Jan. 23, 1934. R. E. RUNDELL 1,944,760

CIGAR BUNCH ROLLING AND SHAPING MACHINE

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FIG. 1

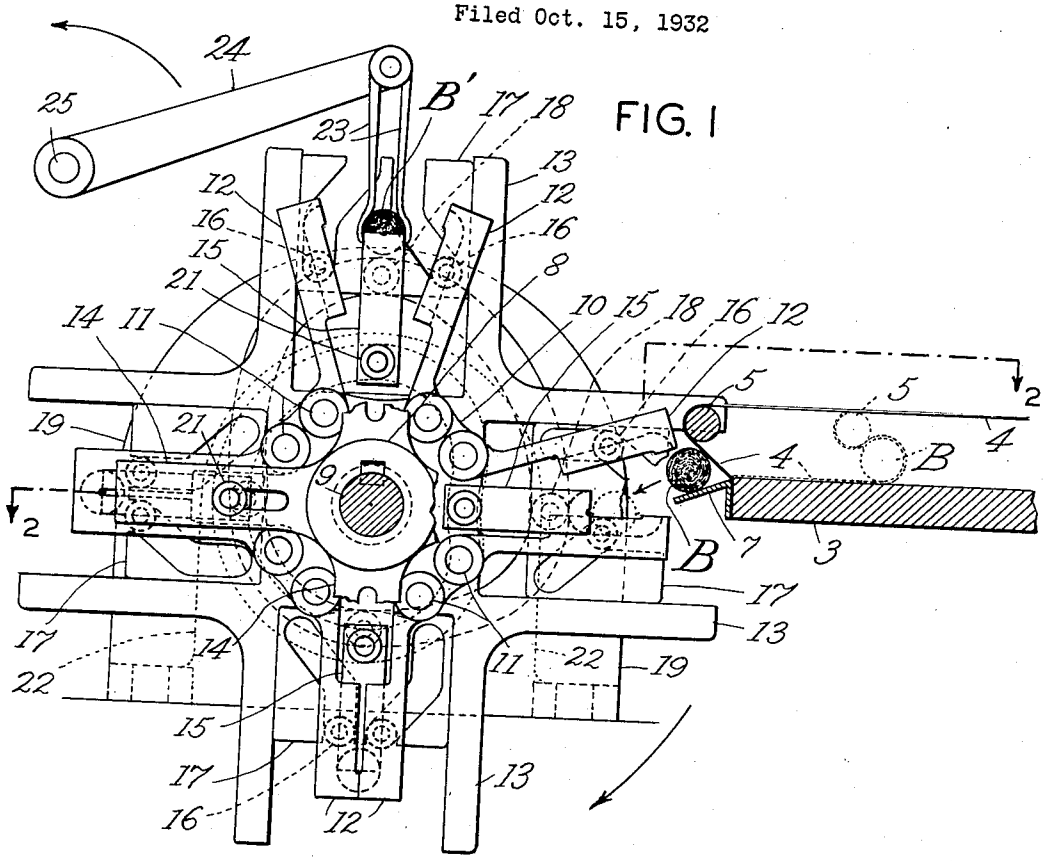
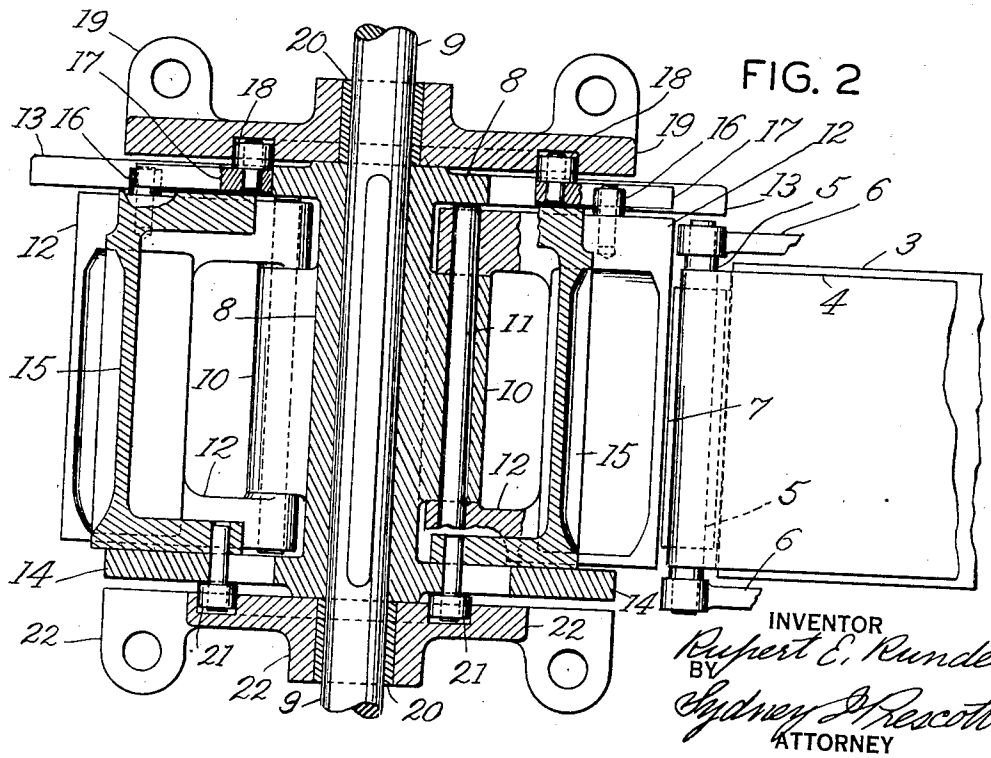


FIG. 2



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CIGAR BUNCH ROLLING AND SHAPING MACHINE

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3 Claims. (Cl. 131—9)

This invention relates to an improvement in cigar bunch rolling and shaping machines, its main object being the production of a combined bunch roller and bunch shaper, thereby effecting greater simplicity of construction and increased economy in operation. With this and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations hereinafter fully described and then specifically set forth in the claims hereunto appended.

In making scrap bunches, it has heretofore been the practice to roll the bunch in one unit and shape it in another, thus necessitating the transfer of the bunch, either by hand or by a mechanical transfer, from the first unit to the second. In the present invention, this necessity is obviated by so combining the two units that the rolled bunch may be directly ejected by the rolling apron of the bunch rolling means into one of the molds of an intermittently rotating turret, from which the bunch, after being pressed into shape, is carried to the wrapper-applying device by a suitable transfer.

The molds of the improved shaper turret are made of three relatively movable parts, each mold consisting of two swingable jaws and a radially reciprocating jaw, the three jaws, when closed, forming the shape of the bunch to be made. In the horizontal receiving position of the turret, the reciprocating jaw and one of the swinging jaws are open. As soon as a bunch has been received, the ensuing motion of the turret closes the jaws of the mold and keeps them closed until the vertical delivery position is reached, in which the swinging jaws are opened, permitting the fingers of a transfer to enter the mold and to take the shaped bunch from the reciprocating jaw on which it then rests. As there is no side-pressure on the shaped bunch when the jaws are open in the delivery position of the turret, no ejecting device of any kind is required and the molds need not be pierced for the penetration of ejecting pins; the construction of the turret, therefore is greatly simplified.

In the accompanying drawing which forms 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 the arrangement of a combined bunch rolling and shaping machine according to the present invention; and

Fig. 2 is a sectional plan view on line 2—2 of Fig. 1.

In carrying the invention into effect there is provided a rotatable turret, a plurality of cigar bunch shaping devices carried by said turret and including cam-actuated opening and closing shaping jaws, and bunch rolling means arranged to deliver bunches directly to said jaws when open. In the best forms of construction contemplated there is provided reciprocable jaws moving between the closed shaping jaws to compress the bunch. These various means and parts may be widely varied in construction within the scope of the claims, for the particular machines 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 specific construction shown and described.

Referring to the drawing, 3 is a rolling table of conventional construction on which the filler charge is rolled into a binder by means of a rolling apron 4 guided by a rolling pin 5 swung back and forth over the table 3 by arms 6 actuated in a suitable manner from the drive of the machine. The bunch B so rolled, at the end of table 3 is delivered by the apron 4 into a chute 7 which guides it directly into one of the bunch shaping molds.

A number of bunch shaping molds are carried by a turret 8 mounted on a shaft 9 rotated intermittently by the drive of the machine in such a manner that one of the molds arrives in a horizontal position opposite the chute 7 just prior to the ejection of a bunch B by the rolling apron 4.

In lugs 10, the turret 8 carries axial pins 11 arranged in pairs according to the number of molds provided, on which pins are pivoted swingable jaws 12; and between the star-shaped end-flanges 13 and 14 of the turret are mounted radially slidable jaws 15; each pair of the jaws 12 having cavities on their inner faces corresponding to the desired contour of the bunch, and cooperating with one of the jaws 15 having a similarly contoured cavity to shape the bunch.

Each of the swingable jaws 12 is equipped with a roller 16 which engages with one of the two cam tracks in a slide 17 mounted in yokes formed in the end-flange 13 of the turret. Each slide 17 in turn has a roller 18 running in the track of a stationary cam 19 which also supports one of the bearings 20 of turret shaft 9. The sliding jaws 15 have rollers 21 supported on pins passing through slots in end-flange 14 of the turret and engage with a track in a stationary cam 22

which carries another bearing 20 for the turret shaft.

As the shaft 9 revolves, the tracks of cams 19 and 22 displace the rollers 18 and 21 radially with respect to the turret. The movement of the rollers 18 cause the slides 17 to move back and forth in the yokes of flange 13, thereby opening and closing the swinging jaws 12 by means of the rollers 16 engaging in the cam track in the slide. The movement of the rollers 21 compels the sliding jaws 15 to move in and out of closing position. The tracks in the cams 19 and 22, and in the slides 17, are so formed that, in the horizontal bunch receiving position of each mold, the upper swinging jaw is in its raised position and the sliding jaw in its innermost position, and that, in its vertical bunch discharging position, both swinging jaws of the mold are open and the sliding jaw is in its uppermost position. The swinging jaws of each mold are closed shortly after the molds leave the bunch receiving station, so that each bunch is pressed into shape for nearly three quarters of one revolution of the turret. While the mold is travelling away from the bunch receiving station, the jaw 15 is gradually moved outward, thereby compressing the bunch between the closed jaws 12 to the desired shape.

The jaw 15 then rests in its extreme outward position while the mold continues travelling toward the bunch discharging station. On reaching said station the shaped bunch B' rests on the jaw 15 and the jaws 12 open to permit the fingers 23 of a transfer to close upon the bunch and to lift it out of the turret by means of an arm 24 turning on a shaft 25 actuated by the machine drive in synchronism with the rotation of the turret. The arm 24 then transfers the bunch B' to the wrapper-applying mechanism of the machine.

What is claimed is:

1. The combination with a rotatable turret, of a plurality of cigar bunch shaping devices carried by said turret and each including a pair of shaping jaws swingably mounted on the turret, and means for opening and closing said shaping jaws, and bunch rolling mechanism arranged to deliver bunches directly to said shaping jaws when open, said means operating to move the leading jaw of each pair of swingable jaws into horizontal position at one station of the turret to receive the bunch thereon from said rolling mechanism, and said devices also including a reciprocable jaw moving between the closed shaping jaws to compress the bunch against the closed shaping jaws.

2. The combination with a rotatable turret, of a plurality of cigar bunch shaping devices carried by said turret and each including a pair of shaping jaws swingably mounted on said turret, and bunch rolling mechanism arranged to deliver bunches directly to said shaping jaws when open, said devices also including a jaw reciprocable outwardly between the closed shaping jaws to compress the bunch against the closed shaping jaws, and means for opening the shaping jaws adjacent the bunch rolling mechanism to admit the bunch and then closing them on the bunch, and thereafter opening them at a position remote from the bunch rolling mechanism to permit the shaped bunch to be removed, said means also operating to move the leading jaw of each pair of swingable jaws into horizontal position at one station of said turret to receive the bunch thereon from said rolling mechanism.

3. In a bunch shaping machine, the combination with a rotatable turret, of a plurality of bunch shaping devices carried by said turret, and each including a pair of shaping jaws swingably mounted on said turret, means for opening and closing said shaping jaws, a reciprocable jaw movable outward between the closed shaping jaws, and mechanism for actuating the reciprocable jaw to compress a cigar bunch between the closed shaping jaws, said means also operating to move the leading jaw of each pair of swingable jaws into horizontal position at one station of said turret to receive the bunch thereon from said rolling mechanism.

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