

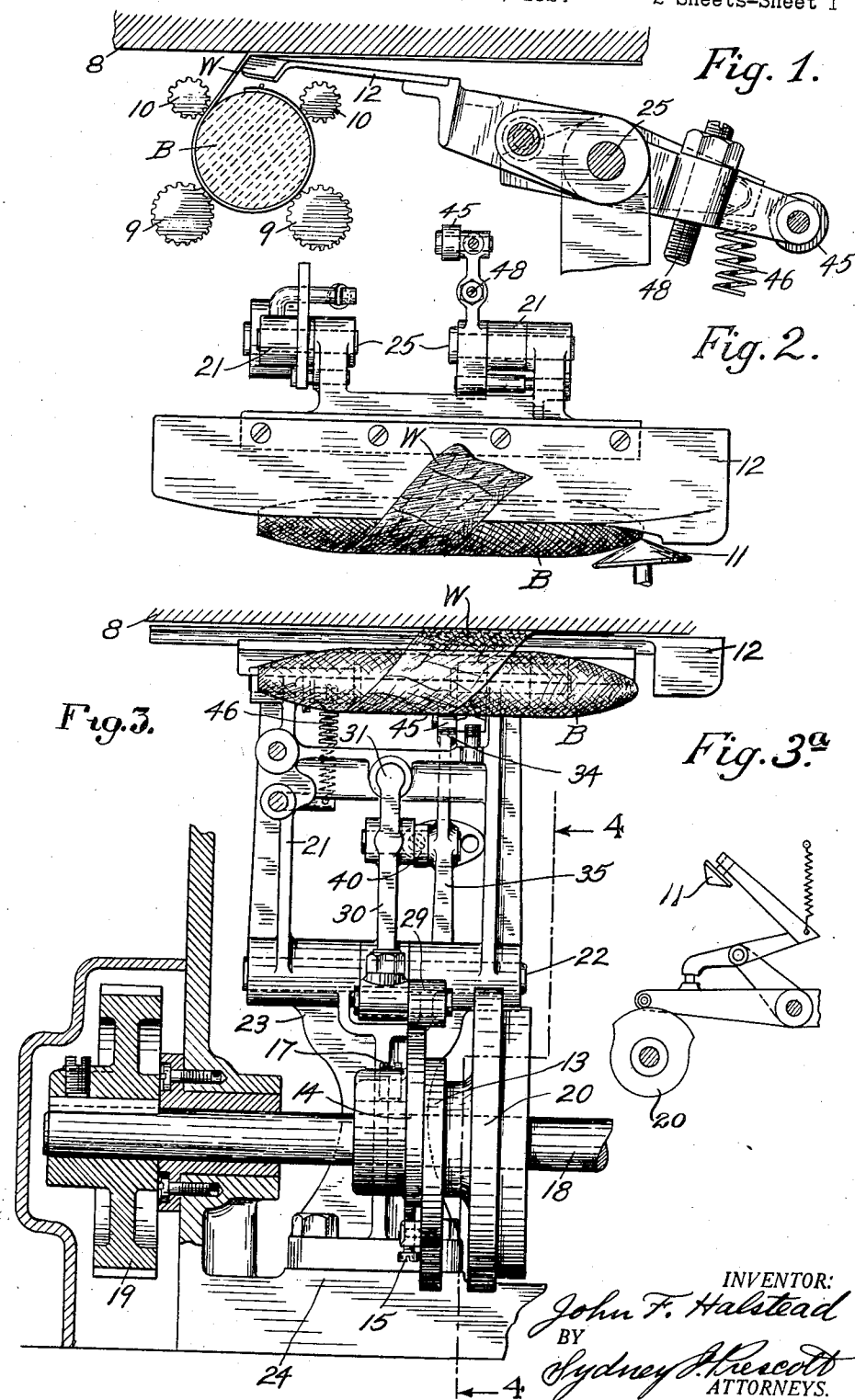
April 27, 1926.

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J. F. HALSTEAD
CIGAR WRAPPING MECHANISM

Filed March 15, 1924

2 Sheets-Sheet 1



INVENTOR:

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April 27, 1926.

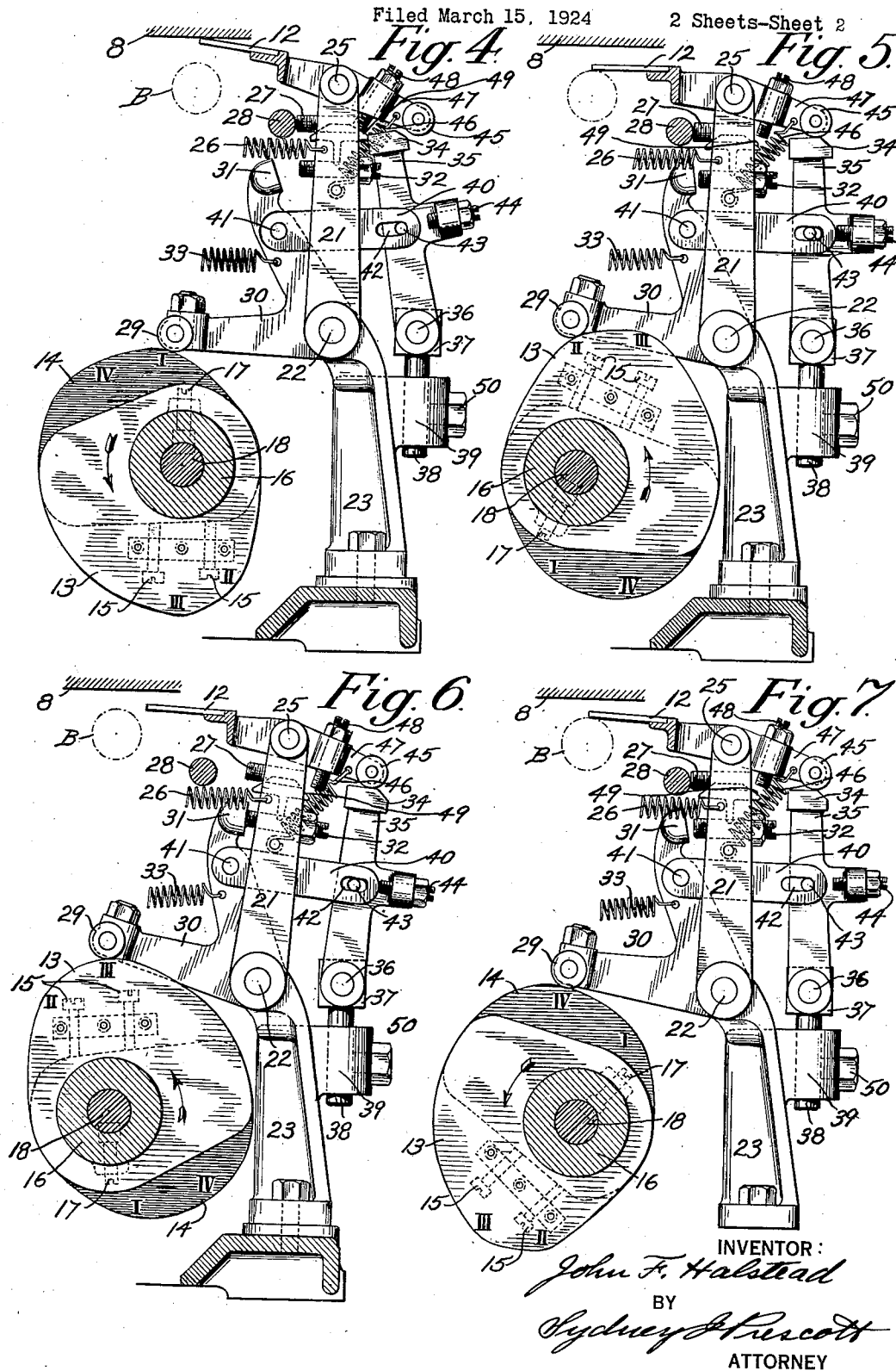
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UNITED STATES PATENT OFFICE.

JOHN F. HALSTEAD, OF BROOKLYN, NEW YORK, ASSIGNOR TO INTERNATIONAL CIGAR MACHINERY COMPANY, A CORPORATION OF NEW JERSEY.

CIGAR-WRAPPING MECHANISM.

Application filed March 15, 1924. Serial No. 699,482.

To all whom it may concern:

Be it known that I, JOHN F. HALSTEAD, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Cigar-Wrapping Mechanisms, of which the following is a specification.

This invention relates to an improvement in cigar wrapping mechanisms.

Certain cigar wrapping mechanisms are provided with a header, the function of which is to assist in re-winding the wrapper about the head or closed end of the bunch at the end of the wrapping operation. They are also provided with a tension plate and operative connections, the function of the tension plate being to guide the wrapper on to the bunch as it is being wound thereabout. This tension plate has an approaching movement, with respect to the bunch in the wrapping mechanism, which is the resultant of a forward movement and an uptilting movement. The tension plate also has a retreating movement which is the resultant of a downward movement and a rearward movement. When the quality of wrappers varies, as it frequently does, it is necessary to change the timing of the header and also to change the timing of the retreating movement of the tension plate, but not its approaching movement.

Heretofore, the mechanisms referred to have been provided with a plurality of cams controlling the various movements above mentioned; and it has been found that in the factories where the machines are used, when a change of adjustment is necessary, the operators frequently fail to make all the adjustments necessary, with the result that the machine will not operate correctly. The main object of the present invention is the production of a device which overcomes this difficulty by combining the cams which control the movement of the header and the movement of the tension plate, so that only one adjustment need be made manually, the others being made automatically. A further object is the simplification (in the interest of economy of production and operation) of cigar wrapping mechanisms. With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described and then spe-

cifically pointed out in the claims hereunto appended.

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 side elevation showing diagrammatically a cigar wrapping mechanism and coacting wrapper support with a tension plate in position to guide the wrapper on to a bunch in the wrapping mechanism; Fig. 2 is a plan view of the tension plate shown in Fig. 1; Fig. 3 is a front elevation of a mechanism constructed in accordance with the invention and including the tension plate illustrated in Figs. 1 and 2; Fig. 3^a is a diagrammatic view showing the connections between the header and its operating cam; and Figs. 4, 5, 6 and 7 are side elevations of the structure shown in Fig. 3, but on a reduced scale and taken on the line 4—4 in Fig. 3, showing the parts in the relative position they occupy at various times during the cycle of operation of the mechanism.

In carrying the invention into effect, there is provided a cigar wrapping mechanism comprising bunch rolling means of suitable type and having a header, a movable tension plate of suitable type and coacting with the bunch rolling means to guide a wrapper onto a bunch in said rolling means as it is drawn from a suitable wrapper support during the wrapping operation, and actuating means for producing the approaching and retreating movements of said plate with respect to said rolling means, and provided with a single adjusting device for synchronously varying the timing of said retreating movement and said header. In the best constructions, this actuating means includes a two-part cam and means for relatively adjusting its parts circumferentially, one part of said cam controlling the approaching movement, and the other part controlling the retreating movement. In the best constructions also, there is further provided means controlled by said actuating means for tilting the plate during its approaching movement and also during its retreating movement; and means for varying the path of said plate in accordance with the size of a bunch in said rolling means. The parts above mentioned may be widely varied in construction within the scope of the claims, for the particular mechanism selected to illustrate the invention is

but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

Referring to the drawings, B indicates a cigar bunch in cross section in Fig. 1, in full lines in Figs. 2 and 3, and diagrammatically by the broken line circle in Figs. 4 to 7 inclusive. W indicates a wrapper being wound about the bunch B as it is drawn from a wrapper support or wrapper carrier 8, constructed and operating in a manner well known in the art. The bunch rolling means of the wrapping mechanism is of the roller type and includes two lower rolls 9-9 and two smaller upper rolls 10-10; the construction and operation of these rollers is also well known in the art. The wrapping mechanism also includes a header 11 of the conical type, the construction and operation of which is well known in the art. And it further includes a tension plate 12, the general construction and operation of which is also well known in the art.

As hereinbefore pointed out, however, it is necessary at times to change the timing both of the header and of the retreating movement of the tension plate; and to avoid the difficulties heretofore encountered in effecting this change of timing, there is provided actuating means for producing the approaching and retreating movements of the tension plate with respect to the bunch rolling means, and this actuating means is provided with a single adjusting device for synchronously varying the timing of the retreating movement of the tension plate and of said header. With this end in view, there is provided a two-part cam 13-14, the two parts being relatively adjustable by means of adjusting screws 15-15 carried by the part 13 and bearing against the part 14. The cam 13 is rotatably mounted on the hub 16 of the cam 14, and the cam 14 is held fast by means of a set screw 17 on a shaft 18 journaled in suitable bearings in the wrapping mechanism and carrying at one of its ends a gear 19 in mesh with and driven by another gear not shown, the latter being one of the train which drives the various moving parts of the mechanism.

The cam part 13 is provided with a cam surface 20 spaced from the cam 13 but constructed integrally therewith, so that adjustment of the cam 13 also adjusts the cam surface 20 with respect to the cam 14. The cam 14 controls the approaching movement of the tension plate which does not need to be varied. The cam 13 controls the retreating movement of the tension plate, and the cam 20 controls the timing of the header in synchronism with the tension plate retreating movement. Thus, whenever it is necessary to change the timing of the header and of the retreating movement of the tension

plate, the change is made by loosening one of the screws 15 and tightening the other, and by this means circumferentially rotating the cams 13 and 20 to a limited extent on the hub 16 of the cam 14. The operator of the machine cannot make one adjustment without making the other, and cannot make an incorrect relative adjustment. This removes the cause of the difficulty heretofore encountered in adjusting the various parts.

The tension plate is, as usual, mounted upon an oscillating frame 21, fulcrumed on a pin 22, to a bracket 23, rising from the bed-plate 24 of the wrapping mechanism. The tension plate is connected to the frame 21 by means of pins 25 upon which it may tilt. The forward part of the approaching movement of the tension plate is produced by means of a tension spring 26, one end of which is secured to the frame 21, and the other end to a suitable stud, not shown, in the frame of the wrapping mechanism. Its approaching movement is adjustably limited by means of an adjusting screw 27 threaded in the frame 21 and abutting a bar 28 in the path of the screw 27 and supported by the frame of the wrapping mechanism. The rearward part of the retreating movement of the tension plate is effected by the cam 13 which, at the proper time, engages a cam bowl 29, mounted on one arm of a bell-crank 30, fulcrumed on the pin 22 before referred to. The other arm of the bell-crank 30 is provided with a head 31 adapted for intermittent engagement with an adjusting screw 32, threaded in the frame 21 before referred to. The cam bowl 29 is held in contact with the surface either of the cam 13 or of the cam 14, as the case may be, by means of a tension spring 33, one end of which is secured to the bell-crank 30, and the other to a suitable stud carried by the frame of the wrapping mechanism. The structure thus far described provides for the production of the forward part of the approaching movement and for the rearward part of the retreating movement. The approaching movement, however, includes an upward movement, and the retreating movement includes a downward movement of the tension plate, and this is effected by tilting the plate at the proper time. For this purpose, there is provided a floating cam 34 formed on the end of an arm 35, fulcrumed on a pin 36, this pin being carried by a block 37 having an integral stem 38 adjustably mounted in a bearing 39 formed on the rear of the bracket 23 before referred to. The cam arm 35 is connected by suitable adjustable engagement with the bell-crank 30. This connection is made by means of a link 40 pivoted at 41 to the bell-crank 30, and provided at its other end with a slot 42 in which lies a pin 43 fast in the cam arm 35.

The slot 42 provides for lost motion between the bell-crank 30 and the cam arm 35, and this lost motion is limited by means of an adjusting screw 44, carried by the arm 35 and adapted to engage the end of the link 40.

The rear end of the tension plate carries a cam bowl 45 adapted to engage the cam 34 at the proper time. The upward movement of the active side of the tension plate is produced by means of a tension spring 46, one end of which is fast to the frame 21, and the other to the rear-arm 47 of the tension plate. This arm 47 carries an adjusting screw 48 adapted to engage an abutment 49 on the frame 21 when the tension plate is in its uppermost position. The downward movement of the tension plate is effected by the engagement of the cam 34 with the cam bowl 45.

Fig. 4 illustrates the parts in the position they occupy when the cam bowl 29 is in camming position I. At this time, the wrapper is being delivered to a bunch, as shown in Fig. 1, the tension plate being in its foremost and uppermost position. By an inspection of Fig. 4, it will be seen that at this time the cam bowl 45 is out of contact with the cam 34, the adjusting screw 48 then being in engagement with the abutment 49.

As the cams 13-14 rotate in the direction of the arrow, from position I to position II, Fig. 5, the cam bowl 29 rides off of the cam 14 and on to the cam 13, and effects the first part, that is the downward part, of the wrapping movement of the tension plate by operating the bell-crank 30 and the cam 34, thus tilting the active edge of the tension plate downwardly, clear of the wrapper support 8.

As the cams 13-14 continue to rotate, the cam bowl 29 rides on the cam 13 from camming position II to camming position III. This produces a further movement of the bell-crank 30; and during this further movement, the head 31 of said bell-crank engages and pushes ahead of it the adjusting screw 32, which results in effecting the rearward part of the retreating movement of the tension plate 12. During this movement, the end of the link 40 engages the adjusting screw 44, thereby causing the cam arm 35, with its cam 34, to retreat with the tension plate and maintain the latter in its lowermost position. This brings the parts to the position shown in Fig. 6, and while the parts are in this position a wrapped cigar is removed from the bunch rolling means and a fresh bunch is placed therein preparatory to rolling a wrapper thereabout.

Upon a further rotating movement of the cams 13 and 14 from position III to position IV, Fig. 7, the cam bowl 29 rides off the cam 13 again on to the cam 14, and this

cam is so shaped that during this movement the forward part of the approaching movement of the tension plate is effected. The parts are then in the position shown in Fig. 7.

Then, as the cams 13 and 14 continue to rotate, the cam bowl 29 rides from position IV to the initial position I, and during this movement the upward part of the approaching movement is effected, and the parts are returned to the position shown in Fig. 4. Whereupon, the cycle of operations is repeated.

Means are provided for varying the path of said plate in accordance with the size of a bunch in said rolling means, and this is accomplished by varying the amplitude of the movement given the tension plate. It will be recalled that the stem 38 is adjustably mounted in the bearing 39. To hold it in adjusted position a cap set screw 50 is provided. Referring particularly to Fig. 7: If the bunch B were smaller than that indicated, the stem 38 would be slightly raised; but if it were larger, then the stem 38 would be slightly lower in the bearing 39. In either case, the screw 48 would have to be readjusted because the uppermost position of the tension plate 12 is controlled by the never varying position of the wrapper carrier or wrapper support 8.

In view of the foregoing, a detailed description of the operation of the mechanism is deemed unnecessary and is therefore omitted in the interest of brevity.

What is claimed is:

1. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, and actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header.

2. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, and actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header and including a two-part cam and means for relatively adjusting its parts circumferentially.

3. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, and actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header and in-

cluding a two-part cam and a pair of adjusting screws carried by one part and bearing against the other part to relatively adjust and lock said parts circumferentially.

- 5 4. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, and actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header and including a two-part cam and means for relatively adjusting its parts circumferentially, one part of said cam controlling said approaching movement and the other part controlling said retreating movement.

- 20 5. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header, and means controlled by said actuating means for tilting said plate.

- 30 6. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, actuating means for producing approaching and retreating movements of said plate with respect to

said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header, and means including a floating cam and adjustable linkage therefor for tilting said plate.

- 40 7. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header, and means for varying the path of said plate in accordance with the size of a bunch in said rolling means.

- 50 8. A cigar wrapping mechanism, comprising bunch rolling means having a header, a movable tension plate, actuating means for producing approaching and retreating movements of said plate with respect to said rolling means and provided with a single adjusting device for synchronously varying the timing of said retreating movement and of said header, means controlled by said actuating means for tilting said plate, and independent adjusting means for initially adjusting the limits of said movements.

65 In testimony whereof, I have signed my name to this specification.

JOHN F. HALSTEAD.