Sept. 24, 1940. H. H. WHEELER 2,215,490

WRAPPER TRANSFER FOR CIGAR MACHINES

Filed Sept. 25, 1936 4 Sheets-Sheet 1

Fig. 1

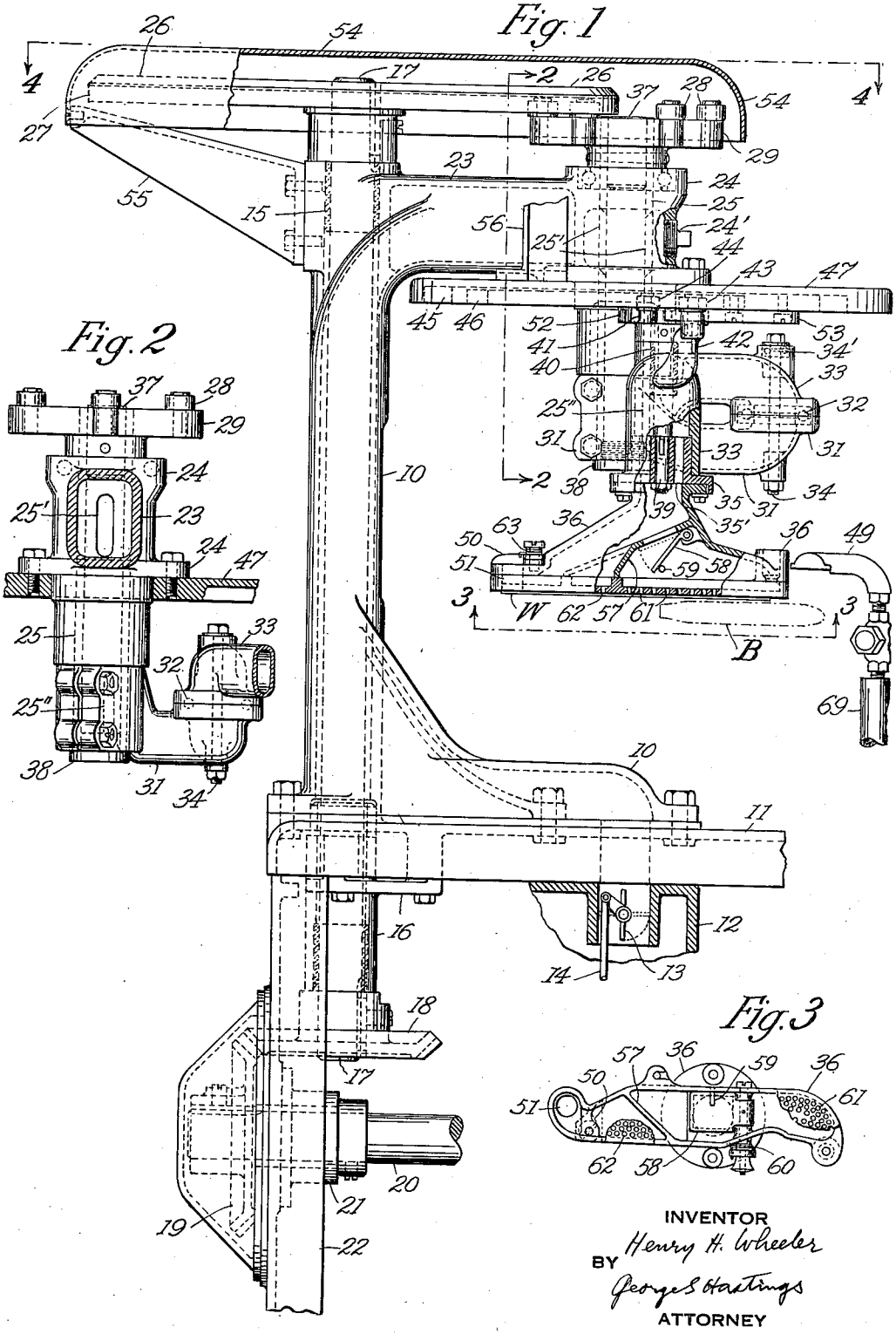


Fig. 2

Fig. 3

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Fig. 4

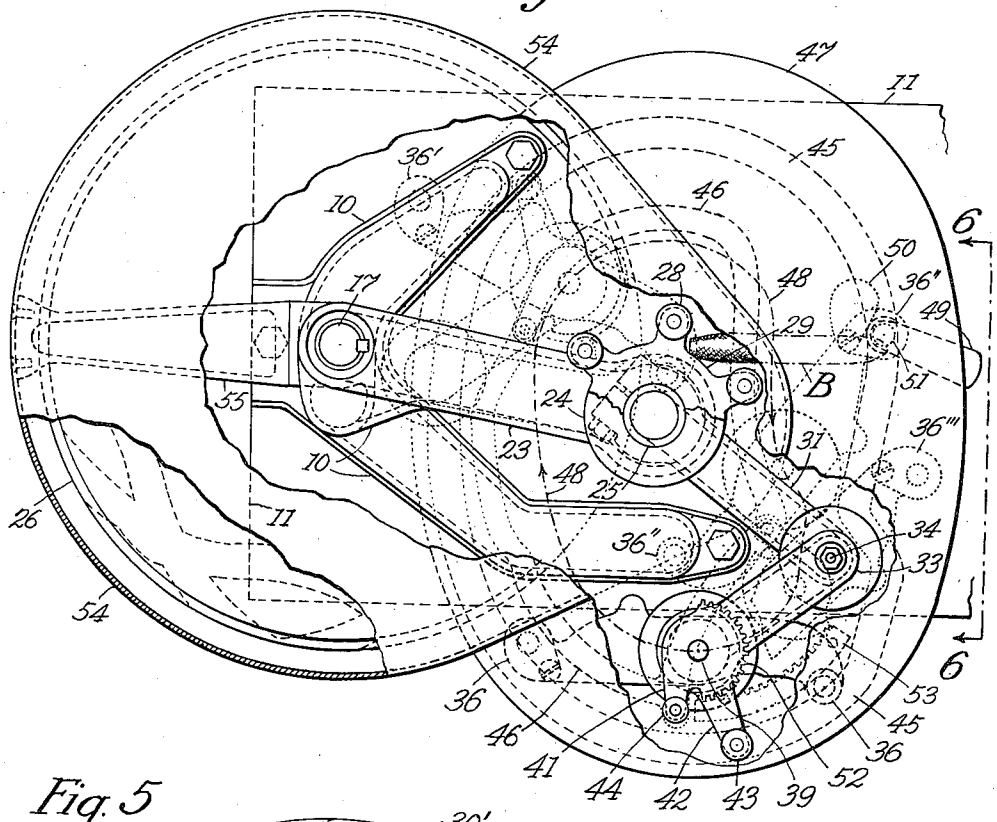
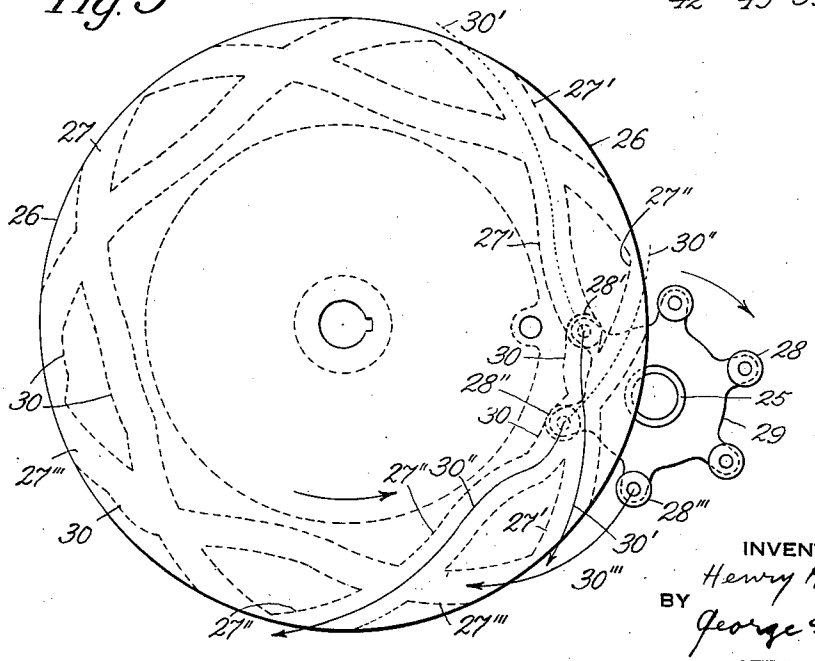


Fig. 5



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Fig. 6

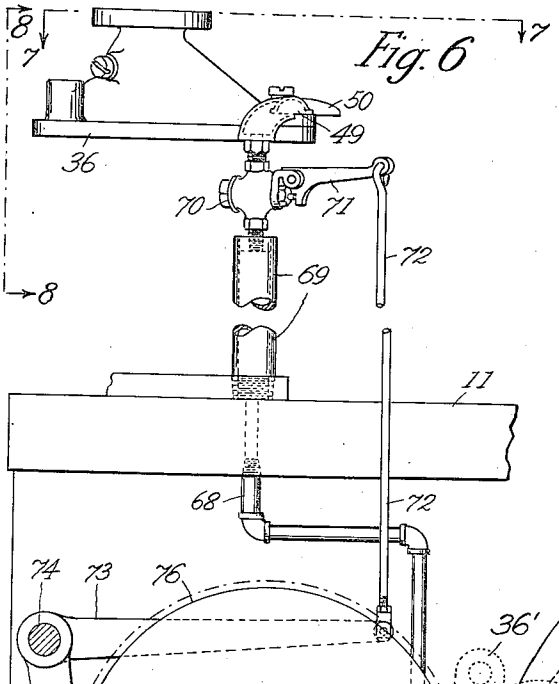


Fig. 8

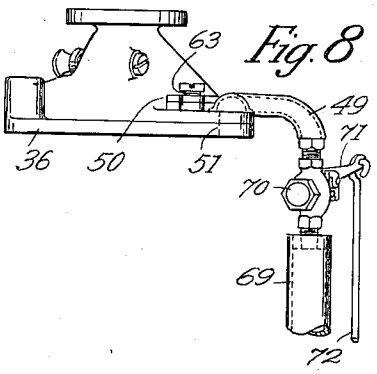


Fig. 9

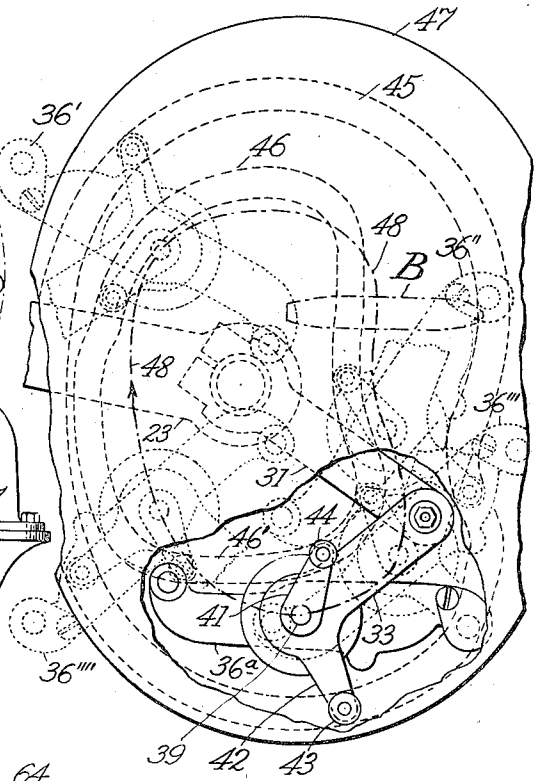
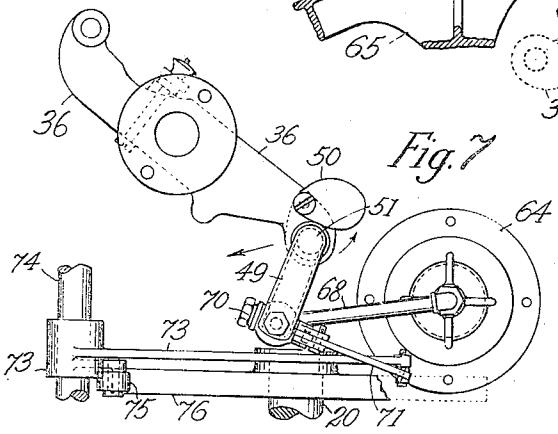


Fig. 7



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WRAPPER TRANSFER FOR CIGAR MACHINES

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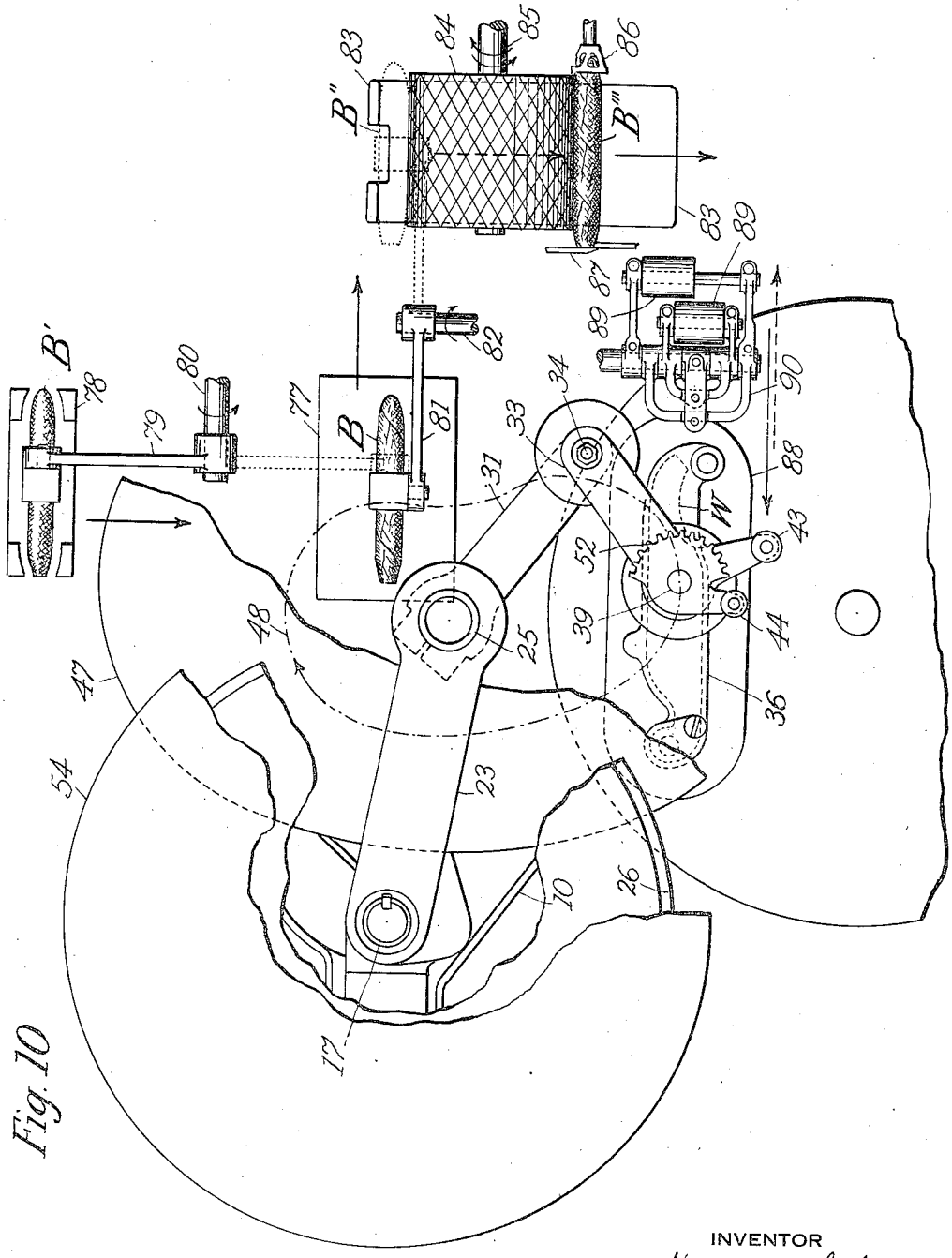


Fig. 10

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UNITED STATES PATENT OFFICE

2,215,490

WRAPPER TRANSFER FOR CIGAR MACHINES

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Application September 25, 1936, Serial No. 102,445

36 Claims. (Cl. 131—105)

This invention relates to cigar machines, and more particularly to wrapper transfer mechanism therefor for transferring wrappers from a source of supply, such as a wrapper or binder cutting die to cigar rolling devices.

The invention relates to the type of cigar machine disclosed in co-pending application Serial No. 102,455; filed September 25, 1936, by Sigurd Clausen, and constitutes improvements in the transfer mechanism thereof.

In the present invention there is provided a rotating main cam which drives a roller disk turning a vertical shaft to which a swinging horizontal arm is attached, and a stationary follower cam which guides the wrapper transfer arm pivoted to the said swinging arm and which swings the carrier head mounted on the said wrapper transfer arm. The aforesaid disk has a number of symmetrically located cam followers which engage at least in pairs with a number of open tracks of the main cam, the latter being so arranged that, while the cam itself performs a continuous rotary motion, the disk turns intermittently, dwelling at given points and rotating at different speeds in different positions. The follower cam has two closed tracks with the outer of which engages a follower carried by the wrapper transfer arm while with the inner track engages a roller carried by a crank attached to the shaft of the carrier head itself, the said crank embodying a gear segment which at one point of the wrapper carrier path engages with a curved rack attached to the follower cam, thereby rotating the carrier head through a given angle while guiding it in its path.

The carrier head is divided by a cross-wall into two chambers communicating by an opening in said cross-wall fitted with a valve held open against a stop by a spring. This valve remains in the open position as long as a sufficient number of the suction holes in the first chamber are covered by the wrapper. But, as the wrapper is pulled off the suction head onto the cigar bunch, the air entering the chamber through the vacated holes pushes against the valve and closes the same, thereby increasing the suction effect in the second chamber.

At the end of the delivery portion of its path during which the wrapper is fed to the bunch, the suction head engages the outlet of a stationary pressure pipe which delivers, from a pressure chamber supplied by a continuously running compressor, a puff of compressed air at given intervals controlled by a cam, this puff overcoming the remaining suction on the flag end of the wrapper thereby preventing the same from being torn.

The chief object of this invention is to provide means for transferring wrappers to a wrapping device by moving the carrier in a closed path to and from a wrapper supply position, and a wrapping position, and thereby improve the efficiency of the machine and increase its output.

A further object is to provide a single movable member which moves the transfer mechanism in a closed path, and eliminates the necessity of return movement of the carrier mechanism to the wrapping device over the same path as in the case of existing machines.

It is a further object to provide a single movable plate cam which acts as the driving medium for the transfer head, and which operates in conjunction with a stationary plate cam for controlling the wrapper applying movement of the wrapper carrier head as said head moves through a closed path to and from wrapping position.

It is a further object of the invention to provide relatively movable members which impart movement to a wrapper transfer head, and control the path of movement thereof to perform the functions incident to the proper delivery of wrappers while the head is moving in a closed path.

The invention also contemplates the provision of mechanism for moving the wrapper transfer head continuously with a varying speed in a closed and irregularly curved path to and from wrapper applying position and wrapper receiving position, except for pauses at the receiving and the paste applying stations.

The invention also consists of the provision of mechanism connected to the suction system of the machine which allows said system to be cleaned of any obstructions which may happen to clog or otherwise render it ineffective.

The invention also contemplates the provision of a device for removing the flag end of a wrapper from the wrapper carrier as the carrier head reaches a position where said end is to be discharged. This device becomes operative by relative movement of a cover mounted upon the carrier head, and a compressed air nozzle or directing means when the head is swung to final wrapper delivering position.

It is a further object of the invention to provide a suction system having a simplicity of construction heretofore unknown to the art, in which

the wrapper carrier head is mounted upon articulated members having but a single path through which suction is conducted to said head, thereby providing a constant uniform quantity of suction thereto, and cutting down the suction loss due ordinarily to eddy currents set up in conduits having a plurality of paths.

It is an additional object of the invention to furnish a carrier head of novel construction in which the suction is diverted by changes in air velocity and pressure from a portion thereof as the wrapper is applied to a bunch so that the remaining wrapper portion is more firmly held to the head during the latter part of the wrapping operation.

With these and other objects not specifically mentioned in view, the invention consists in certain novel features of construction, combination of parts, and arrangements of instrumentalities, which will be hereinafter more fully described and then set forth in the claims hereunto appended.

While the transfer mechanism shown is especially adapted for use in a cigar machine utilizing a duplex or multiplex cutting die turret, it also finds ready adaptability for use on a cigar machine using but a single cutting die.

In the accompanying drawings:

Fig. 1 is a side elevation, partly broken away, of the wrapper transfer;

Fig. 2 is a fragmentary end elevation of the same, on line 2—2 of Fig. 1;

Fig. 3 is a bottom view, partly broken away, of the wrapper carrying suction head from line 3—3 of Fig. 1;

Fig. 4 is a top view, part broken away, of the transfer mechanism, on line 4—4 of Fig. 1;

Fig. 5 is a portion of Fig. 4 showing the arrangement of the cam tracks in the main cam;

Fig. 6 is an end elevation on line 6—6 of Fig. 4, showing a compressed-air device for blowing off the end of the wrapper;

Fig. 7 is a top view of the blow-off device, from line 7—7 of Fig. 6;

Fig. 8 is a side-elevation on line 8—8 of Fig. 6;

Fig. 9 is a top view, partly broken away, of the follower cam, showing the arrangement of the cam tracks for a modified position of the wrapper cutting die; and

Fig. 10 is a top view, partly broken away, showing the relative position of the improved wrapper carrier to other units of the cigar machine.

Referring to Figs. 1, 2 and 4, the improved wrapper transfer is mounted on a hollow column 10 fastened on the base-plate 11 of the machine and communicating through an opening in the latter with a casting 12 which is connected to a suction system and has a valve 13 controlled by a cam-operated rod 14. In a bearing 15 of column 10 and a bearing 16 attached to base-plate 11 is mounted a vertical shaft 17 having a bevel gear 18 in mesh with a bevel gear 19 on a drive shaft 20 journaled in bearings 21 on side frames 22. The column 10 which has a horizontal arm 23 terminating in a bearing 24 in which is journaled a hollow shaft 25, may also be reduced as shown in Fig. 1 to allow the carrier head 36 to pass by unobstructedly. Bearing 24 may be apertured and have secured therein a plug 24' so that upon its removal a blast of air can be directed through the suction channels to remove any stoppage thereof or waste materials that may be present.

To the top end of shaft 17 is keyed a prime mover comprising a cam 26 provided upon its under surface with a system of open tracks 27 engaging with followers 28 on a horizontal disk 29 mounted on hollow shaft 25. The followers 28 are symmetrically placed on disk 29 and the tracks 27 of cam 26 are so arranged that the shaft 25 is by the latter set into intermittent rotation at variable speed, the shaft 25 dwelling at certain points 30, Fig. 5, at which the tracks form concentric circles, while at other points it turns, slowly or fast according to the curvature of the tracks. There are at least two followers in engagement at any one time, a new follower entering a track of the cam before any one of the engaged followers emerges from its track. Thus in the position shown, which corresponds to the pick-up position of the carrier at the die, the follower 28' is in track 27' and the follower 28'' in track 27''. The rotation of cam 26, in the direction of the arrow, causes the follower 28' to engage the path 30' and follower 28'' to track path 30'', but before follower 28' leaves the track 27', the follower 28''' which describes a path 30''' will enter track 27''', and so on, thus turning disk 29 and shaft 25 in the direction of the arrow.

To the lower end of shaft 25 is fixed a hollow arm 31 which on a bearing 32 pivotally supports a hollow arm 33 held on arm 31 by a bolt 34 turning on a bearing 34'. It will be readily apparent that the connection furnished by bolt 34 affords an extremely simple device for dismantling the carrier head supporting unit if that be desired for cleaning or any other reason. The free end of arm 33 forms the bearing for a holder 35 to which the wrapper carrying suction head 36 is attached. The arms 31 and 33 have been formed with but a single path for the suction, so that eddy currents will be kept down and a more uniform and constant pressure will always be maintained. The shaft 25 has ports 25' and 25'' registering with ducts in arms 23 and 31, respectively, and the holder 35 has ducts 35' registering with the opening of head 36, thus establishing a single and continuous suction path from the valve 13 to the wrapper W. At its ends, the bore of shaft 25 is closed by plugs 37 and 38. The holder 35 is keyed and bolted to a shaft 39 turning in a bearing 40 in arm 33 and carries an arm 41 provided with a hub resting on bearing 40 and a cam follower 44. The arm 33 has a lateral projection 42 carrying a cam follower 43. The followers 43 and 44 engage in tracks 45 and 46 in the under side of a stationary cam 47 attached to bearing 24, the followers 43 guiding the shaft 39 in a predetermined path 48, and the followers 44, at each portion of this path, swinging the suction head 36 to the proper angle for applying the wrapper to the particular cigar shape for which the machine is designed.

From the pick-up position 36, Fig. 4, the path 48 takes the wrapper carrier to position 36' at which paste is applied to the tuck end of the wrapper and the said tuck end is delivered to the cigar bunch B in the wrapping device by the tuck needle in the usual manner, the wrapper then being rolled around the bunch while the carrier travels to position 36'' in which the flag end of the wrapper is blown off the carrier head by a puff of air from a stationary nozzle 49 which at that point automatically opens a spring cover 50 over a duct 51 in the carrier.

Concentric with shaft 39 the hub of arm 41 is formed into a gear segment 52 which engages a curved gear rack 53, attached to cam 47, and during a part of the movement along path 48

from a position 36''' beyond the blow-off position 36'' to the starting position 36, this gear engagement causes shaft 39 to perform a rotary motion which is required to bring the suction head back into the initial position of its cycle for picking up the next wrapper.

The continuous closed motion produced by this arrangement has the advantage of bringing the carrier from the wrapper pick-up position 36 to the tuck delivery position 36' by way of the short route past column 10 instead of returning over the much longer route via positions 36'' and 36''', thus permitting a greater portion of the cycle to be utilized for the wrapping operation, for the reason that this motion allows the transfer means to transfer bunches to, and cigars from the wrapping device 77. At the same time the carrier is moving to the delivery position.

When but a single wrapper cutting die is used, the carrier 36 starts from position 36a, Fig. 9, and has to make a forward half-turn 36''' so as to reach the paster position 36' with its tuck end at the cigar bunch B as in the case shown in Fig. 4. But when arrived in position 36''' after delivering the wrapper, it requires only a small additional turn to return to the original pick-up position 36a. The gear segment 52 and the coacting rack 53 are therefore not required in this case and are omitted, the arm 41 of roller 44 having a plain hub and the lower portion of track 46 having the shape 46' which causes the carrier head to turn about roller 44 while moved on path 48 by roller 43 in track 45, thus turning the carrier into position 36''''. From position 36'''' to position 36'', through positions 36' and 36'', the track 46 is the same as in Fig. 4. The path 48 and the track 45 are not affected by reversing the die as long as the shaft 39 remains in the same position.

The cam 36 and roller disk 29 are protected by a cover 54 supported by a bracket 55 attached to column 10 and by brackets 56 resting on cam 47.

The carrier head 36 is divided by a partition 57, Figs. 1 and 3, into a forward and a rear chamber which communicate through an opening having a valve 58 tensioned against a stop 59 by a spring 60. This spring is so adjusted that the valve 58 is held open as long as a wrapper W covers the suction holes 61 of the forward chamber, but after the forward portion of the wrapper has been fed to the bunch the air streaming into the uncovered openings 61 closes the door 58 and thus permits all the suction to act through holes 62 on the wrapper portion held by the rear chamber. After this remaining portion of the wrapper has nearly all been delivered to the bunch, the valve 13 is closed by the action of rod 14, the resulting cessation of the suction through the carrier arms permitting the valve 58 to reopen, ready for the next wrapper.

When all but the flag end of the wrapper W has been taken off the carrier head, the swing cover 50 of the latter, which is held in closed position by a spring 63, is opened by its engagement with the stationary nozzle 49 of an air blast system incorporated with the machine. An air compressor 64, Figs. 6 to 8, supported on a bracket 65 and driven by gears 66 and 67 from the drive shaft 20 of the machine delivers compressed air through pipes 68 into a storage chamber 69 supported by the base plate 11. The chamber 69 has a valve 70 operated by a lever 71 connected by a rod 72 with a chamber 73 fulcrumed on a shaft 74 and having a roller 75 held in engagement with a cam 76 by a spring within the valve 70. To the discharge opening of the latter is connected the nozzle 49 which fits over the duct 51 in the flag end of the carrier 36. The cam 76 is so timed that the valve 70 is opened at the moment when the duct 51 arrives below the nozzle 49, the resulting puff blowing the wrapper end off the carrier thus preventing its possible tearing. As the carrier then moves on, the nozzle 49 clears the cover 50 and the spring 60 returns the same into closing position.

In Fig. 10, the relation of the wrapper carrier to other units of the cigar machine is shown. The bunch B is delivered to the wrapping device 77 from position B' in the "crimper" 78 in which the ends of the bunch are shaped, by a transfer 79 turning on a shaft 80. When wrapped, the bunch B, now a cigar, is carried by a transfer 81 turning on a shaft 82 into position B'' on the cradle 83 of the "reroller" 84, a knurled drum oscillating on a shaft 85. In delivery position B''' on the cradle 83, the finished cigar engages with a knurler 86 at its head end while its tuck end is trimmed to size by a trimmer 87. While the bunch B is being wrapped in the wrapping device 77, the wrapper W for the next following bunch is being cut on the die 88 by cutting rollers 89, which are mounted in a carriage for reciprocatory movement across die 88 when said die is held stationary in cutting position (Fig. 10). The wrapper carrier head 36 picks up the wrapper W and carries it along the path 48, the cam 26 and the transfers 79 and 81 being so timed that no interference between carrier 26 and said transfers takes place at any time during the entire cycle of movement of the carrier.

It will be understood that various changes in the details of construction and arrangement can be made within the scope of the invention as set forth in the appended claims. The invention is not, therefore, to be limited to the particular embodiment shown and described herein.

What is claimed is:

1. In a wrapper transfer mechanism, a wrapper carrier head, a movable cam, a stationary cam, and connections between said cams and head for moving said head in a closed path to and from a wrapper applying station for applying said wrapper.

2. In a cigar machine, a cigar wrapping device, and mechanism for transeferring wrappers to said device, said mechanism comprising a movable cam provided with a plurality of tracks, a stationary cam, a carrier head, and connections between said head and cams for moving said head in a closed path to and from said device and for applying a wrapper to a bunch in said device.

3. In a cigar machine, a plurality of reciprocatory wrapper cutting rollers, a wrapping station, a device for transferring wrappers from a cutting die to said station, said device including a rotary plate cam, a carrier head, and driving mechanism connected to said head and cooperating with said cam for moving said head in a closed and irregularly curved path to and from said station at least once during each cycle of said machine, and means for transferring bunches and cigars to and from said station concurrently with the movement of said device.

4. In a cigar machine, in combination, a wrapper cutting die, a wrapping device, a wrapper transfer mechanism for carrying wrappers from said die to said device, and means for moving said mechanism in a closed path to and from said device for applying wrappers to bunches in said

device, said mechanism including a carrier head, a movable plate cam, and a stationary plate cam adapted to control the movement of said mechanism along said path.

5. A wrapper transfer mechanism for cigar machines, comprising a support, a movable cam having a plurality of tracks mounted upon said support, a shaft, a transfer head mounted upon said shaft, a driving disk secured to said shaft, a plurality of cam followers on said disk, and engaging said tracks for rotating said shaft, a stationary cam located adjacent said head, and means associated with said head and stationary cam operating in synchronism with the motion of said shaft for controlling the movement of said head as it moves to and from wrapper receiving and wrapping position.

6. In a cigar machine, a wrapper transfer mechanism, comprising a movable cam provided with a plurality of tracks, a transfer head, a driving element secured to said head, and means carried by said element and cooperating with said tracks for moving said head to and from wrapping position.

7. In a cigar machine, the combination with a wrapping device, of a transfer mechanism for carrying wrappers to said device, comprising a suction carrier head, a movable cam, and a fixed cam, and means carried by said head cooperating with said stationary cam for moving said head through a predetermined wrapper applying path, and means coacting with said movable cam for moving said transfer mechanism in a closed path to and from said device.

8. In a cigar machine, the combination with a wrapping device, of a transfer mechanism for carrying wrappers to said device, a support, a shaft journaled in said support, driven means affixed to said shaft, a movable cam driving said means in a single direction, an articulated member fixed to said shaft and supporting said mechanism, and means for rotating said cam to move said transfer mechanism to and from said wrapping device, and means for transferring bunches and cigars to and from said device concurrently with the movement of said mechanism.

9. In a cigar machine, a support, a shaft journaled in said support, driven means affixed to said shaft, a movable cam cooperating with said means for driving said shaft intermittently in a single direction, a stationary cam, an articulated hollow member secured to said shaft, a suction carrier head fixed to said member, and means carried by said member and cooperating with said stationary cam for turning said head through a predetermined path as said movable cam moves said head to and from wrapper applying position.

10. In a cigar machine, the combination with a support provided with a suction conduit through which suction is conducted to a wrapper transfer, a driving member rotatably mounted upon said support, a tubular shaft rotatably mounted in said support, means for rotating said shaft, a suction transfer head supported on said shaft, a stationary cam adjacent said head, means carried by said shaft and cooperating with said cam for rotating said head about a vertical axis and translating it horizontally in a closed and irregularly curved path to and from a wrapping position.

11. In a cigar machine, means for translating a cigar wrapper transfer unit comprising a driving element attached to said unit, a plurality of spaced driving members located on said element, and a movable device provided with a plurality of driving tracks cooperating with said members.

12. In a cigar machine, means for translating a cigar wrapper transfer unit provided with a wrapper carrier head in a closed path and at a varying speed comprising a rotatable cam provided with a plurality of crossing cam tracks, a driving disk secured to said unit, cam followers on said disk and coacting with said tracks, means for rotating said cam whereby upon movement thereof at least two of said followers are maintained in contact with said tracks and said head is moved to and from wrapper receiving and laying positions.

13. In a cigar machine, a wrapper transfer head translating mechanism comprising a movable cam provided with a plurality of cam tracks, a driving member secured to said head, a stationary cam, a plurality of arms attached to said head, means on said member and arms cooperating with said cams whereby upon rotation of said movable cam said head is translated with varying motion in a closed path to and from wrapper receiving and laying positions.

14. In a cigar machine transfer device, means for moving said device with varying movements in a closed path to and from wrapper receiving and delivering position, said means comprising a cam provided with a plurality of crossing cam tracks, a driving device, means for moving said cam continuously, and connections between said cam and device cooperating with said tracks for moving said device intermittently.

15. In a cigar machine wrapper transfer device, a movable driving member provided with a plurality of cam tracks, a driven member for moving said transfer device, symmetrically spaced driving elements carried by said member, and cooperating with said tracks, and means for moving said member continuously whereby at least two elements on said driven member coact with said tracks and rotate said device with a varying intermittent movement.

16. Wrapper transfer mechanism for cigar machines comprising a shaft journaled in a support, a driving device attached thereto, a supporting member secured to said shaft, an arm pivotally attached to said member, a suction transfer head attached to said arm, a shaft carried by said head, control arms attached to said last-named shaft, and means cooperating with said first-mentioned shaft and arms for moving said head in a closed path with varying and intermittent movements to and from wrapper receiving and laying positions.

17. Wrapper transfer mechanism for cigar machines comprising a hollow suction shaft provided with suction vents journaled for rotation in a support, a driven member rotating said shaft, a hollow supporting element attached to said shaft and adjacent a vent, a hollow arm pivoted to said element, a suction transfer head secured to said arm, means for controlling the suction in the mechanism, a shaft carried by said head, control arms attached to said last-named shaft, and means cooperating with said driven member and arms for moving said head in a closed path with varying and intermittent movements to and from wrapper receiving and laying positions.

18. Wrapper transfer mechanism for cigar machines comprising a shaft journaled in a support, a driving device attached thereto, a supporting member secured to said shaft, an arm pivotally attached to said member, a suction

transfer head attached to said arm, a shaft carried by said head, a control member attached to said last-named shaft, said member comprising a plurality of arms and a gear segment, a cam positioned adjacent said member, a gear sector secured to said cam and adapted to cooperate with said segment for rotating said head in a horizontal plane, cam rolls on said arms coacting with tracks on said cam and means for moving said head with intermittent motion in a closed path whereby said arms control the applying of a wrapper to a cigar bunch and return the head into proper receiving position.

19. In a cigar machine, a wrapper transfer head provided with an opening, and adapted to carry a wrapper from a wrapper supply to a wrapping station, a cover mounted on said head and normally covering said opening, a stationary compressed air nozzle adjacent said station, and means for moving said head to said station whereby said nozzle contacts and displaces said cover and compressed air is directed through said opening to release the flag end of a wrapper from said head.

20. In a cigar machine, a wrapper carrier mechanism, provided with an opening adjacent the flag end thereof, a normally closed cover positioned over said opening, and means for opening said cover and directing a blast of compressed air through said opening, said means comprising a stationary nozzle adapted to contact and open said cover as said mechanism moves to wrapper releasing position.

21. In a cigar machine, means for supporting a wrapper carrier, comprising a shaft, a plurality of hollow articulated arms secured to said shaft, said arms being provided with a continuous curved suction conduit, a movement controlling mechanism intermittently rotating said shaft and means controlling the movement of said carrier and cooperating therewith for moving it in a closed path during each cycle of said machine.

22. In a cigar machine, means for supporting a wrapper carrier for movement to and from a wrapping position, comprising a rotating shaft, a hollow elbowed arm removably clamped thereto for rotation therewith, a second hollow elbowed arm pivotally secured to said first named arm, a bearing between said arms, a connecting member removably securing said arms together, a suction wrapper carrier affixed to said second arm, and means for rotating said shaft to move said elbowed arm carried thereby through one complete revolution once each cycle of said machine.

23. In a cigar machine wrapper transfer mechanism, a wrapper carrier head, a suction conduit drive shaft, a hollow articulated member mounted upon said shaft and supporting said head for pivotal movement thereon, said member including hollow elbowed arms removably connected together with a single joint and a removable element holding said arms together for relative pivotal movement, and means for intermittently rotating said shaft to move said member through one complete revolution during each operating cycle of said mechanism.

24. In a cigar machine, a wrapper transfer mechanism, comprising a rotating shaft provided with a suction conduit, a hollow articulated member clamped to said shaft and connecting with said conduit for rotation therewith, said member including a plurality of removably joined hollow elbowed arms, means for holding said arms in articulated relationship, a suction transfer head secured to the free end of one of said arms, and means for rotating said shaft to translate said member through one complete revolution during each cycle of said machine.

25. In a wrapper transfer mechanism for a cigar machine, a wrapper carrier head, means for moving said head in a closed path between a wrapper applying station and a source of supply of wrappers, said means including a movable cam mounted on a vertical axis, and connections between said head and cam for moving said head in a horizontal plane through its entire path of movement.

26. In a wrapper transfer mechanism for a cigar machine, a wrapper carrier head, means for moving said head in a closed path to and from a wrapper applying station and a source of supply of wrappers, said means including a movable cam mounted on a vertical axis, connections between said head and cam for moving said head in a horizontal plane through its wrapper applying path, and other cam means for engaging control mechanism on said head for swinging it about a vertical axis during the application of a wrapper to a cigar bunch.

27. In a cigar machine, the combination with a wrapper cutting device and a bunch wrapping station, of means for transferring bunches to said station and a transfer for conveying wrappers to bunches in said device for application thereto, said transfer comprising a suction carrier head, means for moving said carrier head in a horizontal plane only during its entire movement to and from said device and station, movable transfer driving means, stationary control mechanism and connections between said last named means and mechanism for moving said transfer at least once each cycle of said machine in a closed and irregularly curved path to and from said device and station.

28. In a cigar machine, in combination with cigar wrapping mechanism, a wrapper transfer head provided with a passage adjacent the flag holding end thereof, and adapted to carry a wrapper from a wrapper supply to a wrapping station, a movable cover member normally closing said passage, means located adjacent said station for engaging said member to open said passage, and mechanism for creating a fluid pressure in said means to direct a fluid under pressure through said passage to eject the flag of a wrapper from said head.

29. In a cigar machine, in combination with cigar wrapping mechanism, a wrapper carrier head provided with a duct adjacent the flag carrying end thereof, a movable cover mounted on said head normally closing said duct, a device for directing a fluid under pressure into said duct to release the flag ends of wrappers from said head, and means for imparting relative movement to said cover and device by the engagement of one with the other.

30. The combination with a wrapper carrier, of a rotary cam for moving said carrier in a closed path to transport a leaf section edgewise along one portion of said path in a single plane to a leaf rolling position, and return said carrier from said position along a different part of said path.

31. In a cigar machine, a wrapper transfer device, comprising a suction wrapper carrier head, mechanism for moving said head through a closed and irregularly curved path during each cycle of said machine, including a rotary driving

member and a stationary cam cooperating with said mechanism for effecting said movement.

32. 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 juxta-position with said duct, and means for directing compressed air through said nozzle and duct to force the flag end of a wrapper from said head.

33. In a cigar machine provided with a source of supply of wrappers and a bunch rolling station, a wrapper transfer device, including a suction carrier head, a vertical support mounting said head for movement relative thereto, rotary means for intermittently moving said head and causing it to dwell at said source of supply and said station once during each cycle of the machine, and stationary cams provided with closed and irregularly curved tracks for effecting movement of said head in a closed and irregular path to and from said source of supply and station.

34. In a cigar machine wrapper transfer device, the combination with a suction wrapper carrier head, of means for moving said head through a closed and irregularly curved path once each cycle, including intermittently rotating driving members, and a plurality of stationary cams provided with closed and irregularly curved tracks cooperating with said means to effect said movement.

35. In a cigar machine, the combination with a suction wrapper carrier head, of a movable support for said head, means for moving said support through 360° during each cycle of said machine, said means including rotary driving members, means for driving said members intermittently and at varying speeds, and stationary cams provided with closed and irregularly curved tracks cooperating with said members for effecting the movement of said head through a closed and irregularly curved path once during each revolution of said support.

36. In a cigar machine having a wrapper cutting die and a bunch rolling station, a wrapper transfer device comprising a movable support, a shaft journalled in said support, a wrapper carrier head mounted on said shaft, means for intermittently moving said head through a closed and irregularly curved path, comprising rotary driving and driven members operative to interrupt the movement of said head at said die and station, stationary cams cooperating with said members and support for effecting said movement, and means mounted on said shaft and engaging one of said cams for rotating said head relative to said support during the movement of said support to position said head over said die at the conclusion of each feeding cycle of said head.

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