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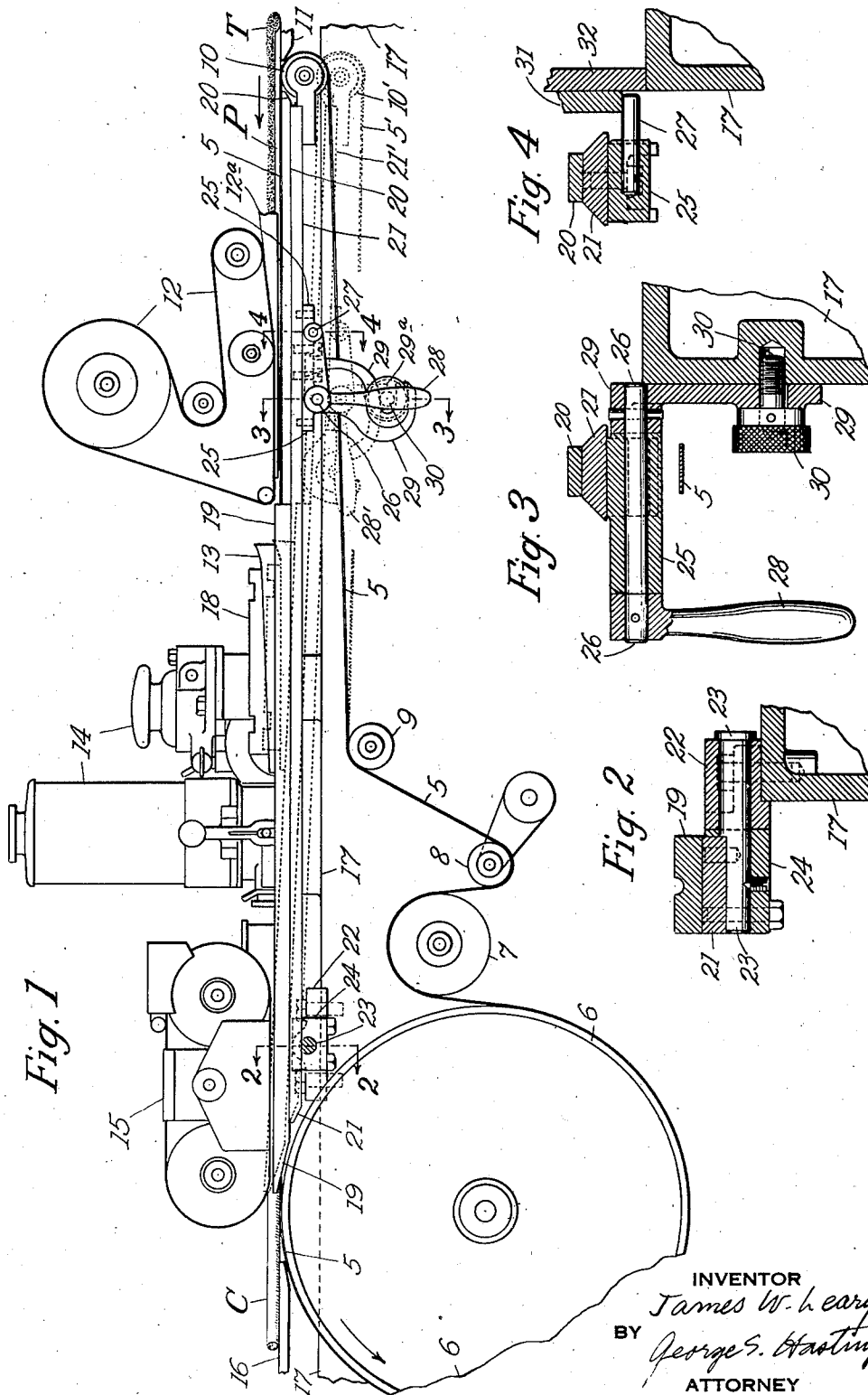
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FORMER FOR CIGARETTE MACHINES

Original Filed Jan. 8, 1936

2 Sheets-Sheet 1



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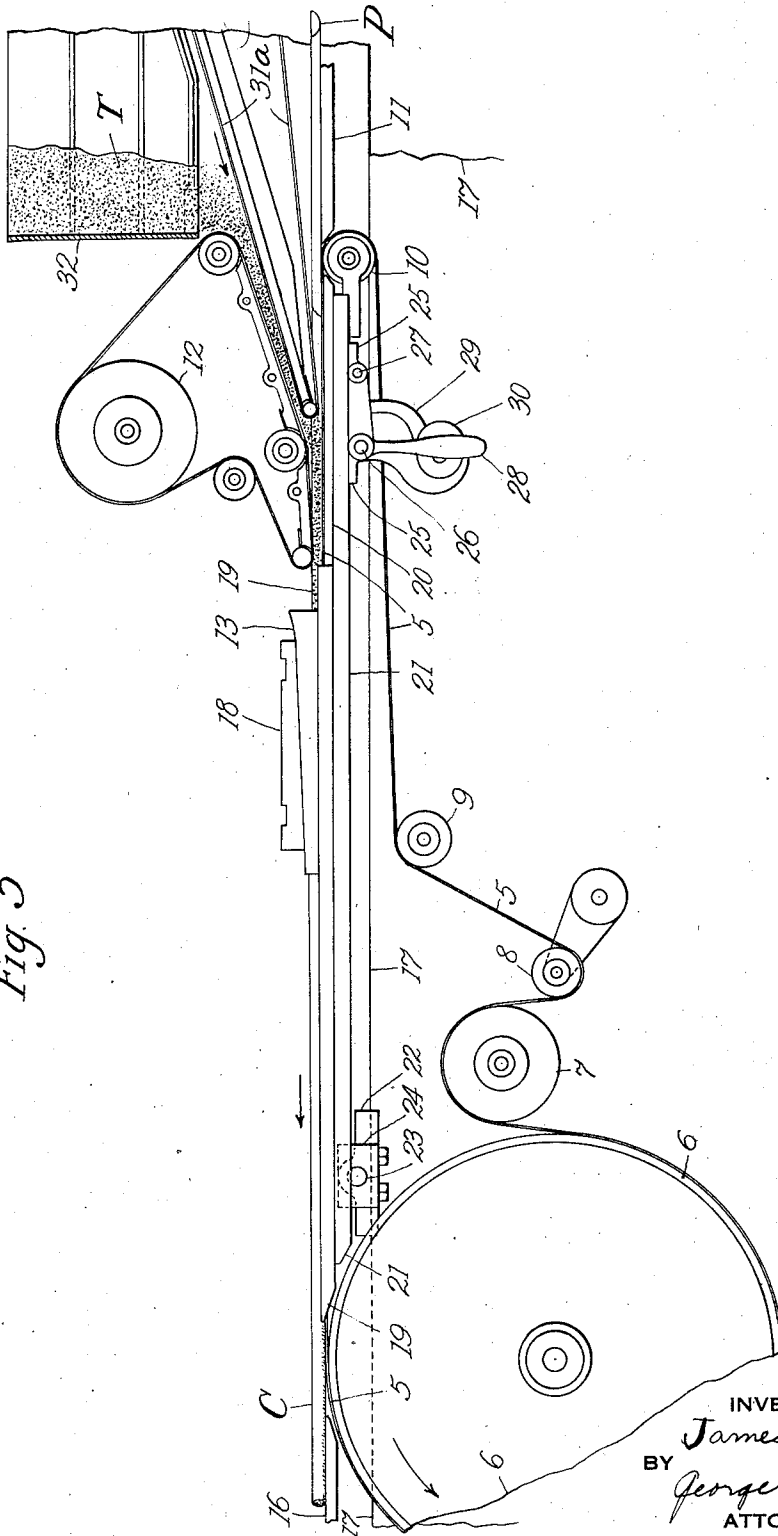
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2,190,032

FORMER FOR CIGARETTE MACHINES

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11 Claims. (Cl. 131-66)

This invention relates to improvements in the rod-formers of continuous rod cigarette machines, its main object being to provide ready accessibility of the same.

5 The rod former is the part of the cigarette machine in which most of the operating trouble occurs and which therefore requires the most attention. For perfect operation of the machine the rod-former must be kept clean of obstructions such as spilled tobacco, dust and other matter which cause "choking" at the tongue portion thereof and at the compressor members; in starting the machine the cigarette paper must be threaded through it and, in case of breakage, 10 the same must be re-threaded; and the rod-forming tape must be replaced from time to time when worn out. To perform all these tasks without undue loss of time, the rod-former in the present invention is made as a separate unit 15 pivoted or otherwise movably mounted on the bed of the machine and provided with a latch so that it can be lowered when necessary and as quickly raised and re-locked in operating position. The rod former may also be provided with a device for raising and lowering it, so arranged that one-quarter turn of a handle drops the forward end of the rod former just enough to allow the operator's hand to enter between it and the bottom of the cigarette rod to an adequate distance from said lowered end. 20 Further objects of the invention therefore are to provide mechanism for relatively separating the rod-former and the compressor and locking the rod-former in operative position. With these 25 and other objects not specifically mentioned in view, the invention consists in constructions and combinations hereinafter fully described and then set forth in the appended claims.

30 In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts:

Fig. 1 is a fragmentary elevation of one type of continuous-rod cigarette machine equipped with the improved rod former and a novel compressor belt;

Fig. 2 is a cross-section on line 2-2 of Fig. 1, showing the pivot of the rod-former on an enlarged scale;

Fig. 3 is an enlarged cross-section on line 3-3 of Fig. 1, showing the latch and the lowering and raising device;

Fig. 4 is an enlarged cross-section on line 4-4 of Fig. 1, showing members for stopping the rod

former when it is raised into operating position; and

Fig. 5 is a fragmentary side elevation of another type of cigarette machine equipped with the improved rod former.

Generally stated, the rod former and the compressor are made relatively separable to provide access for removal of obstructions which may cause "choking" at the portion of the rod former underlying the compressor. In the particular embodiments herein illustrated the rod former is bodily movable relative to the compressor, and in the best constructions contemplated the compressor comprises a set of endless traveling belts on to one of which the tobacco is showered, to compress the stream of tobacco and deliver it to the cigarette paper web propelled by the rod-forming tape. The particular arrangements selected to illustrate the invention are but certain of many possible embodiments of the invention. The invention therefore is not to be restricted to the details illustrated and described nor to the particular embodiments chosen as illustrative of the invention.

Referring to Fig. 1, in the embodiment of the invention depicted therein a rod-forming tape 5 driven by a tape wheel 6 and running over rollers 7, 8, 9 and 10 propels the paper web P from a trough 11 wherein a stream of tobacco T is continuously showered on the paper, and propels it between side guides 12a and under a compressor belt 12, these guides confining the stream of tobacco between the tape and compressor belt. The belt travels at the same speed as the rod-forming tape and acts to slightly compress the stream of tobacco on the paper while the same carries it under the tongue 13 which compacts the stream of tobacco to the desired diameter. This tongue is a part of the rod-former. In passing through the rod-former the margins of the paper web P are lapped on each other about the compacted stream of tobacco, the overlapped margin being previously coated with paste on its inner face by a paster 14 of conventional construction and the seam so formed being sealed by any suitable type of sealer. A heated sealer belt 15 of well known type has been selected for exemplification of the sealer herein. The finished cigarette rod C is guided over the plate 16 to the cutoff (not shown).

The compressor belt 12, paster 14 and sealer 15 are mounted on members fastened on bed 17 of the machine. The rod former comprises the tongue 13, an angle-bar 18 carrying the tongue, 55

a bottom block 19 on which the angle-bar is removably mounted, a flat bar 20 abutting the forward end of the block 19 and serving to support the portion of the tape 5 underlying the compressor belt 12, and a carrier bar 21 which extends between the trough 11 and the plate 16 and carries at its forward end the guide roller 10 of tape 5. The rear portion of bar 21 is of rectangular cross-section corresponding to the width of bar 19 while its forward portion is beveled to the width of the narrower bar 20.

The bar 21 is pivoted at its rearward end and provided with a raising and lowering device near its forward end, so that it may readily be tilted through a limited extent to afford access to the tobacco on the portion of the cigarette paper web underlying the compressor belt 12 for removal of lumps of tobacco or other obstructions which produce "choking". A cross-section of the pivot is shown in Fig. 2. To the bed 17 is attached a bearing block 22 carrying a pin 23. The top of the portion of this pin projecting from bearing 22 is flattened to fit the under side of carrier bar 21 to which it is fastened by a clamp piece 24. Thus, the carrier 21 is supported on bed 17 by the pin 23 which is free to turn in bearing 22.

A suitable form of device for lowering and raising the rod former is shown in cross-section in Figs. 3 and 4. To the bottom of carrier bar 21 is fastened a block 25 which has a bearing for a long pin 26, Fig. 3, and in which is also fastened a short pin 27, Fig. 4. On the outer end of the pin 26 is mounted a handle 28, and to the end projecting from the rear of block 25 is affixed a cam piece 29 having a curved face of progressively decreasing radius with respect to the axis of the pin 27 and a hooked end engaging a thumb screw 30 threaded into bed 17. Upon swinging handle 28 to the left the hooked end is disengaged from the screw 30 and the curved face of the cam 29 rides on the screw 30, permitting the bar 21 to turn on pivot 23 until the bar 28 reaches its dotted position 28' shown in Fig. 1, whereupon the tip 29a of the cam piece engages with screw 30 and stops further motion. On swinging handle 28 back the cam 29 causes the bar 21 to rise until, in the operating position of the rod former, the pin 27 engages a stop 31 attached to a frame member 32 on bed 17. By then tightening screw 30 against the hooked end of the cam 29, the rod former is held in position as long as it functions without requiring attention. Before lowering the rod former, the sealer 15 is swung back out of operating position, to clear the rear end of the rod former overhanging the pivot 23, the overhanging portion moving upwards slightly when the rod former is lowered.

In the preferred form of the invention the tobacco showered from the chute of the cigarette machine feed (not shown) falls through an inverted funnel 32 and is deposited on the traveling forwarding belt 31a in the form of a continuous stream which is carried under the compressor belt 12 (this arrangement being similar to that shown in Patent No. 1,998,146, granted April 16, 1935, on the application of E. D. Smith) for compression thereby and then delivered between side guides (not shown) on to the cigarette paper P which is propelled through the rod former by the rod-forming tape 5. The latter is likewise driven by the tape wheel 6 and trained over rollers 7, 8, 9 and 10. The construction of the rod former is identical with that shown in Figs. 1-4, where-

fore further description thereof is deemed unnecessary. It should be noted, however, that in this arrangement the rod former may be readily lowered from its operative position to permit removal of "chokes" which may occur under the compressor belt 12.

While the compressor has been exemplified respectively by an endless traveling belt and a set of the same, it will be understood that compressor wheels may be used instead. Such compressor wheels may be arranged at any suitable location relative to the rod former, and may be used in combination with feed and/or compressor belts, a suitable arrangement of a compressor wheel in combination with compressor belts being shown in Patent No. 1,992,749, granted February 26, 1935, on the application of G. W. Gwinn.

What is claimed is:

1. In a cigarette machine, the combination with a rod former provided with a tongue adjacent its forward end, of a traveling rod-forming tape acting to forward through said rod former and under its tongue a cigarette paper web carrying a stream of tobacco, and means for compressing the tobacco on said web on the portion of the rod former in front of said tongue while it is being forwarded by said tape, said rod former being movable bodily away from said compressing means into a position wherein threading of the paper and the removal of "chokes" is facilitated.

2. In a cigarette machine, the combination with a rod former provided with a tongue, of a traveling rod-forming tape acting to forward through said rod former and under its tongue a wrapper web carrying a stream of tobacco, a set of compressor belts coacting to compress a stream of tobacco and deposit and further compress the same on said rod former in front of said tongue, members confining the tobacco between said belts and upon the portion of the rod former in front of said tongue, said rod former being movable bodily away from said compressor belts and members into a position wherein threading of the paper and removal of "chokes" is facilitated, and a paster operating to apply paste to the inner face of one of the margins of the web, and said rod former being adapted to lap the pasted margin of the web on its other margin to form a seam.

3. In a cigarette machine, the combination with a rod former provided with a tongue, of a traveling rod-forming tape acting to forward under said tongue and through said rod former a wrapper web carrying a stream of tobacco, a traveling belt underlying the portion of said rod former in front of said tongue and coacting therewith to compress the tobacco on said web while it is being forwarded, members confining the tobacco between said belt and rod former, said rod former being movable bodily away from said belt and members to a position wherein threading of the paper and removal of "chokes" is facilitated.

4. In a cigarette machine, the combination with a rod former, of a trough aligned with said rod former, a traveling rod-forming tape acting to forward through said rod former a cigarette paper web carrying a stream of tobacco, and means for compressing the tobacco on the cigarette paper while it is being forwarded by said tape, said rod former being movable bodily away from said trough to a position wherein threading of the paper and the removal of "chokes" is facilitated.

5. The combination with a pivoted cigarette rod former, said rod former being movable bodily

as an entirety about its pivot, of means for locking said rod former in operative position.

6. The combination with a pivoted cigarette rod former, said rod former being movable bodily as an entirety about its pivot, of mechanism for raising and lowering said rod former to and from operative position on its pivot.

7. The combination with a pivoted cigarette rod former, said rod former being movable bodily as an entirety about its pivot, of mechanism for raising and lowering said rod former to and from operative position on its pivot, and means for locking said rod former in its raised position.

8. The combination with a pivoted cigarette rod former, movable bodily as an entirety about its pivot to a position wherein threading is facilitated, of a tape wheel supported in a position entirely below said rod former, and a rod-forming tape trained over and driven by said wheel and threaded through and running along the bottom of said rod former and carrying a stream of tobacco.

9. The combination with a pivoted cigarette rod former movable bodily as an entirety about its pivot to a position wherein threading is facilitated, of a tape wheel supported in a position adjacent said rod former, a rod-forming tape trained over and driven by said wheel and threaded through said rod former, and a latch for retaining said rod former at operative position.

10. The combination with a pivoted cigarette rod former, said rod former being movable bodily as an entirety about its pivot, of a tape wheel supported in a position adjacent said rod former, a

rod-forming tape trained over and driven by said wheel and threaded through said rod former, a latch for retaining said rod former at operative position, and mechanism for turning said rod former about its pivot to raise and lower it to and from its operative position while said latch is released.

11. In a cigarette machine, the combination with a channeled rod former block, of a tongue supported from said block, a traveling rod-forming tape acting to engage and forward a paper web carrying a stream of tobacco, under said tongue and through the channel of said block, an endless belt traveling in a fixed path overlying and compressing the tobacco on said paper web before it is forwarded under said tongue, pulleys permanently secured on fixed axes supporting said belt, a bar underlying said belt and supporting the tape and paper web in position to permit compression of the tobacco by said belt, a wheel revolving on a stationary axis and constituting the sole means for driving said tape, a member pivoted on an axis extending transversely of said tape and supporting said bar, and a roller on said member over which said tape is guided, said member, bar, and rod-forming tape being movable arcuately in the vertical plane of the tape to lower said bar with the tape and roller away from said compressing belt into position wherein threading of the paper and the removal of chokes is facilitated without affecting the driving of either said tape or said belt.

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