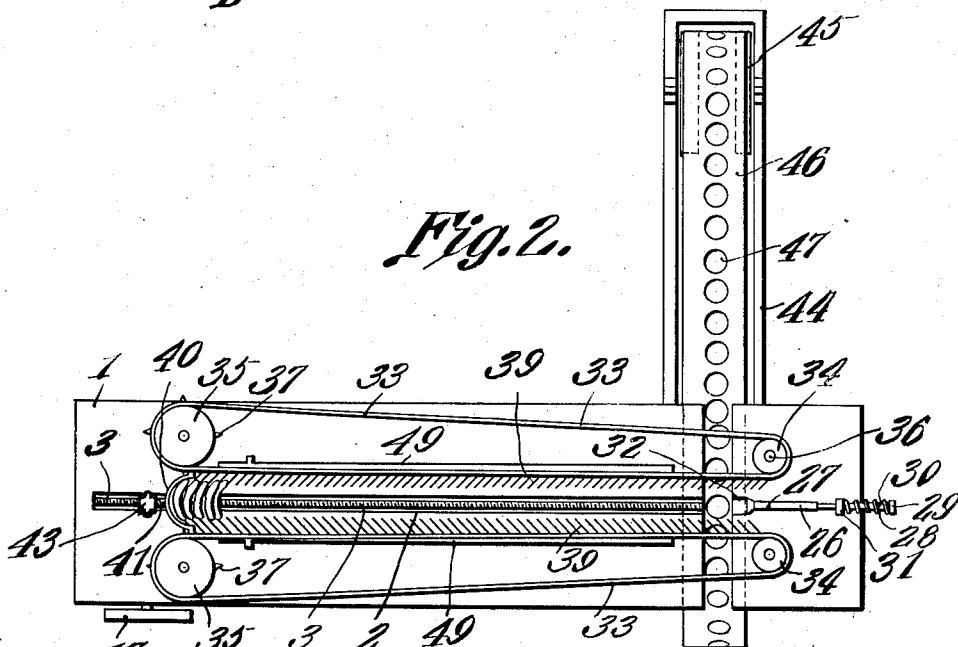
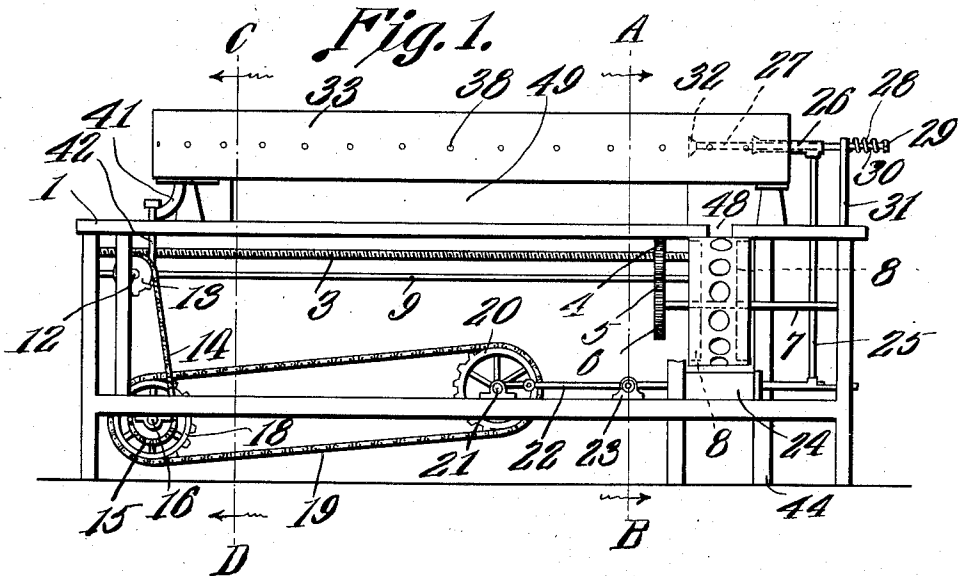


C. E. WENDTE & J. NASH.
MACHINE FOR APPLYING CARTONS TO BOTTLES.
APPLICATION FILED MAR. 27, 1911.

1,016,805.

Patented Feb. 6, 1912.

3 SHEETS—SHEET 1.



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Witnesses

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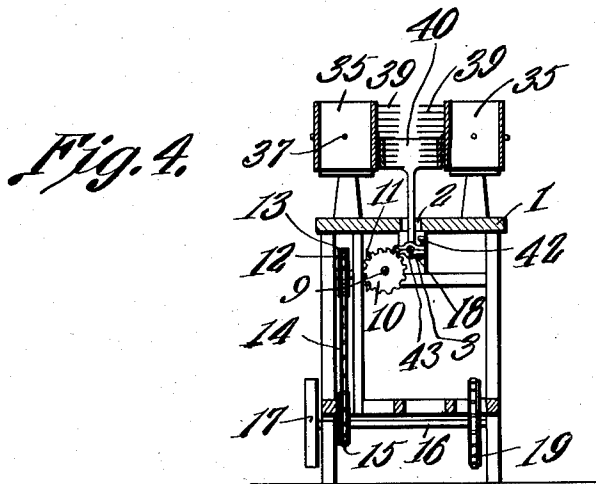
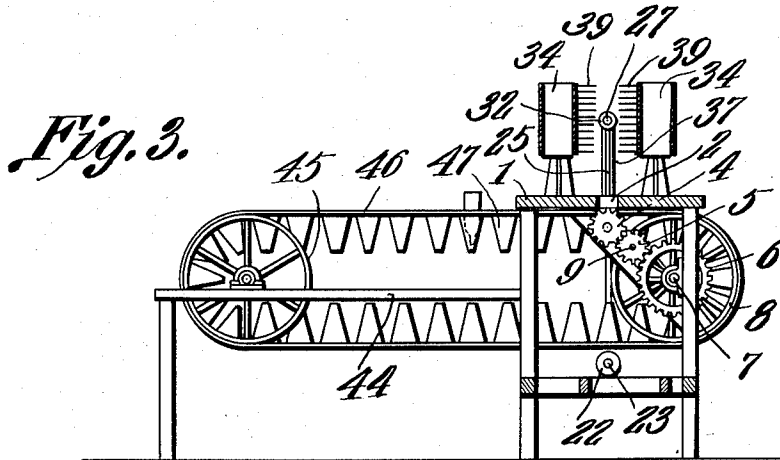
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

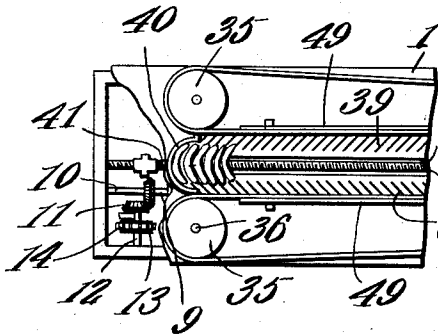


Fig. 6.

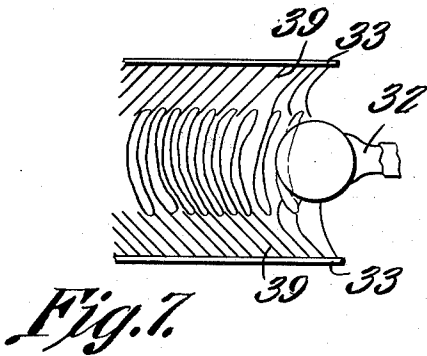
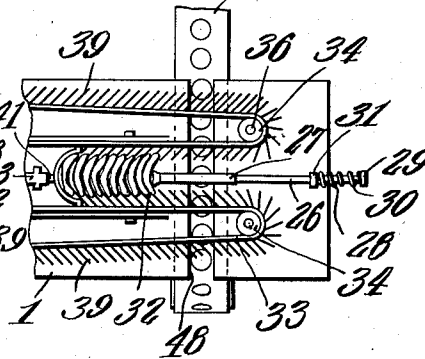
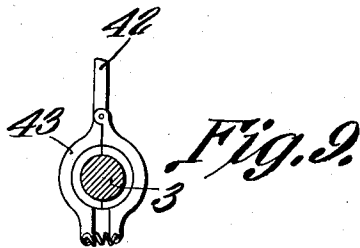
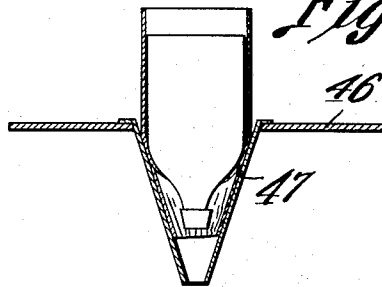


Fig. 8.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR APPLYING CARTONS TO BOTTLES.

1,016,805.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed March 27, 1911. Serial No. 617,095.

To all whom it may concern:

Be it known that we, CLIFFORD E. WENDTE and JOHN NASH, citizens of the United States, residing at North Yakima, in the county of Yakima, State of Washington, have invented a new and useful Machine for Applying Cartons to Bottles, of which the following is a specification.

This invention relates to machines for use in placing bottles in cartons and its object is to provide means whereby a series of collapsed cartons may be supplied automatically to the point of use and there opened out successively so as to permit a bottle to be readily inserted therein.

Another object is to provide a carrier constituting bottle receiving means and which serves to convey the bottle and the carton in which it is housed, from the machine.

A further object is to provide improved means for holding the cartons while collapsed and additional means for opening the cartons without injuring them.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of the machine. Fig. 2 is a plan view thereof. Fig. 3 is a section on line A—B Fig. 1. Fig. 4 is a section on line C—D Fig. 1. Fig. 5 is a plan view of a portion of the machine and showing the folded cartons in place at the feed end thereof. Fig. 6 is a plan view of another portion of the machine and showing the folded cartons in position immediately prior to the unfolding of one of them. Fig. 7 is a plan view of portions of the structure shown in Fig. 6 and showing a carton opened to receive a bottle. Fig. 8 is an enlarged section through the conveyer and one of the bottle receiving pockets, a bottle and the carton thereon being shown. Fig. 9 is a detail view of one form of feed nuts which may be used in connection with the carton feeding apparatus.

Referring to the figures by characters of reference 1 designates a table suitably supported and having a longitudinal slot 2 below which is mounted a feed screw 3 extending in the direction of the length of the slot and suitably journaled at its ends. This screw has a gear 4 adjacent one end thereof and which meshes with another gear 5 receiving motion from a gear 6 to the shaft 7 of which is secured spaced pulleys 8. Gear 5 is secured to a longitudinally extending shaft 9 extending to the feed end of the machine and provided at said end with a gear 10 meshing with another gear 11 secured to a shaft 12. This shaft has a sprocket 13 secured thereto and which receives motion through a chain 14, from another sprocket 15 secured to a drive shaft 16. A pulley 17 may be connected to this shaft 16 to receive motion from a suitable motor through a belt not shown. Another sprocket 18 is secured to the drive shaft 16 and is designed to transmit motion through a chain 19, to a sprocket 20 secured to a crank shaft 21. The crank of this shaft is connected, by a pitman 22, to a slidable cross head 23 in turn attached to the piston of a suction pump 24. This pump has an intake pipe 25 extending therefrom and upwardly above the table, said pipe opening into a guide tube 26 in which a nozzle 27 is mounted to slide, said nozzle having a stem 28 projecting from one end of the guide and terminating in a head 29. A spring 30 bears against the head and also against a standard 31 upstanding from the table and serves to hold the head 32 of the nozzle normally drawn back against the guide 26.

Nozzle 27 projects between two endless belts 33 mounted on pulleys 34 and 35 which are provided with shafts 36 extending perpendicularly from and above the table 1. Pulleys 35 are preferably formed with teeth or projections 37 for engaging the belts 33, there being openings 38 within the middle portions of the belts for receiving these teeth. The inner or adjoining runs of the two belts are preferably parallel and are provided with bristles 39 converging away from the nozzle 27 and forming opposed flexible brushes. A presser head in the form of a yoke 40 connects those ends of the brushes farthest removed from the nozzle and is mounted on a standard 41 which slides on the table 1 and has a tongue 42 projecting through the slot 2. This tongue

carries a feed nut 43 preferably made up of separable sections, as indicated particularly in Fig. 9, said sections, when clamped together, engaging the feed screw 3 but being readily movable apart so as to become dis-

engaged from the screw to thus permit the yoke and its standard to be shifted longitudinally of the table and independently of the feed screw.

10 A supporting frame 44 extends laterally from the table 1 and carries spaced pulleys 45 alining with the corresponding pulleys 8, these pulleys 8 and 45 supporting an endless belt 46. Said belt is provided, along its longitudinal center, with substantially conical pockets 47 sufficiently large to receive inverted bottles and cartons thereon. These pockets project between the runs of the belt and are adapted to travel between the spaced pulleys 8 and also between the spaced pulleys 45. Table 1 has a transverse slot 48 arranged over the path of movement of the pockets 47, this slot extending under the two brushes 39 in advance of the nozzle head 32

15 when said head is in its normal position. The inner or adjoining runs of the two belts 33 are preferably backed by strips 49 extending upwardly from the table 1.

In using the machine, a series of cartons is placed between the belts 33 so that opposite edge portions of the folded cartons will be engaged by the brushes 39. The cartons are bowed transversely so as to fit snugly within the yoke 40. When the machine is set in motion the screw 3 is rotated by the mechanism described, thus feeding the nut 42 toward the nozzle 27. At the same time the two brushes 39, which engage opposite edge portions of the folded cartons, will be shifted longitudinally by the cartons which, as heretofore stated, are forced toward the nozzle by the yoke 44. As the cartons are bowed and are engaged by the brushes, they will be firmly supported by the brushes and

20 will move very slowly in the direction of the transverse slot 48 as the screw 3 rotates. A suction is set up and maintained through nozzle 27 by the pump 24 which is actuated by the mechanism shown and described.

25 The head of the nozzle is normally located close to the guide 26. As the first of the series of folded cartons reaches the slot 48, the operator presses nozzle 27 longitudinally against the stress of its spring 30 and thus brings the head of the nozzle against the first carton of the series. As there is a continuous suction through the nozzle, it will be apparent that the near side of the carton will cling to the nozzle and, as soon as said nozzle is released by the operator,

30 the spring 30 will return it to its initial position and thus open out the carton as indicated in Fig. 7. A bottle can then be inverted by the operator and inserted into the open carton and will move downwardly by

gravity into a pocket 47 which, at this time, is brought to position directly under the carton. The bottle will carry the opened carton therewith and said carton will be seated in the pocket and will be conveyed with the bottle to the discharge end of the conveyer 46 where the bottle and the carton can be readily removed and packed. The cartons will be fed to the nozzle only as fast as needed and after all of the cartons of the series have been opened and removed from the machine, the feed nut 43 can be disengaged from the screw 3 and shifted back to its initial position and then again clamped onto the screw and another series of folded cartons placed in the path of the yoke 40.

The machine herein described is especially designed for use in connection with bottle labeling machines, the bottles as soon as they receive their labels, being supplied to the present machine and then placed in the cartons in the manner hereinbefore set forth. It is to be understood, however, that the machine is not to be restricted for use in connection with labeling machines.

What is claimed is:—

1. A machine of the class described including a movable presser head, a suction device in the path thereof, and means at opposite sides of and movable with the head for engaging opposite portions of articles in the path of the head, said means extending parallel with the path of the head and throughout the length of said path.

2. In a machine of the class described a suction device, a movable presser head for shifting articles in the direction thereof, and means at opposite sides of and parallel with the path of the head for engaging opposite portions of said articles, said means extending throughout the length of said path.

3. A machine of the class described including a suction device, a movable presser head for shifting articles in the direction of said suction device, parallel flexible devices at opposite sides and extending throughout the length of the path of the head for frictionally engaging opposite portions of said articles and for receiving motion from said articles.

4. A machine of the class described including a suction device, a movable head for pressing articles in the direction of said device, parallel flexible brushes at opposite sides and extending throughout the length of the path of the head for engaging opposed portions of the articles and adapted to be shifted with the head by the articles.

5. A machine of the class described including a suction device, a movable head for pressing articles in the direction of the suction device, flexible means at opposite sides and extending throughout the length of the path of the head for frictionally engaging opposite portions of said devices, the said

articles constituting means for transmitting motion from the head to said flexible engaging devices to shift said devices bodily with the head.

5 6. A machine of the class described including a suction device, a movable head for shifting articles in the direction of said device, flexible elements at opposite sides and
10 extending throughout the length of the path of the head for frictionally engaging opposite portions of said articles, the said articles constituting means for transmitting motion from the head to said elements to shift the
15 elements bodily with the head, and means for shifting the suction device into and out of engagement with the articles.

7. A machine of the class described including a suction device, a movable head for shifting articles toward said device, flexible
20 brushes disposed at opposite sides of the path of the head and adapted to engage opposite portions of said articles, said articles constituting means for transmitting motion from the head to the brushes, and means for
25 shifting the suction device toward and away from the head to engage the articles in the path thereof.

8. A machine of the class described including a suction device, a movable head for
30 pressing articles toward said device, endless belts at opposite sides of the path of the head, said belts having flexible brushes movable therewith for frictionally engaging opposite
35 portions of the articles shifted by the head and for receiving motion from said articles.

9. A machine of the class described including a suction device, a movable head for
40 pressing articles toward said device, endless belts at opposite sides of the path of the head, said belts having flexible brushes movable therewith for frictionally engaging opposite
45 portions of the articles shifted by the head and for receiving motion from said articles, and means for shifting the suction device toward and away from the head.

10. A machine of the class described including a suction device, a movable head for
50 pressing articles in the direction of said device, a conveyer extending transversely of the path of the head and having receiving portions, means at opposite sides of the path
of the head for frictionally engaging and moving with opposed portions of said articles, and means for shifting the suction
55 device toward and away from the head to engage and pull on an article, said article

being shiftable into a receiving portion of the conveyer.

11. A machine of the class described including a suction device, a head movable in
60 the direction thereof, said head constituting means for shifting folded cartons, means at opposite sides of the path of the head for frictionally engaging opposed portions of
65 the folded cartons and said means being movable by said cartons, means for shifting the suction device into contact with a folded carton, means for automatically returning
70 the suction device to its initial position to open the folded cartons, and means movable transversely of the path of the head for receiving a carton and conveying it from the machine.

12. A machine of the class described including a suction device, a movable head for
75 shifting folded cartons toward said means, flexible brushes movably mounted at opposite sides of the path of the head for engaging and moving with opposed portions of
80 the folded cartons, means for shifting the suction device into contact with one of the cartons, means for returning said device to its initial position to open the carton, and a conveyer
85 having carton receiving portions, and movable transversely of the path of the head.

13. A machine of the class described including a suction device, a movable head for
shifting folded cartons toward said device, oppositely disposed endless belts having their
90 inner runs parallel with the path of the head and at opposite sides of said path, flexible brushes carried by the inner runs of the belts, constituting means for frictionally engaging opposed portions of
95 the folded cartons, said brushes being movable by the cartons, means for shifting the suction device against one of these cartons, means for returning said device to its initial
100 position to open a carton to receive a bottle, and means movable under the path of the head for receiving the cartons and a bottle contained therein and conveying them from the machine.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

CLIFFORD E. WENDTE.
JOHN NASH.

Witnesses:

CORAL E. DOUST,
G. W. BOYNTON.