Sept. 17, 1946. J. H. LINDSAY ET AL.
CIGAR PUNCHING MACHINE
Filed April 4, 1944

[Patent Diagrams]

Inventors
John H. Lindsay
Sam Rose

See patent for further details.
CIGAR PUNCHING MACHINE


Application April 4, 1944, Serial No. 529,548

5 Claims. (Cl. 131—254)

1. This invention relates to machines for punching the butt ends of cigars in bunches, and has for an object to provide a machine in which the proper amount of pressure is applied to punch the cigars but without danger of breaking them.

A further object is to provide a machine readily adaptable to punch cigars while in bunches, the cigars being of different shapes and sizes, by merely interchanging certain of the parts which are designed in accordance with the particular shapes and sizes of the cigars in the bunch to be punched.

Other objects and advantages will appear from a more complete description of an embodiment of the invention shown in the accompanying drawing in which:

Figure 1 is a front elevation of a cigar punching machine embodying the invention, the machine being in condition to receive a bunch of cigars for punching.

Figure 2 is a vertical sectional view on line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view in part similar to a portion of Figure 2, but with the cup plate broken away and the parts in punching conditions, a bunch of cigars in position to be punched being shown in broken lines.

Figure 4 is a fragmentary view similar to a portion of Figure 2, but showing the parts adjusted for shorter cigars.

Referring to the drawing, at 1 is indicated a table from which extend upwardly a plurality of fixed posts 2 which slideably guide a cup plate 3. This plate 3 is y Pendingly supported as by coil springs 4 surrounding the posts 2, the lower ends of these springs resting upon a lower plate 5 through which the posts 2 extend and to which the plate 5 may be fixed in desired relation thereto as by set screws 5a. Above the plate 5 there is secured a heater plate 6, and for the purpose of securing it this heater plate may have threaded therethrough bolts 7 which may extend through holes through the plate 5, the heads of the bolts being located beneath the plate 5 and nuts 8 threaded thereon will secure these bolts against turning. The heater plate 6 is provided along opposite edges with tubular portions 10 within which are arranged electric heaters 11. This plate 8 is designed to support thereon a needle plate 12 into which are pressed the lower ends of a set of needles 13. These needles are arranged in accordance with the sizes and shapes of bunches of cigars so as to enter the butt ends of the cigars in the bunch as will later appear. Above the needle plate 12, which may be removable, is a plate 14 ably secured against the heater plate 6 as by the nuts 16 on the bolts 17, is positioned the cup plate 3. This cup plate is slideably guided on the posts 2 and its upper face is recessed as at 18 (see Figure 3) to receive the butt ends of the cigars in the bunch. Each of these recesses communicates with a perforation 19 through the cup plate, each perforation providing for the entry of one of the needles carried by the needle plate and properly guiding it into the butt end of the cigar in the recess.

Above the needle plate is positioned a presser plate 20. This is secured to the lower end of a rack bar 21 vertically movable through an arm 22 by the rocking of a rock shaft 23 journeled in the support 21 and having a pinion 24 meshing with the teeth of the rack bar 21. The arm 27 is adjustably secured at the proper height to a post 26, the lower end of which is secured within a boss 28 projecting upwardly from the table 1. The pressure plate 25 is normally held as by a coil spring 35 secured at its upper end to a part 30 of the arm 27 and at its lower end engaged over a post 37 projecting from the hub portion 28 of the presser plate 25.

The shaft 28 is provided with a crank arm 40 and an actuating handle 41 by which the shaft 28 may be rocked and the presser plate 25 depressed. The downward limit of motion of the presser plate is determined by the engagement of a stop screw 45 against a boss 46 of the arm 27.

In operation of the machine, a bunch of cigars, as shown by dotted lines in Figure 3, is placed beneath the presser plate 25 with the butt ends of the cigars in the recesses of the cup plate 3, a cup plate 3 being selected having recesses of a proper size and arrangement to mate the cigars of the bunch to be punched by needles of a needle plate 12 correspondingly arranged in accordance with the perforations through the cup plate. The operator then turns the handle 41 in the direction of the arrow shown in Figure 3 and brings the cigars down against the points of the needles which enter therein and effect the punching operation.

It is desirable, however, that the pressure exerted on the cigars be limited, for if the pressure is too great the cigars may be injured. For this purpose means for preventing such excess pressure is provided, this means comprising, as shown, a pair of presser feet 50, each secured to a guide rod 51 which extends up through the presser plate 25 which is provided with perforated bosses 52 for the purpose. The presser feet are so adjustably spaced from the presser plate 25.
and then fixed in position as by tightening the set screws 54, that when the presser plate has been moved toward the cup plate to an extent to compress the springs 4 to a predetermined desired amount, which thus exert the desired endwise pressure on the cigars, these presser feet engage the cup plate 3 as shown in Figures 1 and 2, whereupon further downward motion of the presser plate is accompanied by a positive downward motion of the cup plate so that no additional pressure is exerted endwise on the cigars than that necessary to bring the presser feet into contact with the cup plate. Thus the latter portion of the punching operation, until the stop screw 45 strikes the boss 46, is accomplished without increase of pressure on the cigars beyond that for which adjustment has been made. The particular advantage of this will be evident from a comparison of Figures 3 and 4, Figure 4 showing a bunch of cigars shorter than shown in Figure 3. The presser foot in Figure 4 is then adjusted so that the pressure plate may descend further before the presser foot engages the cup plate 3 than in the arrangement shown in Figure 3, so that sufficient pressure is exerted between the presser plate and the cup plate to clamp the cigars in position therebetween before the cup plate is moved positively. If this adjustment were employed for the longer cigars shown in Figure 3, the pressure exerted on these longer cigars might be so great as to damage the cigars, and in order to avoid this, the pressure feet in Figure 3 are set lower so that they contact the cup plate 3 before excessive pressure has been exerted on the cigars by the springs 4.

The needles are heated by the needle plate, being secured against the upper face of the heater plate and so are in proper condition to set the tobacco leaves when the needles puncture the cigars so that on withdrawal of the needle the holes remain open with the portions of the tobacco leaf surrounding each needle hole in set condition.

From the foregoing description of certain embodiments of this invention it should be evident to those skilled in the art that various changes and modifications might be made without departing from the spirit or scope of this invention.

We claim:
1. A machine of the class described, comprising a pair of members movable from and toward each other, one of said members having recesses in its face remote from the other of said members spaced in accordance with the spacing of cigars in a bunch of cigars and perforated through said member from the bases of said recesses, a set of needles carried by the other of said members in line with said perforations, said members being secured normally separately to said member sufficiently for the points of said needles to be back from the open ends of said recesses, a presser member moving in line with said pair of members for clamping a bunch of cigars with their rounded ends resting in said recesses, and for then depressing said perforated member toward the other of said pair of members to cause said needles to punch said cigars, and means limiting the approach of said presser member toward said perforated member to a predetermined distance during which approach said yielding means clamps the cigars of the bunch between said perforated and presser members, to thereby cause further motion of said presser member in pressing direction to move said perforated member positively and force the end portions of the cigars against the points of said needles to cause punching of the cigars.
2. A machine of the class described, comprising a table, a plurality of fixed posts extending upwardly from said table, a plate slidably guided on said posts, means for yieldingly supporting said plate above said table, said plate having recesses therein spaced and arranged in accordance with the arrangement of cigars in a bunch of cigars, said plate also having a perforation therethrough coaxial with each recess, a support located between said table and said plate, a set of needles carried by said support in alinement with the perforations of said plate, a pair of members movable above and movable toward and from said plate, a foot adjustably spaced below said presser member and impinging on said plate when said presser member has descended an amount predetermined in accordance with the length of the cigars in the bunch for positively depressing said plate by motion of said presser member and forcing the bunch of cigars against said needles to cause said needles to punch said cigars, and means for moving said presser member.
3. A machine of the class described, comprising a table, a plurality of fixed posts extending upwardly from said table, a plate slidably guided on said posts, means for yieldingly supporting said plate above said table, said plate having recesses therein spaced and arranged in accordance with the arrangement of cigars in a bunch of cigars, said plate also having a perforation therethrough coaxial with each recess, a vertically adjustable support located between said table and said plate and carrying said yielding means, a set of needles supported on said support beneath said plate in line with the perforations therein, a presser member above and movable toward and from said plate, a foot adjustably spaced below said presser member and impinging on said plate when said presser member has descended an amount predetermined in accordance with the length of the cigars in the bunch for positively depressing said plate by motion of said presser member and forcing the bunch of cigars against said needles to cause said needles to punch said cigars, and means for moving said presser member.
4. A machine of the class described, comprising a table, a plurality of fixed posts extending upwardly from said table, a plate slidable along said posts, said plate having recesses in its upper face spaced and arranged in accordance with the arrangement of cigars in a bunch of cigars, said plate also having perforations therethrough coaxial with said recesses, means for yieldingly supporting said plate spaced above said table, a heater plate beneath said slidable plate, a platform supported by said heater plate, a set of needles secured to said platform and spaced to be in alinement with the perforations of said recessed plate, said yielding means normally holding said recessed plate elevated with the points of said needles located adjacent to the lower ends of said recesses, and means for forcing said recessed plate downwardly while the bunch of cigars with their butts resting in said recesses against said yielding means to cause said needles to punch said cigars.
5. A machine of the class described, comprising a table, a plurality of fixed posts extending upwardly from said table, a plate slidably guided on said posts, said plate having recesses in its upper face spaced and arranged in accordance with the arrangement of cigars in a bunch of cigars, said
plate also having perforations therethrough coaxial with said recesses, means for yieldingly supporting said plate spaced above said table, a heater plate beneath said slideable plate, a platform supported by said heater plate, a set of needles secured to said platform and spaced to be in alignment with the perforations of said recessed plate, yielding means normally holding said recessed plate elevated with the points of said needles located adjacent to the lower ends of said recesses, means for forcing said recessed plate downwardly while carrying a bunch of cigars with their butts resting in said recesses against said yielding means to cause said needles to punch said cigars, and a presser foot carried by said forcing means in position to engage said recessed plate and positively depress said recessed plate after such engagement to thereby limit the pressure exerted by said yielding means against the cigars of the bunch.

JOHN H. LINDSAY.
SAM RESO.