July 10, 1923.

1,461,150

G. H. JACKSON

TOBACCO LEAF BOOKING MACHINE

Filed March 3, 1921

Fig. 1.

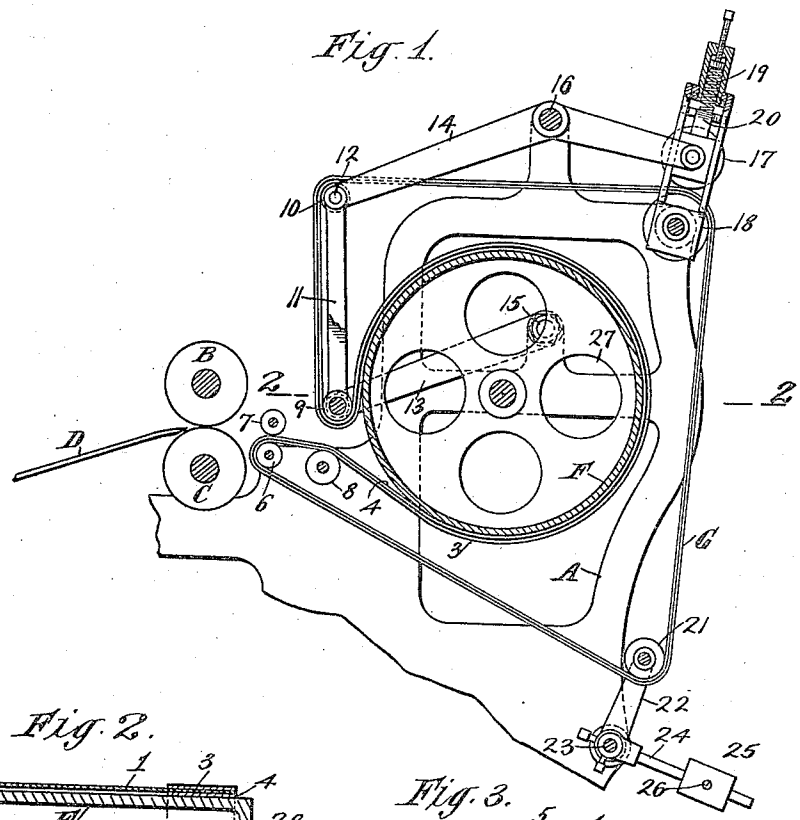


Fig. 2.

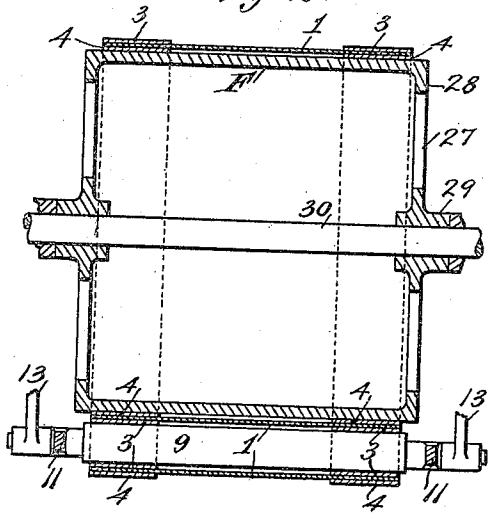


Fig. 3.

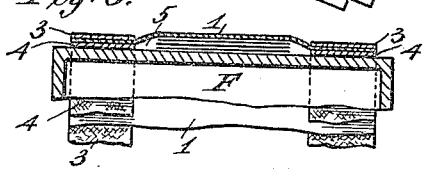
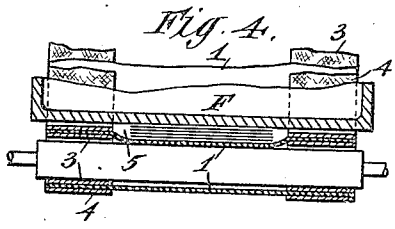


Fig. 4.



INVENTOR

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BY his ATTORNEYS

Phelps Fenwick Rice & Kenny

Patented July 10, 1923. 1,461,150

UNITED STATES PATENT OFFICE.

GRAHAM H. JACKSON, OF NEWARK, NEW JERSEY, ASSIGNOR TO UNIVERSAL TOBACCO MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TOBACCO-LEAF-BOOKING MACHINE.

Application filed March 3, 1921. Serial No. 449,549.

To all whom it may concern:

Be it known that I, GRAHAM H. JACKSON, a citizen of the United States, residing at Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Tobacco-Leaf-Booking Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in tobacco handling machines of that class in which the tobacco leaves have their stems stripped, crushed or otherwise treated, and the treated leaves formed into books.

The invention has for its especial object to provide an improved combination of booking belt and drum in which one of these parts is formed with a resilient or flexible book forming surface which will yield or move away from the other surface as the book increases in size, so that a book will be produced of the desired number of leaves without injury to the leaf and in which the book will be formed so that matting of the leaves is prevented with the result that the leaves of the book may be readily separated by the cigar maker without loss of time and with less liability of injury to the leaves while they are being separated.

A further object of the invention is to produce an improved booking belt of durable construction so that the booking surface of the belt acts to some extent to adjust itself as the book increases in thickness.

With these and other objects not specifically referred to, the invention consists in certain novel parts and combinations, a preferred form of which is shown in the drawings and which will be described in connection therewith, and the novel features then pointed out in the claims hereunto annexed.

In these drawings—

Figure 1 is a side view, partly in section, of so much of a tobacco leaf treating and booking machine as is necessary for an understanding of the invention.

Figure 2 is a sectional plan view, the section being taken on the line 2—2 of Fig. 1.

Figure 3 is a detail sectional view of the upper part of the construction shown in Fig. 2, illustrating the position the belt assumes as the book is formed; and

Figure 4 is a view similar to Fig. 3 of the construction of the lower part of Fig. 2.

Referring now to these drawings, A is one of the side frames of the machine, which may be of any usual or desired construction. B, C, indicate a pair of rolls to which the tobacco leaf is fed over a feed board D. In the particular machine illustrated these rolls act to crush or break the stem so that the stem part is approximately the same thickness as the rest of the leaf. G is the booking belt, and F is the booking drum.

In constructions embodying the invention either the booking belt or the booking drum will be formed so that one of these parts may yield or move away from the other to accommodate the book as it increases in thickness, so as to prevent the leaves of the book from being so compressed or matted together as to make their separation by the cigar maker difficult, with consequent loss of time and liability of injury to the leaf.

While either of these parts may be constructed so as to effect this ready yielding, in the embodiment of the invention here illustrated, an improved belt construction is employed in which the belt is so formed as to have a book receiving surface of such material that it will readily yield as the leaves are added and the book increases in thickness. In the best constructions, furthermore, this belt will be driven independently by a driving means additional to the movement imparted to it by the drum. Consequently in the best constructions the belt will be formed with what may be termed driving edges between which is positioned the elastic yielding book receiving surface of the belt, these driving edges taking the strain necessary for the drive, and relieving the book receiving surface of this tension.

While various constructions of belt may be employed to effect this, a convenient one and one that has worked well in practice, is to form the book receiving part or surface of the belt of rubber, and this part is marked in the drawings 1. This belt is provided in the best constructions, and particularly in constructions where it is driven independently of the drum, with driving surfaces at each side of the book receiving portion. These driving surfaces may be formed as desired, but a convenient way of producing them is to re-enforce the edges of the belt with canvas strips 3, 4, one of these strips being located above and below each edge of

the belt, as illustrated, with the yielding rubber lying between these driving surfaces. With this construction, as the leaves are added and the book increases in size the book receiving portion of the belt 1 will readily yield away from the drum, as shown, and the book is formed in the pocket made by the yielding of the belt and indicated at 5 in Figs. 3, 4. The belt exerts sufficient pressure on the leaves to prevent their slipping, but this pressure is relieved by the yielding nature of the belt so that not enough pressure is exerted to cause the leaves to mat together in such manner as to render them difficult to separate. A book is thus formed in which the leaves can be readily separated by the operator, as desired.

The booking belt and the drum may, of course, be driven in any suitable manner, but as indicated in the best constructions, and particularly in constructions where the belt is formed to provide the yielding book receiving surface, means will be provided for positively driving this belt independently of any driving action which may be given it by the drum, as such independent drive overcomes any tendency of the belt to drag or slip and thus injure the tobacco leaves as they are being formed into the book. The specific construction for effecting this may be varied, but as shown, the belt G passes over a belt roll 6 located closely adjacent the lower crushing roll C, the crushed or treated leaf on leaving the crushing rolls going onto this belt and under guide disks 7 located above the belt roll. After leaving the roll 6 the belt passes over a supporting roll 8, to and around the drum F, and over rolls 9, 10, carried by a pair of swinging arms 11, pivoted at 12 to arms 13 and 14, which are carried on studs 15, 16 mounted in the frame A. This construction allows the belt and the belt-rolls to be swung away from the drum as the book increases in size.

From the rolls 9, 10 the belt passes to a driving mechanism for driving the belt independently of the drum F. This mechanism includes a pair of driving rolls 17, 18, one of these, as roll 18, being positively driven from the drum through a train of gears, not illustrated. These rolls have driving surfaces arranged to co-operate with the driving edges 3 of the belt, and act to drive the belt independently of any driving action it may receive from the drum. Suitable means are employed for adjusting the driving tension of the rolls 17, 18, as an adjustable spring 19, which bears on blocks 20, which in turn bear on the journals of the roll 17 so that by adjusting the screw 19 the roll 17 may be caused to bear on the belt with more or less pressure.

If desired, a belt tensioning device may be provided for taking up slack in the belt due to stretching or for other reasons. This may consist of a roll 21, under which the belt passes, the roll being carried in arms 22, one of which is shown in Fig. 1, fixed on a shaft 23 mounted in the frame A of the machine. This shaft has secured thereto a bar 24 on which is secured a sliding weight 25 which may be adjustable along the bar by means of a set screw 26.

The drum F may be of any desirable construction. As illustrated, it is in the form of a hollow cylinder having openings 27 formed in the ends 28 so as to effect a light construction, and the ends 28 are formed with hubs 29 which form bearings for a shaft 30 by which the drum is driven by any suitable driving mechanism, not illustrated.

With this construction a readily yielding book receiving surface is provided for receiving the book as it increases in size, and the book is formed without such matting of the leaves as will prevent the ready separation by the cigar maker without loss of time or injury to the leaf, and while the invention is shown in its preferred form it will be understood that this resilient yielding book receiving surface may be provided either by the belt or the drum, and the invention broadly considered will include both such constructions.

What I claim is.

1. In a tobacco leaf booking machine, the combination of a booking drum, and a booking belt passing around the drum and having a leaf receiving surface of rubber so that such surface will yield to receive the leaves as the book increases in thickness, and stiffer driving surfaces on each side of the book receiving surface.

2. In a tobacco leaf booking machine, the combination of a booking drum, and a booking belt which passes about the drum, said belt having a leaf receiving surface of rubber, and canvas strips at each side of the book receiving surface by which the belt may be driven, and means for driving the belt independently of the drum.

3. In a tobacco leaf booking machine, the combination of a booking drum, and a booking belt passing around the drum and having a leaf receiving surface which will readily yield to receive the leaves as the book increases in thickness, and edges of a stiffer material on each side of the book receiving surface by which the booking belt may be driven.

In testimony whereof, I have hereunto set my hand.

GRAHAM H. JACKSON.