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C. G. WELLS.

MACHINE FOR STRINGING TOBACCO.

(Application filed June 25, 1902.)

(No Model.)

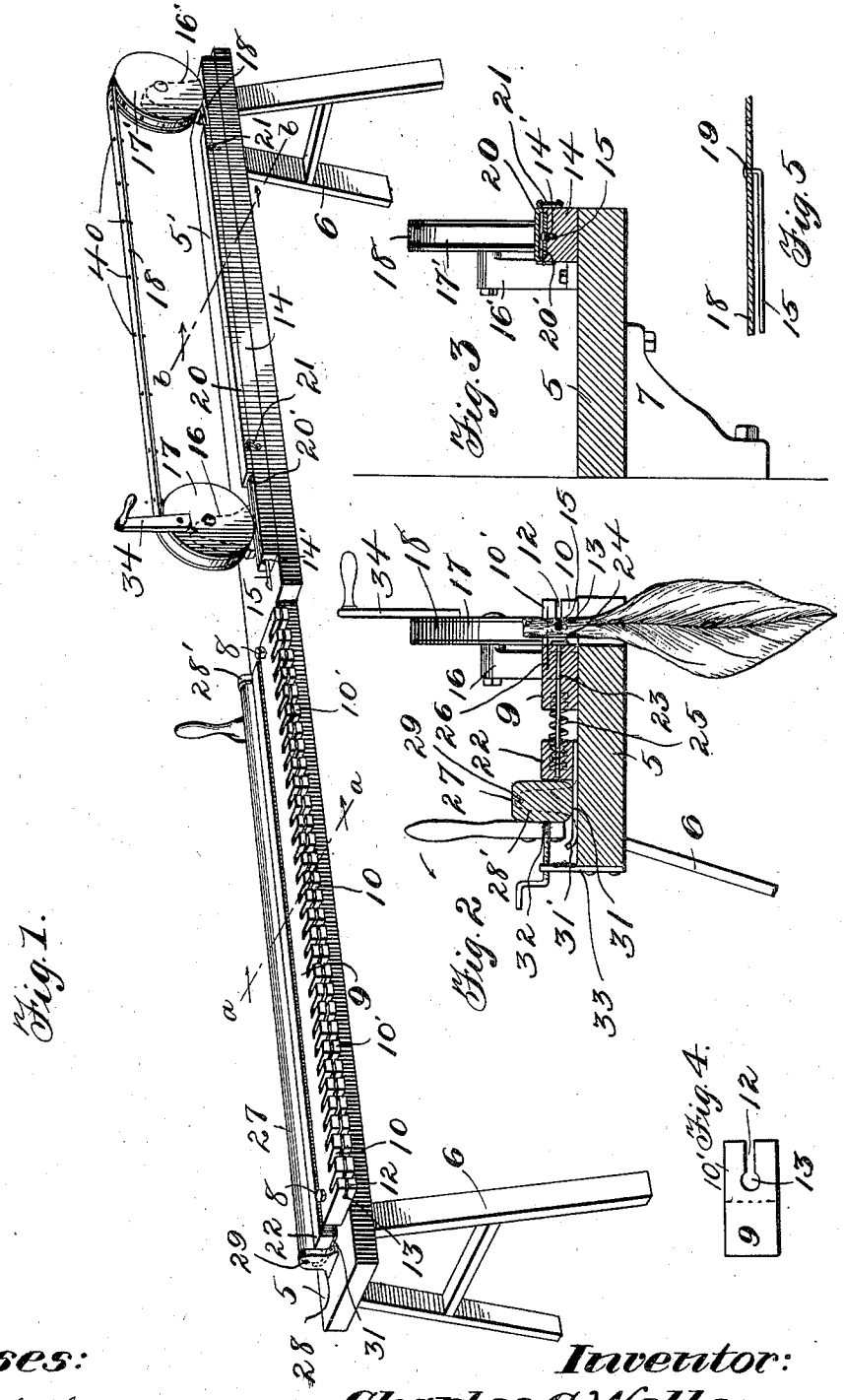


Fig. 1.

Fig. 3.

Fig. 5.

Fig. 2.

Fig. 4.

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By his Attorneys.
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UNITED STATES PATENT OFFICE.

CHARLES G. WELLS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE FIRM OF POULEUR AND WELLS, A COPARTNERSHIP COMPOSED OF CHARLES G. WELLS AND AUGUSTE POULEUR, OF WINDSOR, CONNECTICUT.

MACHINE FOR STRINGING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 708,434, dated September 2, 1902.

Application filed June 25, 1902. Serial No. 113,124. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GILBERT WELLS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Stringing Tobacco, of which the following is a specification.

My invention relates to a machine for stringing tobacco-leaves by inserting a cord or other connector through a series of the stems of said leaves at one operation; and it has for its object the provision of improved means for accomplishing this result.

In my patent dated June 10, 1902, No. 702,267, I have illustrated and described a machine for perforating and inserting a connector in various tobacco articles, and the present invention relates to improvements on such machine, as will be hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of my improved machine for perforating and stringing tobacco. Fig. 2 is a transverse section on line *a a* of Fig. 1. Fig. 3 is a transverse section on line *b b* of Fig. 1, illustrating a modification for supporting the bed-plate of the machine. Fig. 4 is an end view of a recessed block hereinafter described; and Fig. 5 is a section of the belt, showing the needle secured thereto.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates a base or bed plate, which may be supported in any desired manner—for instance, by legs or trestles 6, as shown in Fig. 1, or by brackets 7, secured to a wall, as illustrated in Fig. 3. Secured to this bed-plate by bolts 8 or in any other desired way is a long plate or block 9, provided with transverse kerfs or passages 10, entering one of its edges. This transverse kerfing of the edge of the plate provides it with a series of projections 10′, separated by kerfs or passages throughout its length, and each of these projections is slotted across its face at 12 for a purpose hereinafter stated. These slots 12 terminate in a groove 13 at their rear ends, said groove extending the length of the block and serving as a guideway for a perforating-tool hereinafter described. Fitted upon a wider portion 5′ of the base 5 is a block 14, grooved throughout its length, as at 14′, to form a guideway for the barbed needle 15 or other suitable perforating-tool. Mounted upon standards 16 16′ are pulleys 17 17′, which overhang the guideway 14′ of the block 14 in such a manner that a belt 18, fitted over said pulleys, covers the top of said guideway, and it is by this belt, which is preferably a metallic one, that the needle 15 is reciprocated, said needle being riveted or otherwise secured to the belt, as illustrated at 19 in Fig. 5. If the needle in its forward movement should encounter great resistance, it might be caused to bend or "spring" from its position in the guideway 14′, and to insure against any such possibility a hinged cover 20 is provided for said guideway, said cover being recessed at 20′ to permit the belt 18 to move freely therein. After the belt and needle have been placed in position the cover 20 is closed and locked against accidental displacement by suitable fastenings, such as hooks 21. Mounted for transverse movement upon the bed of the machine in the rear of the block 9 is an ejector-bar 22, carrying a series of ejectors, the stems 23 of which pass through the block 9 into the kerfs 10, where they are headed, as at 24, and to normally hold said ejectors in their retracted position a spring 25, which may be of any suitable kind, is inserted between the bar 22 and block 9, and as many of these springs may be utilized in this manner as are found to be necessary, or said bar may be retracted by weights. A barb or needle-point 26 projects from the block 9 into each of the kerfs 10 above the longitudinal path of the perforating-tool and transversely thereof, serving a purpose which will be hereinafter described. For actuating the ejector-bar a block 27 is pivoted upon standards 28 28′, the pivotal points, as shown at 29, being considerably above the center of the block, and by rocking said block upon said pivotal points by the handle 30 an eccentric movement will be imparted to the block, the lower part of which will be thrown to the right in Fig. 2 when the handle is moved in the direction indicated by the arrow in said figure, thereby

moving the ejector-bar, and consequently the ejectors, to the left in said figure. To limit the forward movement of the ejector-bar, straps 31 are secured thereto and pass under the block 27 and are provided with upturned outer ends 31', which come into contact with said block 27. At times it is found desirable that the ejectors should not be fully retracted, and to enable this to be accomplished an adjustable stop 32 is threaded into an arm 33 at the rear of the base, said stop contacting with the block 27 to limit its rearward movement and through said block the rearward movement of the ejectors.

In utilizing this machine for stringing a series of tobacco-leaves upon a cord or other connector the stems of the leaves are inserted in the kerfs 10, one leaf to each kerf, and are pressed upon the barbs 26, which retain them in position. The operator then rotates the pulley 17 to the right in Fig. 1 through the handle 34, which causes the needle to be carried forward by the belt 18 through the series of stems which have been arranged in its path. At the completion of the forward movement of the needle the cord is connected thereto, and said needle is then retracted by rotating the pulley 17 in the opposite direction, and to prevent slipping of the belt upon the pulleys a series of projections 40 or sprocket-teeth may be carried by the belt, which teeth coact with corresponding recesses formed in the faces of the pulleys.

When tobacco-leaves are subjected to the foregoing operations they are tender, and it is a desideratum that they be given as little rough usage as possible, and to provide for the simultaneous removal of the stems from the kerfs 10 the ejectors hereinbefore described are employed, the forward movement of said ejectors serving to force the stems of the leaves from the points 26 and out of the kerfs, the slots 12 permitting the cord to pass freely out when this is done. The string of leaves is then secured to a lath in the usual manner.

From the foregoing description it will be seen that I have provided a simple and efficient device for stringing tobacco-leaves with a minimum of handling, and by having the leaves hang vertically during the stringing operation the leaf proper is not subjected to contact with any part of the machine, which would tend to bruise it.

My invention is not limited to the precise details of construction herein described, but includes within its purview such suitable modifications or rearrangements thereof as may be useful or desirable.

One of the salient features of my improved machine is the provision of means broadly for sustaining the leaves by their stems in a vertical or substantially vertical position, so that the frangible and tender blade portions of said leaves will not be brought into contact with anything which would tend to bruise or fracture them, and while a series of points coöperating with a kerfed or recessed block is preferably employed for this purpose, yet it is distinctly to be understood that my invention is not limited in this respect, nor is it limited to the means shown for reciprocating the needle or other perforating-tool, nor to the exact construction of the ejector or the mechanism for operating the same.

Having thus described my invention, what I claim is—

1. The combination, with a bed having devices for hanging leaves by their stems, of a movable punch or needle constructed to retain a cord and to insert such cord in the stems.

2. The combination, with a bed having a series of kerfs, of a stem-retaining device in each of said kerfs, a perforating instrument adapted to receive and carry a cord; and means for actuating said perforating instrument.

3. The combination, with a grooved block having transverse recesses, of points projecting into said recesses, and upon which the stems of the leaves are impaled; and a tool working in the groove of the block and constructed to carry a cord through the stems.

4. The combination, with a bed having a series of recesses and a groove intersecting each of said recesses, of stem-retaining devices in said recesses; and a punch or needle adapted to receive and carry a cord through the stems.

5. The combination, with a bed having a series of recesses, of stem-retaining devices in said recesses; a series of ejectors; a movable punch or needle adapted to carry a cord through the stems; means for actuating said punch; and means for actuating the ejectors.

6. The combination, with a bed-plate having a series of projections, slotted on their ends, of stem-retaining devices between said projections; ejectors; a movable punch or needle adapted to receive and carry a cord; means for actuating said punch; and means for actuating said ejectors.

7. The combination, with a bed-plate, of a block having a series of transverse passages; an impaling-point in each of said transverse passages; a series of ejectors, one in each of the passages; a movable punch or needle adapted to carry a cord; means for actuating the punch; and means for actuating said ejectors.

8. The combination, with a bed, of a block having a series of transverse kerfs and a longitudinal bore intersecting said kerfs; a belt carrying a punch or needle movable in said bore; and means for actuating said belt.

9. The combination, with a bed having transverse passages, of a block having a longitudinal guideway; a punch or needle movable in said guideway; a belt to which said punch is secured; and a movable cover for said block inclosing the belt and punch.

10. In a tobacco-stringing machine, the combination, with a movable cord-carrying

tool, of means for hanging tobacco-leaves by their stems in the path of said tool.

11. The combination, with a bed having retaining devices for tobacco-leaves, of a movable perforating and cord-carrying tool; a belt to which said tool is secured; and means for actuating the belt.

12. In a tobacco-stringing machine, the combination, with a plate having transverse passages separated by slotted projections, and also having a guideway, of means upon which the stems of tobacco-leaves may be impaled; a punch or needle constructed to carry a cord; means for actuating said punch or needle; and devices for ejecting the strung leaves.

13. The combination, with a plate having transverse passages and slotted projections between said passages, of impaling-points, one located in each passage, upon which tobacco-leaves may be hung by their stems; a series of ejectors; and an eccentrically-pivoted block for actuating said ejectors.

14. In a tobacco-stringing machine, the combination, with a guide-block, of a punch or needle reciprocative in said guide-block; a belt to which said punch or needle is secured, said belt being movable in a groove of the guide-block; and pulleys having a sprocket connection with said belt.

15. In a tobacco-stringing machine, the combination, with a guide-block having a longitudinal groove, of a belt movable on said block; pulleys over which the belt passes; means for actuating one of said pulleys; a cover-plate upon the block; a punch or needle, the shank of which is secured to the run of the belt passing over the block, said punch or needle being adapted to carry a cord; and means for retaining tobacco-leaves in position to have their stems perforated by said punch and strung upon the cord.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES G. WELLS.

Witnesses:
FRANK G. CAMPBELL,
FRANCES E. BLODGETT.