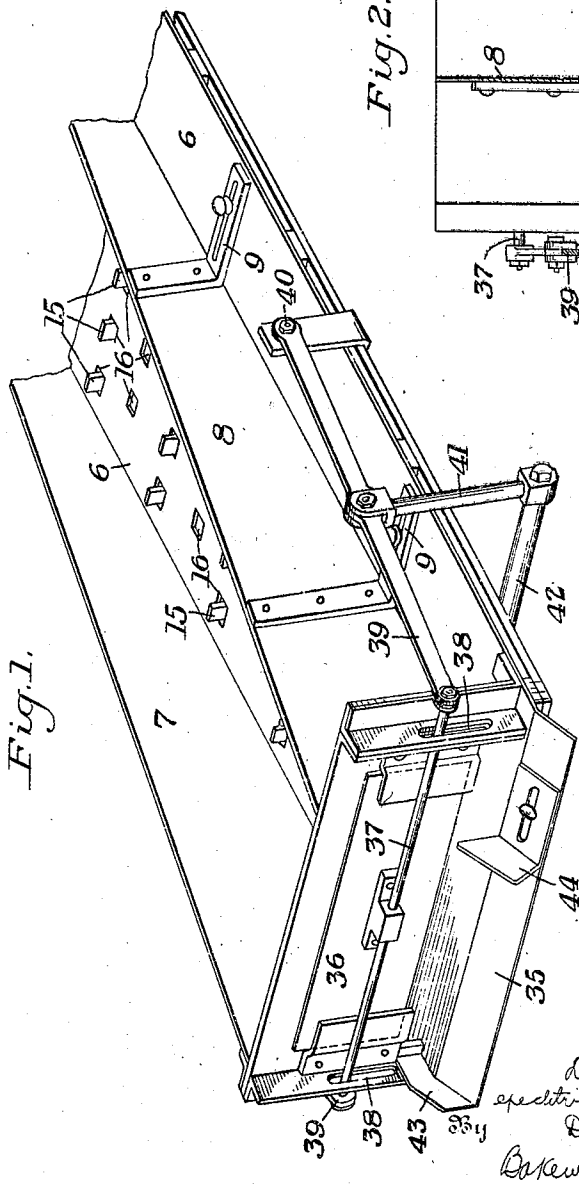


Fig. 1.

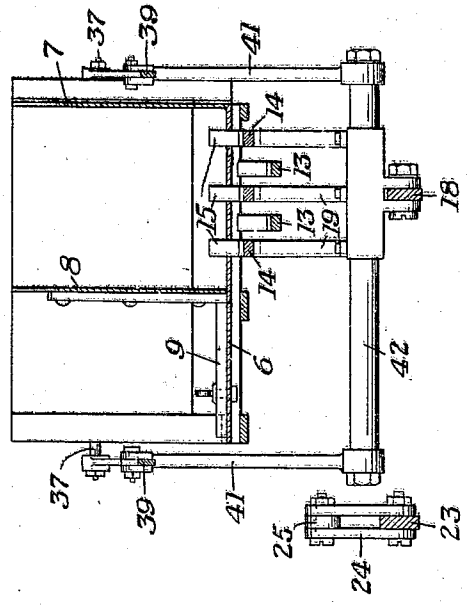


Fig. 2.

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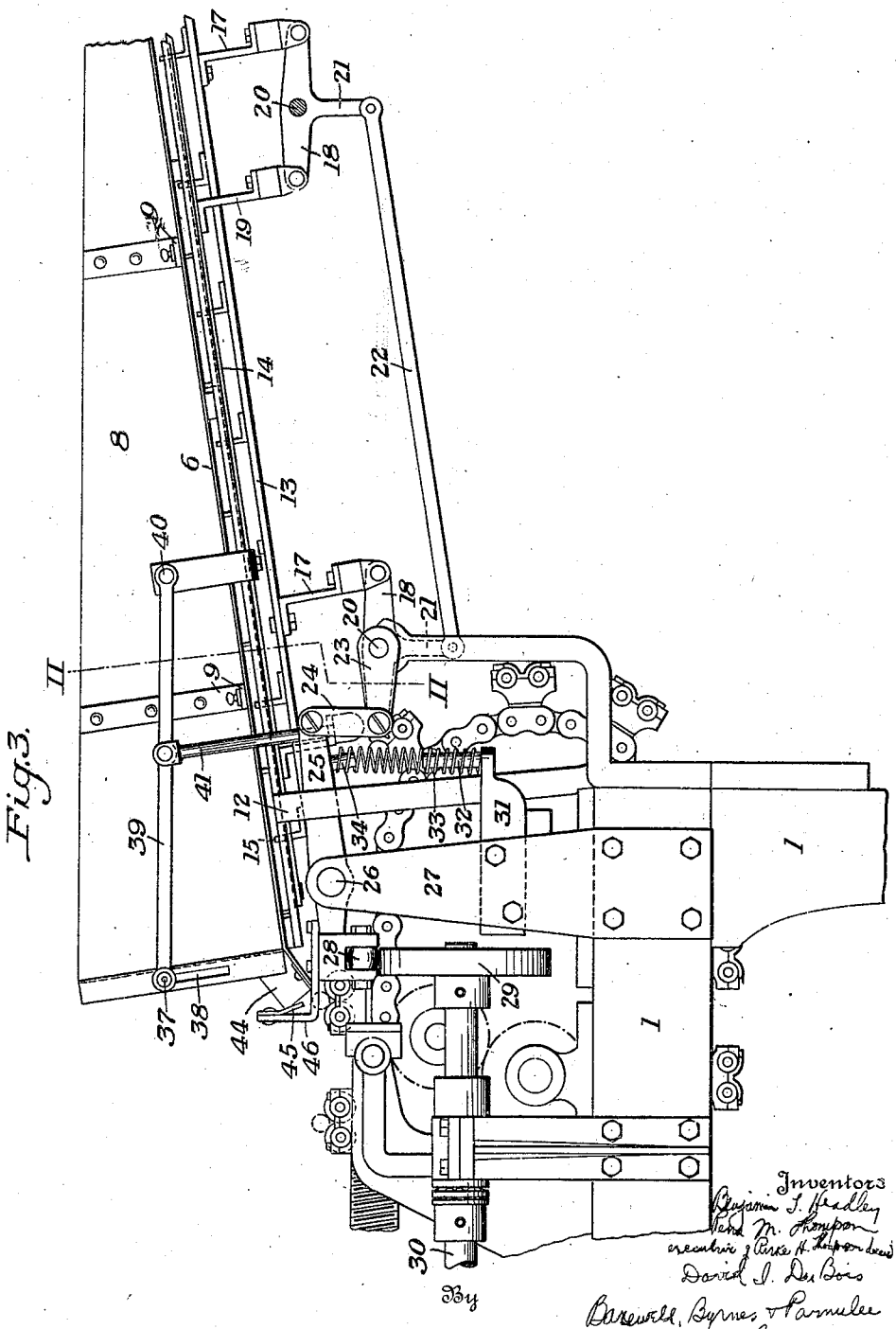
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Fig. 3.



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FEEDING DEVICE FOR VIAL MACHINES

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Fig. 4.

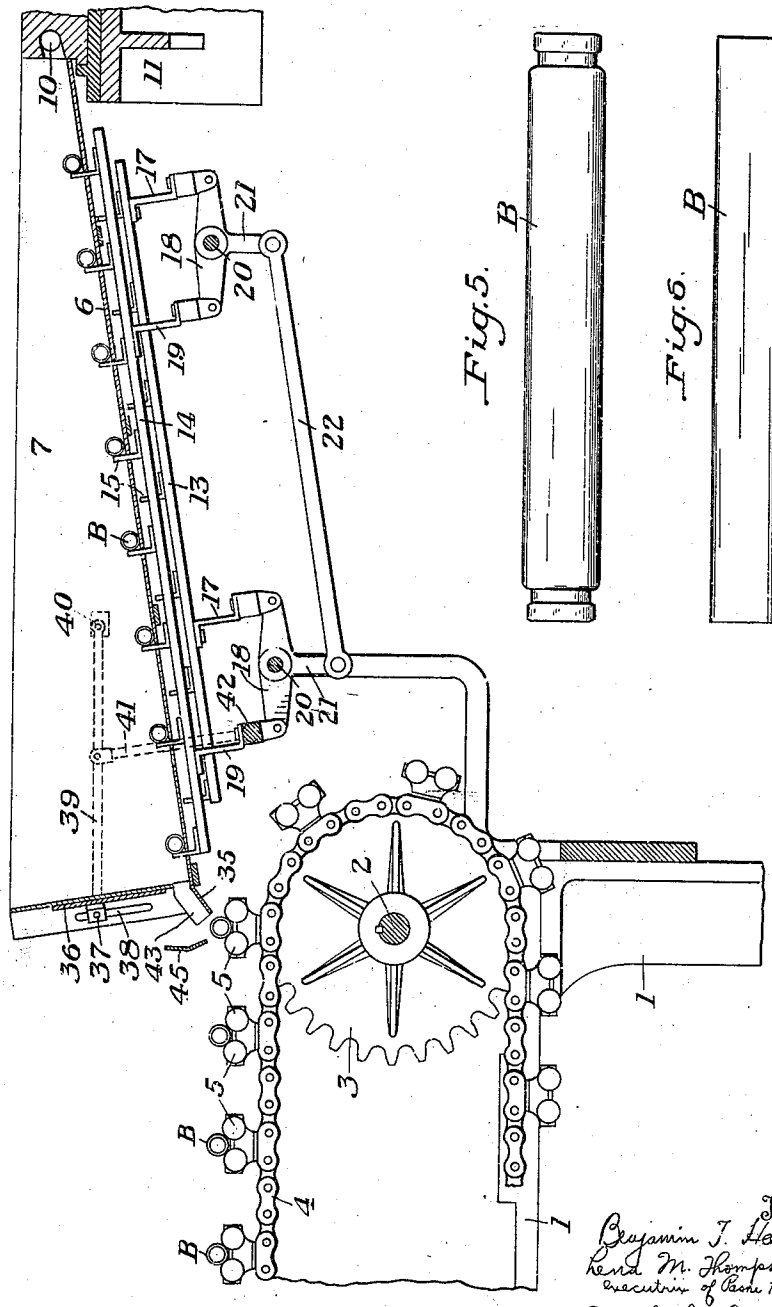


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

BENJAMIN T. HEADLEY, OF MILLVILLE, NEW JERSEY, AND PARKE H. THOMPSON, DECEASED, LATE OF MILLVILLE, NEW JERSEY; BY RENA M. THOMPSON, EXECUTRIX, AND DAVID IRWIN DU BOIS, OF MILLVILLE, NEW JERSEY, ASSIGNORS TO WHITALL-TATUM COMPANY, OF MILLVILLE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

FEEDING DEVICE FOR VIAL MACHINES.

Original application filed November 15, 1919, Serial No. 338,179. Divided and this application filed January 26, 1921. Serial No. 440,115.

To all whom it may concern:

Be it known that BENJAMIN T. HEADLEY, PARKE H. THOMPSON, deceased (whose executrix is RENA M. THOMPSON), and DAVID IRVIN DU BOIS, all citizens of the United States, residing at Millville, in the county of Cumberland and State of New Jersey, have invented a new and useful Improvement in Feeding Devices for Vial Machines, of which the following is a full, clear, and exact description.

The present invention relates broadly to feed devices for vial-working machines, and more particularly to a hopper feed for vial-bottoming machines.

An important object of the present invention is to provide a form of feed device adapted to contain a plurality of vial blanks for delivery to a vial-bottoming or other machine, and adapted to feed the blanks as required.

Another object of the present invention is to provide a hopper feed device adapted to receive vial blanks directly from a necking machine and retain the same in position to be fed to a bottoming machine as required.

Still another object of the invention is to provide an adjustable hopper adapted to receive and hold a plurality of vial blanks.

A further object of the invention is to provide a hopper feed device having means for gradually feeding the blanks in timed relation to the operation of the machine to which they are fed.

A still further object of the invention is to provide a hopper feed device having a discharge chute with means for controlling the passage of blanks thereto.

An additional object of the invention is to provide a discharge chute of the character described which is adjustable to accommodate blanks of different lengths, and which co-operate with a guard insuring proper delivery of the blanks to the vial working machine.

The foregoing and other objects of the present invention, together with their attendant advantages, will be apparent as the invention becomes better understood by reference to the accompanying specification and drawings forming a part thereof, it being premised that changes may be made in the various details and manner of operation within the scope of the appended claims without departing from the spirit of the invention.

In the drawings:

Figure 1 is a perspective view of the hopper feed device;

Figure 2 is a transverse sectional view on the line II—II of Figure 3;

Figure 3 is a side view of one end of a vial bottoming machine having the hopper applied thereto;

Figure 4 is a longitudinal sectional view of the mechanism disclosed in Figure 3, and also illustrating a portion of a vial necking machine;

Figure 5 is a side elevation of a necked blank of the type which may be fed by the hopper to the bottoming machine, and

Figure 6 is a view corresponding to Figure 5 of a straight blank for wide mouthed bottles.

Referring more particularly to the drawings, there is illustrated a portion of the frame 1 of a vial working machine, in the present case a vial bottoming machine of any desired construction, comprising generally a transversely extending shaft 2 adapted to be intermittently or continuously rotated in any desired manner, not shown. Mounted on the shaft is a sprocket wheel or wheels 3 over each of which passes an endless carrier 4. The endless carriers and sprocket wheels 3 lie in the same horizontal plane and therefore only one of each appears in the drawings. These carriers are preferably flexible, and may comprise link belts or chains, having secured to certain of the links thereof blank carriers 5 of any desired construction adapted to receive the vial blanks B. It will be understood that in machines of this nature, the endless carriers are moved to successively bring the different blank supports with their blanks thereon first to a plurality of heating stations and thereafter to separating and bottoming stations as is customary in the art. As the construction of the vial working machine constitutes no essential feature of the

present invention, it is not illustrated in detail, but may be built in accordance with the disclosure of our co-pending application, Serial No. 338,179, filed November 15, 1919, of which this is a division. The present application involves more particularly the feeding of the vial blanks to the blank supports on the endless carrier, and this mechanism will now be described in detail.

This feed mechanism preferably comprises a hopper having an inclined bottom 6, with one fixed side 7 and an adjustable side 8. Any desired means, such as brackets 9, having suitably slotted openings formed therein, may be provided for accomplishing this adjustment to accommodate the hopper to vial blanks B of different lengths.

It will be apparent that the blanks may be manually placed in the hopper, although it is preferably constructed of such length that the open receiving end thereof may co-operate directly with the ejection opening 10 of a vial necking machine 11, as shown in Figure 4. The delivery end of the hopper extends over the receiving end of the bottoming machine, and may be supported on any suitable bracket 12 carried by the frame 1 of the machine.

Below the bottom 6 of the hopper are a series of bars 13 and 14, which bars are provided with upwardly extending fingers 15 projecting through openings 16 in the bottom of the hopper. The bars 13 have a connection 17 with one end of each of the T or walking levers 18, while the bars 14 have a similar connection 19 with the opposite ends of the levers 18. Both of these levers have pivotal supports 20 and are formed with downwardly extending arms 21 connected by a link 22 which insures the walking levers moving in unison. For oscillating the levers to produce the desired feeding movement of the fingers 15, one of the pivots 20 may be provided with a crank arm 23 having a pivotal connection with a link 24, carried by a lever 25 pivotally supported at 26 on a bracket 27 secured to the main frame 1 of the bottoming machine. The forwardly projecting end of the lever 25 carries a roller 28 adapted to cooperate with a cam 29 on a longitudinally extending shaft 30 of the bottoming machine. This shaft may be rotated in any desired manner, not shown, for operating the lever 25.

Extending rearwardly from the bracket 27 is a seat 31 having a projection 32 thereon, adapted to receive a compression spring 33, the opposite end of which surrounds a similar projection 34 on the lever 25. It will now be apparent that the cam 29 periodically operates the lever 25, through the mechanism described, against the action of the compression spring 33 to lower the bars 14 and raise the bars 13. As soon as the high point on the cam passes from engagement with the roller 28, the compression spring will function to raise the bars 14 and lower the bars 13 to their original positions. Each operation of this character will release the vial blanks from engagement with the fingers 15 on one of the bars and permit the same to roll along the hopper bottom into engagement with the next series of fingers. By means of this construction and operation, a gradual feed of blanks is insured, and the rate of feed may be so controlled that the hopper operates in timed relation both with the necking machine and the bottoming machine.

At its delivery end, the hopper may be provided with a chute 35 adapted to deliver the blanks directly onto the supports 5 on the endless carriers 4 of the bottoming machine. Passage of the blanks to the chute may be controlled by means of a sliding gate 36 reciprocated by a bar 37 suitably secured thereto and extending transversely of the hopper through elongated openings 38 in the opposite sides thereof. The opposite ends of the bar 37 are in turn suitably secured to one end of the levers 39 each having a pivotal mounting 40 for their opposite ends. Intermediate their ends the levers 39 are joined to pitman rods 41 secured to a transversely extending operating member 42. This operating member may in turn be connected to one of the T levers 18 so the gate 36 will be elevated and lowered in accordance with the movement of said lever.

The chute 35 may also be provided with a stationary side 43 and an adjustable side 44. There is also preferably provided a guard 45 carried by the bracket 46 for preventing the vial blanks from being delivered beyond the supports 5.

Figures 5 and 6 illustrate clearly types of blanks adapted to be operated upon by the bottoming machine as fed thereto by the hopper. The blanks shown in Figure 6 are adapted for the production of wide-mouthed vials.

It will be apparent that the provision of a hopper of this nature makes it possible to use the vial bottoming machine independently of the necking machine. When this is done, the vial blanks, either necked or unnecked, may be manually placed in the hopper and the operation of the mechanism employed in connection therewith will insure an orderly delivery of the same.

The present invention is a division of our copending application, Serial No. 338,179, filed November 15, 1919.

The advantages of the present invention arise from the provision of a feed mechanism adapted to cooperate both with a necking machine and a bottoming machine to insure the proper transfer of the vial blanks.

Further advantages of the present invention arise from the provision of a hopper adapted to receive a plurality of vial blanks and feed the same one by one in time sequence as required.

We claim:

1. A hopper feed device for vial bottoming machines, comprising an inclined bottom, means for delivering vial blanks thereto, means for retarding the travel of said blanks over said bottom, a discharge chute and means controlling the passage of the vial blanks through said chute, substantially as described.

2. A hopper feed device for vial bottoming machines, comprising an inclined bottom member having a series of openings therein, a series of bars below said bottom having fingers extending through said openings, and means for alternately operating said bars to restrict the feed of blanks through said hopper, substantially as described.

3. A hopper feed device for vial working machines, comprising an inclined bottom having a series of openings therein, bars below said bottom having fingers adapted to project through said openings, and means for alternately oppositely operating said bars to alternately raise certain of said fingers and lower other of said fingers, substantially as described.

4. A hopper feed device for vial working machines, comprising an inclined bottom, a fixed side cooperating therewith, an adjustable side cooperating therewith, a discharge chute for said hopper, and a guard cooperating with said chute, substantially as described.

5. A hopper feed device for vial working machines, comprising an inclined bottom, a fixed side cooperating therewith, an adjustable side cooperating therewith, a discharge chute for said hopper, a guard cooperating with said chute, and an adjustable side for said chute, substantially as described.

6. A hopper feed device for vial working machines, comprising an inclined bottom, a fixed side cooperating therewith, an adjustable side cooperating therewith, a discharge chute for said hopper, and a reciprocable gate controlling the feed to said chute, substantially as described.

7. A hopper feed device of the character described, comprising a bottom, sides cooperating therewith, means for adjusting one of said sides to change the width of the hopper, a plurality of fingers adapted to be projected above said bottom, and means for alternately raising certain of said fingers and simultaneously lowering other of said fingers, substantially as described.

8. A hopper feed device of the character described, comprising a bottom having openings therein, bars below said bottom, a lever having an intermediate pivotal mounting and connected on opposite sides of said mounting with alternate bars, means for oscillating said lever, and fingers on said bars adapted to extend through said openings, substantially as described.

9. A hopper feed device of the character described, comprising a bottom having openings therein, bars below said bottom, a lever having an intermediate pivotal mounting and connected on opposite sides of said mounting with alternate bars, means for oscillating said lever, a spring for returning said lever to its original position, and fingers on said bars adapted to extend through said openings, substantially as described.

10. A hopper feed device of the character described, comprising an inclined bottom having a series of openings therein, bars below said bottom provided with fingers adapted to be projected through said openings, means for holding one of said bars normally in raised position and one of said bars normally in lowered position, and means for reversing the positions of said bars, substantially as described.

11. A hopper feed device of the character described, comprising an inclined bottom having a series of openings therein, bars below said bottom provided with fingers adapted to be projected through said openings, resilient means for holding one of said bars normally in raised position and one of said bars normally in lowered position, and means for reversing the positions of said bars, substantially as described.

12. A hopper feed device of the character described, comprising an inclined bottom having a series of openings therein, bars below said bottom provided with fingers adapted to be projected through said openings, means for holding one of said bars normally in raised position and one of said bars normally in lowered position, and means for periodically reversing the positions of said bars, substantially as described.

13. A hopper feed device of the character described, comprising an inclined bottom having a series of openings therein, bars below said bottom provided with fingers adapted to be projected through said openings, means for holding one of said bars normally in raised position and one of said bars normally in lowered position, means for reversing the position of said bars, and a gate controlling the feed from said device, substantially as described.

14. A hopper feed device of the character described, comprising an inclined bottom having a series of openings therein, bars below said bottom provided with fingers adapted to be projected through said openings, means for holding one of said

bars normally in raised position and one of said bars normally in lowered position, means for reversing the position of said bars, and a gate controlling the feed from said device, said gate being operated in unison with said bars, substantially as described.

In testimony whereof, we have hereunto set our hands.

BENJAMIN T. HEADLEY.
RENA M. THOMPSON,
Executrix of Parke H. Thompson, Deceased.
DAVID IRVIN DU BOIS.