M. RASMUSSEN.

EYELETING MACHINE.

APPLICATION FILED NOV. 7, 1919.

1,373,671.

Patented Apr. 5, 1921.

2 SHEETS—SHEET 1.

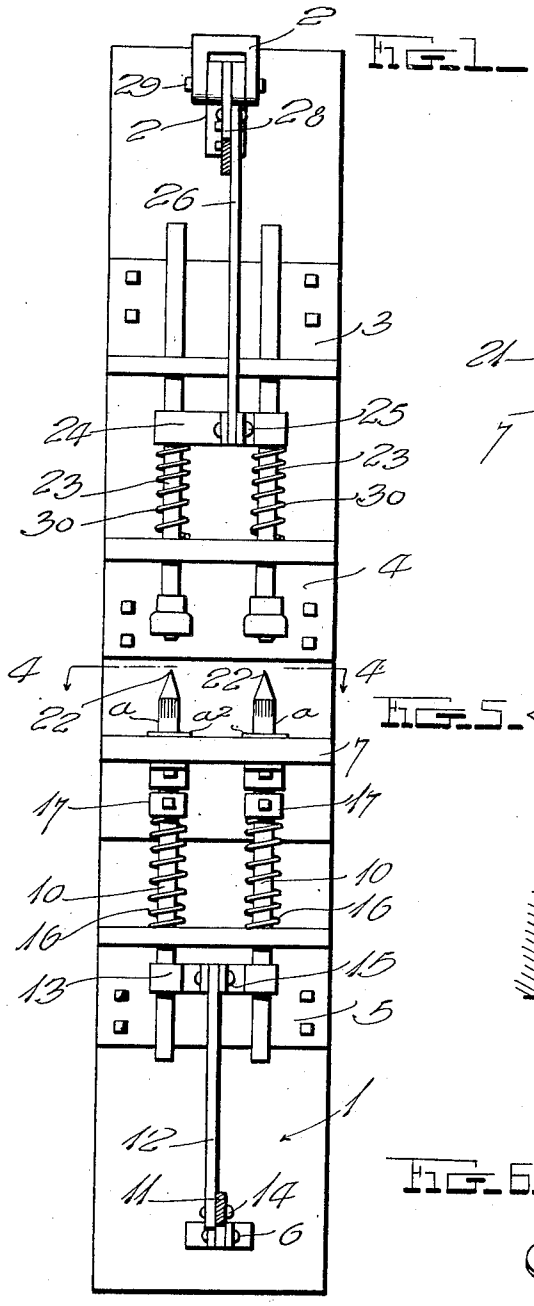
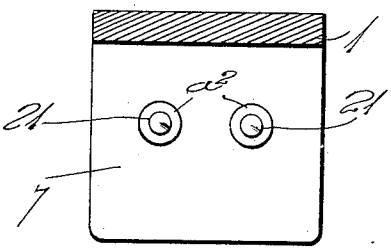


FIG. 1

FIG. 4



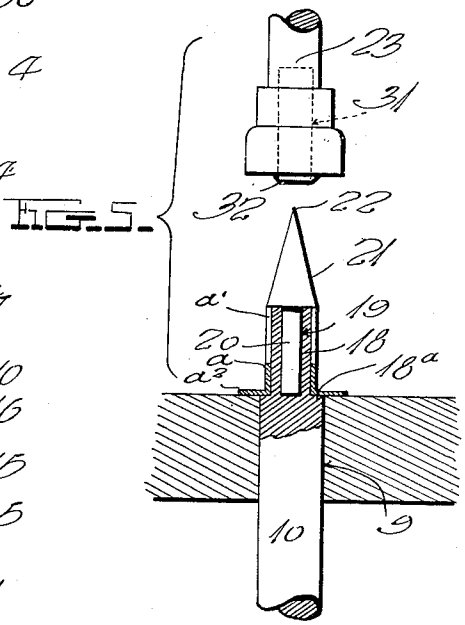


FIG. 5

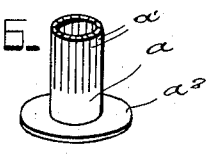


FIG. 6

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2 SHEETS—SHEET 2.

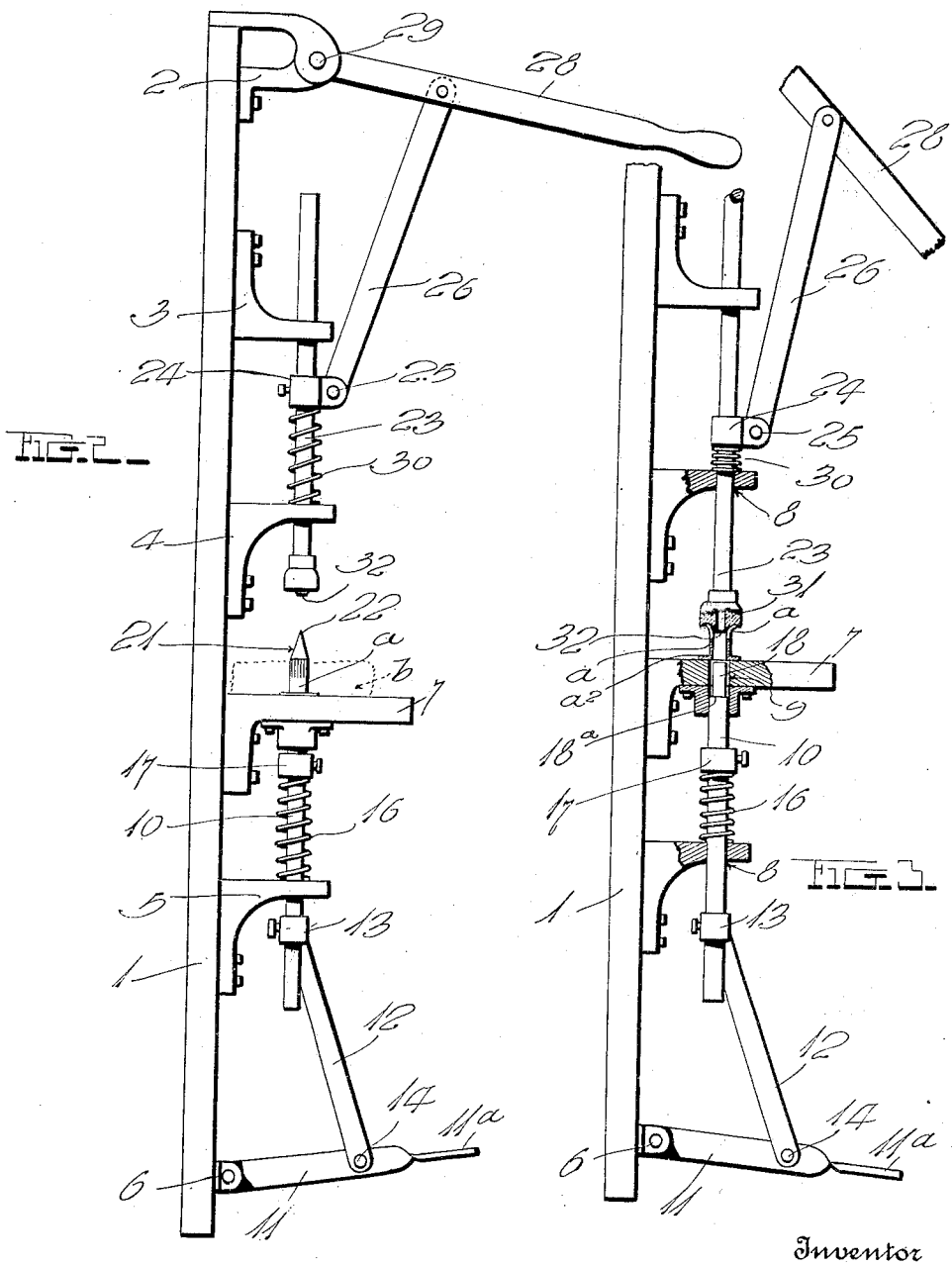


FIG. 2

FIG. 3

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EYELETING-MACHINE.

1,373,671. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed November 7, 1919. Serial No. 336,245.

To all whom it may concern:

Be it known that I, MARTIN RASMUSSEN, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Eyeleting-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to eyeleting machines.

One object of the invention is to provide an improved machine for inserting eyelets in the brush heads of brooms and clenching said eyelets, in the process of manufacturing a novel and improved form of broom.

A further object is to provide an improved means whereby the broom straws may be quickly and easily separated to provide an opening for receiving an eyelet, without injuring the broom straws.

A further object is to provide an improved simple and efficient means to retract the mandrel from the eyelet after the eyelet has been clenched.

Other objects and advantages may become apparent to persons who read the following details of description in connection with the accompanying drawings in which;—

Figure 1 is a front elevation of an eyeleting machine, the hand lever and foot lever only being shown in section.

Fig. 2 is a left side elevation of the machine.

Fig. 3 is a view partly in left side elevation and partly in vertical section, the top part of the device being broken away.

Fig. 4 is a horizontal sectional view, the section being taken along the line 4—4 of Fig. 1.

Fig. 5 is an enlarged detail view partly in vertical section, illustrating the upper end of the mandrel which holds the unclenched eyelet, a conical leading member engaged with the mandrel, the lower end of the plunger which clenches the eyelet, and the portion of the anvil or table on which the eyelet is clenched.

Fig. 6 is a perspective view illustrating one of the unclenched eyelets upon which this machine operates.

Referring to these drawings in detail in which similar reference characters correspond with similar parts throughout the several views,—

An upright or standard 1 is provided with bearing-brackets 2, 3, 4, 5 and 6. A table or anvil 7 is also secured to the upright 1, and any appropriate means may be employed for securing this anvil and the said brackets to the upright 1. The bearing brackets are provided with vertically alined apertures or bearings, such as indicated at 8, and the anvil 7 is provided with apertures 9 each of which is in vertical alinement with corresponding apertures 8 of the brackets. Mandrels 10 are seated for longitudinal movement in the bearing 5, and a lever 11 is pivoted to the bearing-bracket 6, and is pivotally connected to the mandrels 10 through the medium of a link 12 and a pair of connecting members 13, the latter being formed with apertures through which the mandrels 10 extend, and set screws or other appropriate means may be employed for securing the connecting members 13 in any adjusted position on the mandrels. The link 12 is pivotally connected at 14 to the lever 11, and the upper end of the link 12 is pivotally connected at 15 to the inwardly extending ends of the members 13. It will be seen, therefore, that the mandrels 10 are connected in unison by means of the members 12, 13 and 15 so that when a pedal 11^a of the lever 11 is depressed, the mandrels 10 are simultaneously moved downward. Springs 16 are seated against the bracket 5 and against collars 17 which are secured on the upper end portions of the mandrels. Each of the mandrels is formed with a reduced upper end portion 18, and an annular shoulder 18^a is disposed at the junction of the main portion and reduced portion 18. The reduced portion is preferably cylindrical and of a diameter to have the unclenched eyelets a closely fitted thereon, as indicated in Fig. 5, the base flange a^2 of the eyelet a being adapted to rest on the shoulder 18^a and on the anvil 7. The reduced portion 18 of the mandrel is provided with an axial bore 19 which receives a shank 20 of a leading member 21, this leading member being formed with a conical portion which terminates in a piercing point or end 22. The base of each leading member (that is of its conical portion) rests on either upper end of the mandrel 10 and extends horizontally downward over the upper or leading end of

the unclenched eyelet so as to guard the upper end of the latter against engagement with broom straws when the eyelet is being inserted in a mass of straws during the process of manufacturing a broom.

A pair of plungers 23 is connected in unison by means of connecting members 24, a pivot 25 and a link 26, in the same manner in which the mandrels 10 are connected in unison through the medium of the members 12, 13 and 15. Each connecting member 24 is clamped to the corresponding plunger by means of a set-screw, as indicated, and can be adjusted up or down on its plunger, the set screws serving to hold these members 24 in different adjustments. The link 26 is pivotally connected to the hand-lever 28, the latter being pivotally connected at 29 to the bracket 2. These plungers 23 are mounted to be moved vertically through the bearing-brackets 3 and 4 by means of the hand-lever 28. Springs may be provided at 30 for pressing the plungers 23 upward and holding them in their normal position. These springs may either raise the lever 28 to its uppermost position or merely assist this lever in raising the plungers 23.

The lower end of each plunger 23 is tubular or formed with an axial bore 31 which receives the upper end portion of the leading member 21. The lower end of the member 23 is frusto-conical or downwardly tapering as indicated at 32, and the frusto-conical end portion 32 has a minimum diameter which is somewhat less than the internal diameter of the unclenched eyelets, the maximum diameter of the clenching portion 32 being substantially equal to or greater than the outer diameter of the clenching portion of the eyelets.

The operation of this device in making brooms is as follows:—A flat pack or mass of broom straws sufficient for making a broom is passed between the lower end of the plungers and the upper ends of the leading members 21 and then passed outward over the leading members and over the unclenched eyelets, the eyelets and leading members having first been attached to the mandrels 10 as illustrated in Fig. 5, and now, the plungers 23 are lowered so as to assist gravity and manual pressure in causing the leading members to pass through the mass of broom straws. After the point 22 has passed through the mass of broom straws, this mass may easily be seated on the table or anvil 7 as indicated at *b* in Figs. 2 and 3. Having thus seated the mass of broom straws so that the eyelets *a* extend therethrough, as shown in Fig. 2, the leading members 21 are removed by withdrawing their shanks 20 from the bores or sockets 19, and now the hand lever 28 is swung downwardly so as to bring the clenching surfaces 32 of the plungers 23 into contact with the inner surfaces of the eyelets *a*. Each of these eyelets is preferably formed with an annular series of tongues *a'* and these tongues are pressed outward and downward as the plungers 23 descend. During this clenching operation, the mandrels 10 are depressed while the flange a^2 of each eyelet rests upon the anvil 7 and coacts with one of the plungers in the clenching operation. When the clenching is completed, the plungers 23 are raised, and the mandrels 10 are withdrawn from the eyelets by means of the foot-lever 11, and now the springs 16 may be permitted to raise the mandrels into the position for receiving other unclenched eyelets. When the eyelets have been placed on the reduced portions 18 of the mandrel, the leading members 21 may be engaged with the mandrels as illustrated in Fig. 5.

It will be seen that the structure herein shown and described is simple, comparatively cheap and yet very effective and efficient in operation.

It is not intended to limit this invention to the foregoing details of construction and arrangement, but changes may be made within the scope of the inventive ideas as implied and claimed.

What I claim as my invention is:

1. In an eyeleting device, a mandrel having an axial bore and being insertible through an unclenched eyelet, and a sharp-ended leading member having a shank to fit in the bore of said mandrel, said leading member having a base to extend outward over the entering end of the unclenched eyelet to guard the said entering end against engagement with material in which the eyelet is being inserted.

2. In an eyeleting device, a mandrel having an axial bore and being insertible through an unclenched eyelet, a sharp-ended leading member having a shank to fit in the bore of said mandrel, said leading member having a base to extend outward over the entering end of the unclenched eyelet to guard the said entering end against engagement with material in which the eyelet is being inserted, an anvil on which the eyelet rests while engaged with said mandrel, and means correlated with said anvil and leading member to insert said eyelet in an object.

3. In an eyeleting device, a mandrel having an axial bore and being insertible through an unclenched eyelet, a sharp-ended leading member having a shank to fit in the bore of said mandrel, said leading member having a base to extend outward over the entering end of the unclenched eyelet to guard the said entering end against engagement with material in which the eyelet is being inserted, a table having an aperture therethrough and constituting an anvil and a support for the object to be eyeleted, yielding means to hold said mandrel in such po-

sition that its bored end extends through said aperture and beyond the upper surface of said table, a plunger having a hollow end to receive the sharp end of said leading member, said plunger being formed to clench said eyelet when operated, means to operate the plunger, and means to retract the mandrel from the eyelet.

4. In an eyeleting device, a mandrel having an axial bore and being insertible through an unclenched eyelet, a sharp-ended leading member having a shank to fit in the bore of said mandrel, said leading member having a base to extend outward over the entering end of the unclenched eyelet to guard the said entering end against engagement with material in which the eyelet is being inserted, a table having an aperture therethrough and constituting an anvil and a support for the object to be eyeleted, yielding means to hold said mandrel in such position that its bored end extends through said aperture and beyond the upper surface of said table, a plunger having a hollow end to receive the sharp end of said leading member, said plunger being formed to clench said eyelet when operated, a link pivotally connected to said plunger, means including a hand-lever correlated with said link for reciprocating the plunger, and means including a pedal for retracting said mandrel from the eyelet.

In testimony whereof I have hereunto set my hand.

MARTIN RASMUSSEN.