Aug. 11, 1942. H. E. CARLSON 2,292,361

CIGAR MACHINE WRAPPER TRANSFER MECHANISM

Filed Aug. 16, 1939

FIG. 1

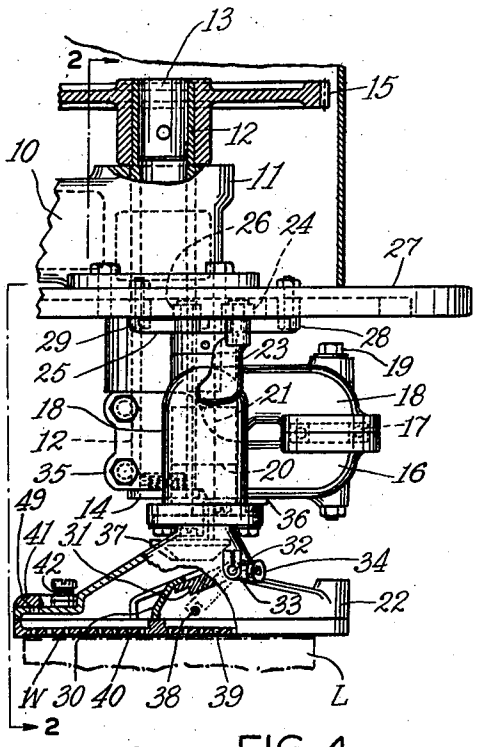


FIG. 2

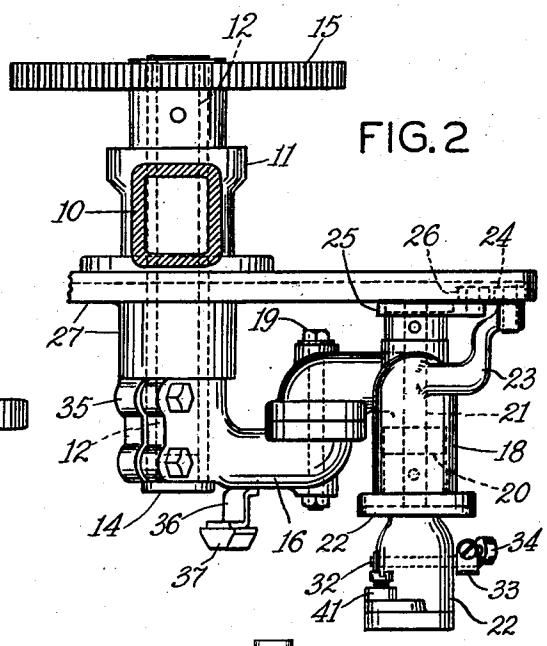


FIG. 3

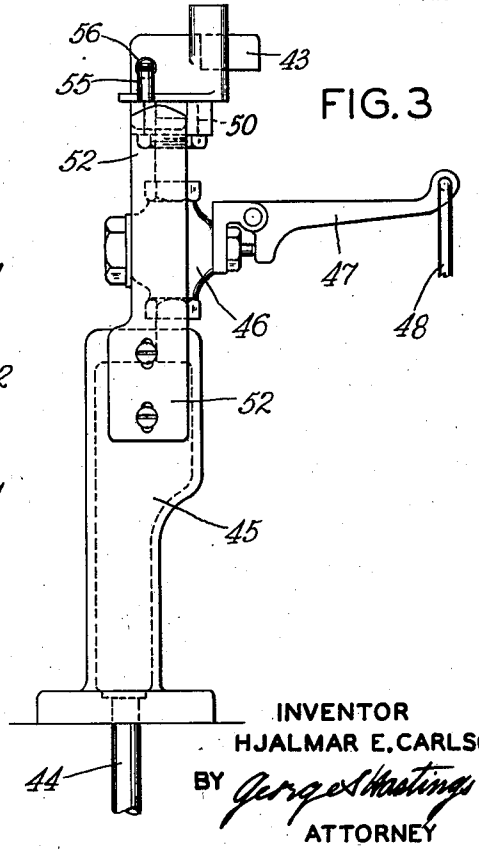


FIG. 4

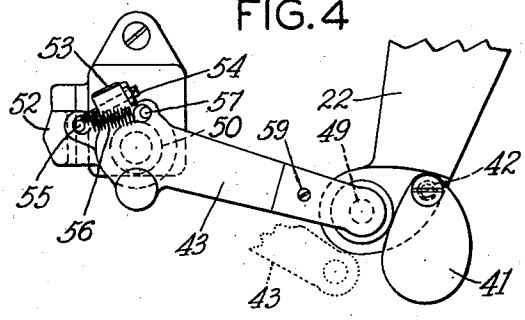
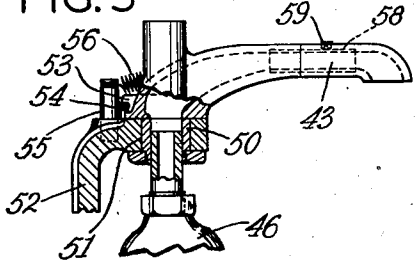


FIG. 5



INVENTOR
HJALMAR E. CARLSON
BY George & Hastings
ATTORNEY

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CIGAR MACHINE WRAPPER TRANSFER MECHANISM

Hjalmar E. Carlson, Brooklyn, N. Y., assignor to International Cigar Machinery Company, a corporation of New Jersey

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7 Claims. (Cl. 131—105)

This invention relates to cigar machines and more particularly to improvements in wrapper transfer mechanism for use on cigar machines.

It is an object of this invention to provide novel wrapper transfer mechanism which is simple in construction, easily adjustable and of a type especially adapted for use in conjunction with cigar wrapping mechanism in which the cigar wrapper carrier head is adapted to travel along a continuous and closed path during the operation of the machine.

It is a further object of my invention to provide an improved nozzle mechanism cooperating with the wrapper carrier head for blowing off the flag portion of the wrapper leaf from the wrapper carrier at the conclusion of the wrapping operation.

In automatic machines, it may be necessary to run a machine backwards in order to make suitable adjustments and for that purpose my invention also consists in the provision of an improved nozzle mechanism so constructed and arranged that the machine can be run backwards and the wrapper carrier head moved relative to the nozzle without breaking any parts of the machine.

It is an additional object of my invention to provide improved nozzle mechanism of the type in which the nozzle is mounted for movement independent of the wrapper carrier head in order to allow it to be moved out of the path of the head whenever the machine is turned over backwards in order to prevent breakage of the parts of the nozzle and its associated operative parts.

The invention is also characterized by the provision of means forming a part of the nozzle which allows it to be adjusted readily in order to adapt it for use in producing cigars of all shapes and lengths.

With these and other objects not specifically mentioned in view, the invention consists in certain combinations and constructions which will be hereinafter fully described, and then specifically set forth in the claims hereunto appended.

In the accompanying drawing which forms a part of this specification, and in which like characters of reference indicate the same or like parts:

Figure 1 is a partial side elevation partly in section of the improved wrapper transfer;

Figure 2 is an end view of the same taken from line 2—2 of Figure 1;

Figure 3 is an end elevation showing a compressed air device for blowing off the flag end of the wrapper;

Figure 4 is a plan view of the blow-off device; and

Figure 5 is a detail view, partly in section, showing the yieldable mounting of the nozzle.

Referring to Figures 1 and 2, the improved wrapper transfer mechanism is mounted on a hollow column (not shown) which may be of the same general type as that shown in co-pending application Serial No. 208,972, filed May 20, 1938 by H. H. Wheeler for Wrapper carrier operating mechanism, now United States Patent No. 2,235,857, attached to the base plate of a cigar rolling machine (not shown), and connected to its suction system in the customary manner. The column has a horizontal arm 10 terminating in a bearing 11 in which is journaled a hollow shaft 12 closed at its ends by removable plugs 13 and 14.

A gear 15 fixed on the hollow shaft 12 is driven in the same manner as disclosed in said patent above referred to, and therefore, in the interest of brevity, a more detailed showing and description of the same is omitted. To the lower end of shaft 12 is clamped a hollow arm 16 which is provided with a bearing 17 pivotally supporting a hollow arm 18 joined to arm 16 by a bolt 19. The free end of arm 18 forms a bearing for a holder 20 secured to a vertical shaft 21 turning in the bearing and carrying a suction wrapper carrier head 22. From the free end of arm 18 projects a lateral extension 23 which mounts cam follower 24. To the upper end of shaft 21, which extends from the free end of arm 18, is fastened a cam piece 25 carrying a roller 26. The followers 24 and 26 engage in cam tracks provided in the under side of a stationary cam 27 attached to bearing 11, the follower 24 guiding the shaft 21 in a predetermined path and the follower 26 in each position on this path swinging the carrier head 22 to the proper angle for applying the wrapper W to the particular cigar shape for which the cam 27 is designed. The carrier head 22 is adapted to travel through a closed path each cycle of the machine from wrapper receiving to wrapper applying station and back to receiving position, all as disclosed in the above referred to Wheeler patent.

At proper points, the cam 27 has projecting studs carrying followers 28 and 29 adapted to be engaged by the cam piece 25 in the manner described in the above mentioned patent and thereby turning the shaft 21 and reversing the carrier head 22 after the same has delivered the wrapper and is returning to its receiving or pick-up position. In the pick-up position shown in

Figure 1, the carrier head 22 rests over the lifter head L of the die, the wrapper W being transferred from the latter to the former in a manner known in the art by a shift of the suction at the moment of contact.

The carrier head 22 is divided by a partition 30 into a forward and a rear chamber which communicate through an opening in the partition 30 having a weighted trap door 31 swinging on a shaft 32. Shaft 32 projects externally from the carrier head, and on an arm 33 clamped thereto has a cam follower 34, or other suitable valve operating device. The under side of carrier arm 35, by means of a bracket 36, carries a wedge shaped cam piece 37 projecting into the path of follower 34. The weight of trap door 31 is so chosen that the suction in the carrier is not sufficient to lift the same from a stop pin 38 but strong enough to hold it against the partition 30 after being raised into closing position. Thus the trap door 31 in this case is normally open thereby allowing the suction to act over the entire face of the carrier head 22. At a definite point in the path of travel of carrier head 22, when it is desired to shift the suction from the forward holes 39 to the rear holes 40 so as to augment that on the latter, the door 31 is raised by engagement of follower 34 with cam piece 37 and then is held closed by the suction until the same is cut off from the carrier head 22 upon delivery of the wrapper W.

When all but the flag end of the wrapper W has been taken off the carrier head 22, as it is being wound around the cigar bunch at the wrapping station (not shown), a cover 41 movably mounted on the head 22 and normally held in closed position by a spring 42, is opened by engagement with a nozzle 43 of an air blast system forming an active part of the machine. The nozzle 43 (Figure 5) preferably is made in two parts in order to provide means for readily adjusting it to cooperate with all different shapes and lengths of wrapper carriers. This may be accomplished by securing one end of a sleeve 58 in the butt end of the nozzle and having it project and support the adjustable outlet portion of nozzle 43. With the outlet portion of the nozzle correctly placed in respect to the duct 49 of carrier 22, it is retained in place by tightening a set screw 59. Any suitable air compressor may be used to deliver compressed air through pipes 44 (Figure 3) into a storage chamber 45 secured to the base plate of the machine. The chamber 45 has a valve 46 operated by a lever 47 connected by a rod 48 to a cam (not shown). To the discharge opening of valve 46 is connected the nozzle 43 which fits over a duct 49 in the flag end of carrier head 22. The cam is so timed that the valve 46 is opened at the moment the duct 49 arrives below the nozzle 43, the resulting puff of air blowing the wrapper end off the carrier, thereby preventing any possible sticking, and permitting perfect application of the flag portion about the head of the cigar. As the carrier then moves on in its closed and unidirectional path, nozzle 43 clears the cover 41 and the spring 42 returns the same to its closed position.

The nozzle 43 is yieldably mounted so that as the machine is turned in a reverse direction manually, for adjusting purposes, or any other reason, the nozzle will be moved by the carrier head 22 out of its path of travel without breakage of any parts of the machine. According to the embodiment chosen for illustration, the nozzle 43 is provided with a hub 50 which is turnably mounted in an aperture 51 at the upper end of a bracket 52 adjustably fastened to chamber 45. Since bracket 52 is adjustable, it provides means for vertically setting the nozzle in proper position to suit the level of the flag end of the carrier head 22. An extending lug 53 of the nozzle 43 carries an adjustable stop screw 54 which normally abuts a stud 55 in bracket 52, and a spring 56 stretched between stud 55 and a stud 57 tends to hold screw 54 against its stop. With the nozzle positioned as shown in Figure 4, it is set to register with the duct 49 at the proper time to blow off the flag portion of the wrapper.

When the machine is turned in a reverse direction manually, for reasons heretofore mentioned, the cover 41, which is then in a closed position, will bear against the end of nozzle 43 and move it as indicated by dot and dash lines, out of the path of the carrier head, thus avoiding breakage of any parts of the machine.

The invention above described may be varied in construction within the scope of the claims, for the particular device, selected to illustrate the invention, is but one of many possible concrete embodiments of the same. It is not, therefore, to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. In a cigar machine, a wrapper carrier head provided with a duct adjacent the flag end thereof, a device normally closing said duct, a source of compressed air, including a nozzle, means for producing a relative movement between said head and nozzle to bring the latter into direct engagement with said device to move said device and open said duct, whereby said nozzle is located in juxtaposition with said duct, means for directing compressed air through said nozzle and duct to force the flag end of a wrapper from said carrier head, and means for mounting said nozzle for swinging movement in a direction opposite to the normal path of travel of said head.

2. In a cigar machine, a wrapper carrier head provided with a duct adjacent the flag end thereof, a device normally closing said duct, a source of compressed air including a nozzle, means for producing relative movement between said head and nozzle to bring the latter into direct engagement with said device to move said device and open said duct, whereby said nozzle is located in juxtaposition with said duct, means for directing compressed air through said nozzle and duct to force the flag end of a wrapper from said carrier head, means for mounting said nozzle for swinging movement in a direction opposite to the normal path of travel of said head, and means tending to maintain said nozzle normally in a predetermined position.

3. In a cigar wrapper transfer mechanism having a movable wrapper carrier head provided with a duct adjacent the flag end thereof, a device for blowing the flag end of a wrapper from said head including a nozzle, a support mounting said nozzle in position for directing compressed air through said duct, and means for adjusting said nozzle to and from said head, including a fixed part of said nozzle and an axially movable part mounted telescopically thereon, and means for securing said movable part in axially adjusted position on said fixed part.

4. In a cigar wrapper transfer mechanism having a movable wrapper carrier head provided with a duct adjacent the flag end thereof, a device for forcing the flag end of a wrapper from said head comprising, a nozzle, an axially mov-

able member forming a part of said nozzle, and means for adjustably securing said member to another part of said nozzle whereby said part of said nozzle and member are mutually adjustable coaxially for coaction with said head.

5. In a cigar wrapper transfer unit having a movable wrapper carrier head movable in a closed path to and from wrapper applying position and provided with a duct adjacent the flag end thereof, a device for directing compressed air through said duct to force the flag end of a wrapper from said carrier including, a movably mounted nozzle located in position to direct compressed air into said duct, means for normally maintaining said nozzle in position to cooperate with said duct, an axially adjustable part mounted on the end of said nozzle, means for securing said part in adjusted position on said nozzle, and means mounting said nozzle yieldingly to move out of the path of said head whenever the latter travels in a reverse direction.

6. In a cigar machine wrapper transfer, having a wrapper carrier head movable in a closed path to and from wrapper applying position, provided with a duct adjacent the flag end of said head, a device for directing compressed air through said duct to force the flag end of a wrapper from said head, including a support positioned adjacent the path of travel of said head, an air conducting member mounted on said support for movement in a substantially horizontal plane, and means for positioning said member in the path of travel of said head, said member being mounted yieldingly on its support to move and make way for said head whenever said head is translated in a reverse direction.

7. In a cigar machine wrapper transfer, having a wrapper carrier head movable in a closed path to and from wrapper applying position, and provided with a duct for directing fluid under pressure to force the flag end of a wrapper from said head, mechanism for directing said fluid to said duct, comprising a source of supply of fluid, a hollow support connected to said source, a fluid conducting arm provided with a nozzle and means for mounting said nozzle on said arm and maintaining the nozzle normally in the path of movement of said head as it travels in said closed path, said means coacting with said head to permit said nozzle to be moved by said head out of its path whenever said head is moved in a reverse direction.

HJALMAR E. CARLSON.