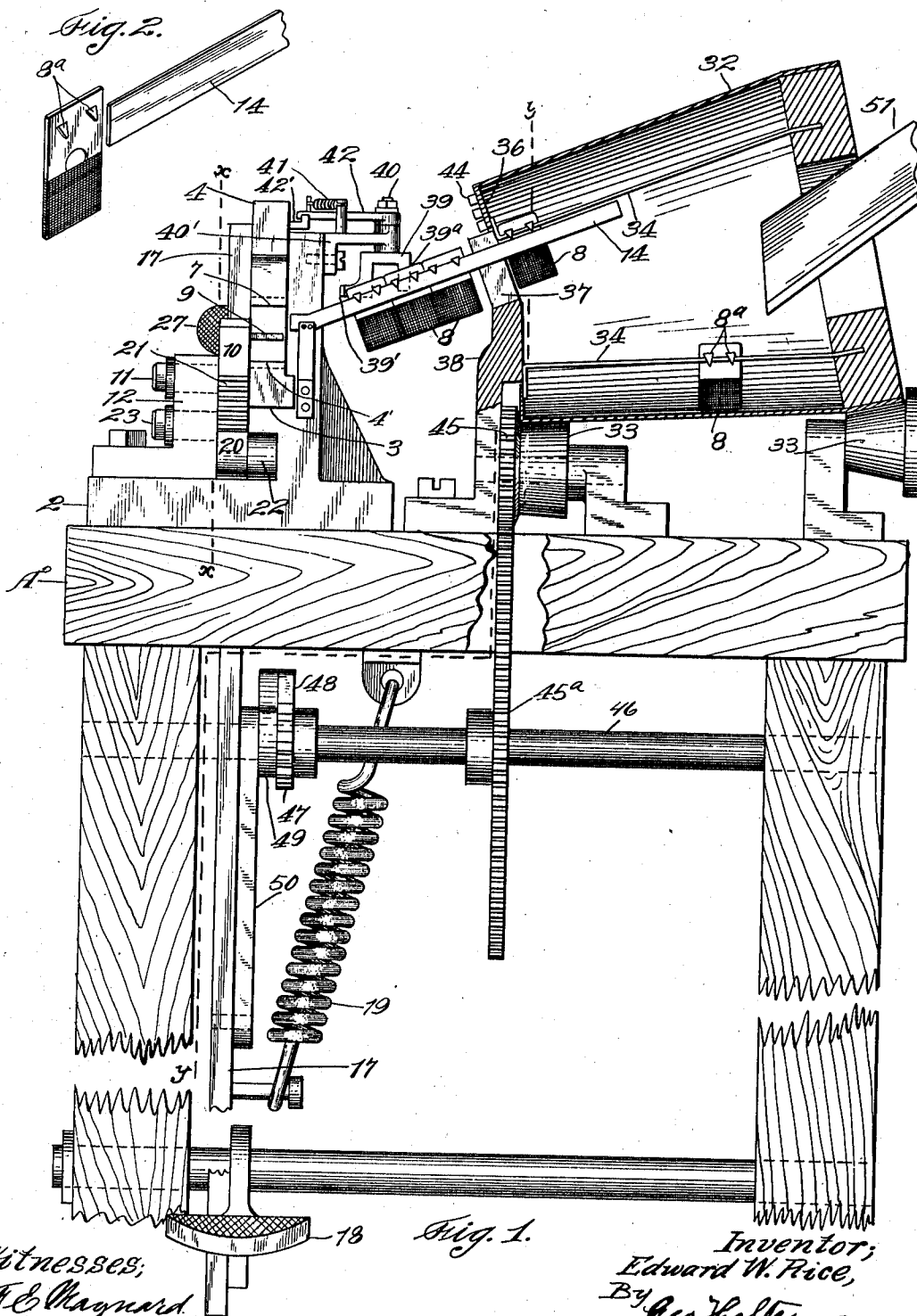


E. W. RICE.
LAUNDRY TAGGING MACHINE.
APPLICATION FILED AUG. 24, 1909.

970,952.

Patented Sept. 20, 1910.

3 SHEETS—SHEET 1.



Witnesses;
J. E. Maynard
Oakland

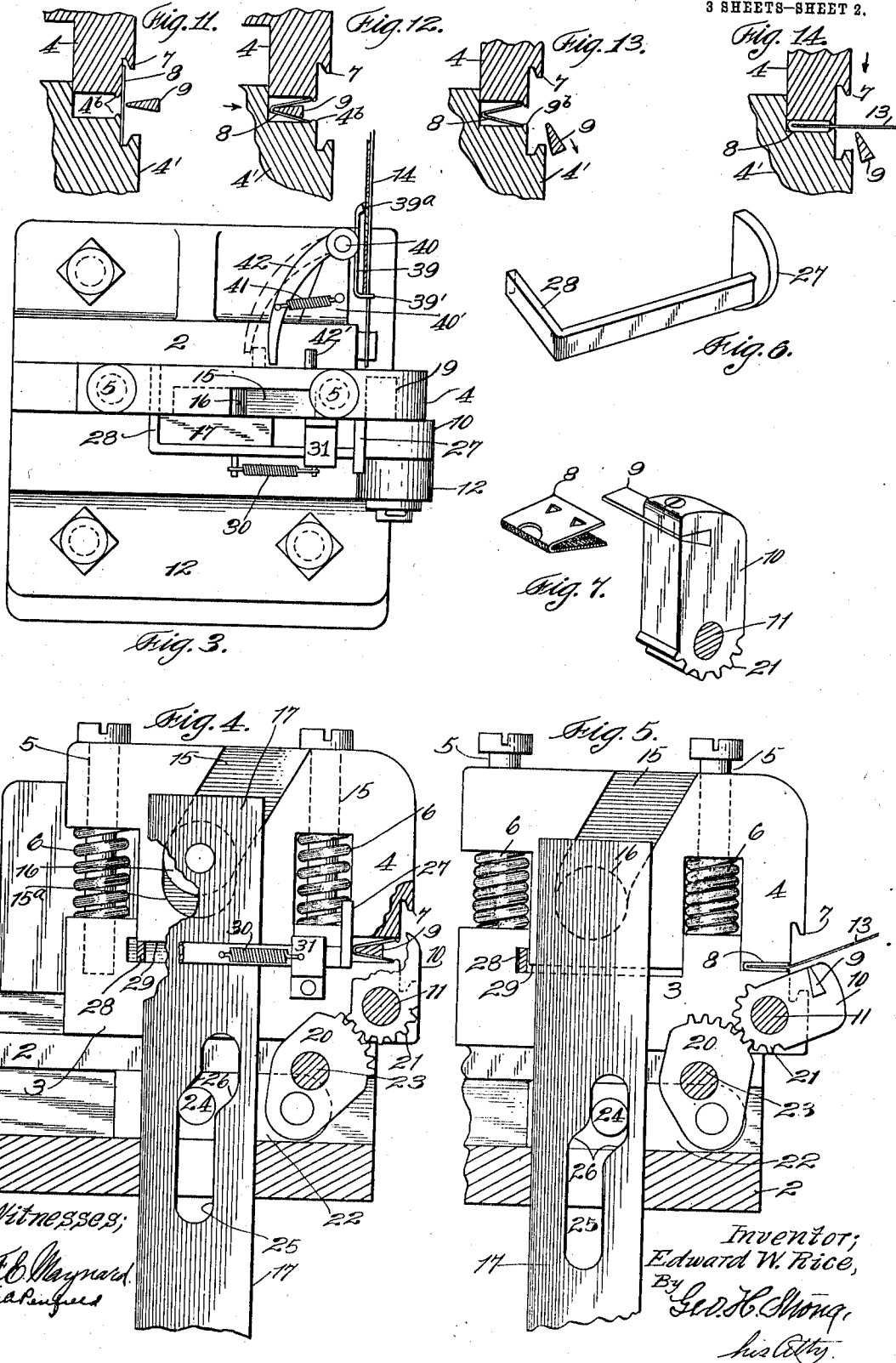
Inventor;
Edward W. Rice,
By *Charles Strong*
his Atty.

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3 SHEETS—SHEET 2.



Witnesses;
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W. B. Rufford

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By Geo. H. Strong,
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3 SHEETS—SHEET 3.

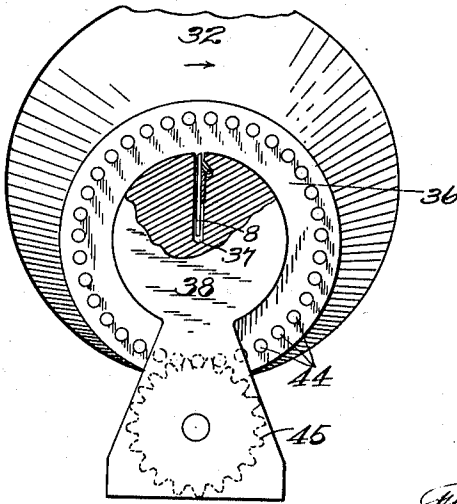


Fig. 9.

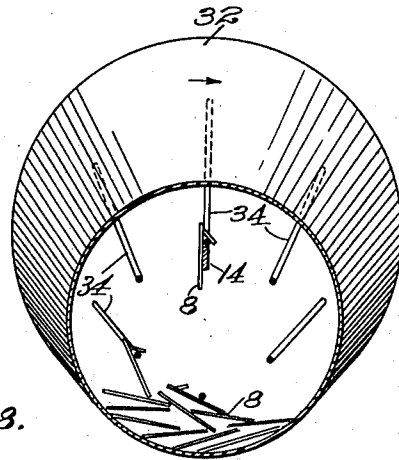


Fig. 8.

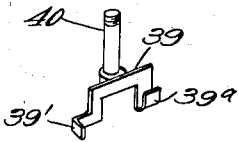


Fig. 15.

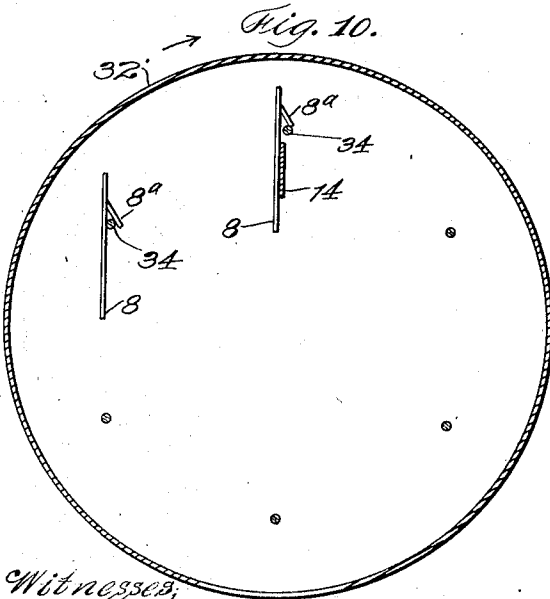
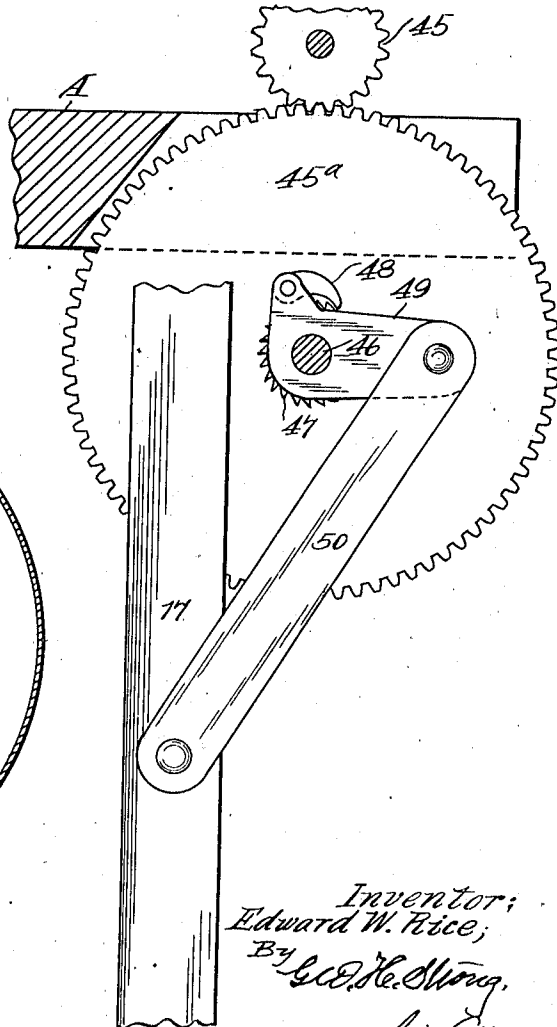


Fig. 10.



Witnesses,

F. E. Maynard.
Attest

Inventor;
Edward W. Rice;
By Geo. H. Strong,
his Atty.

UNITED STATES PATENT OFFICE.

EDWARD WELLS RICE, OF SAN FRANCISCO, CALIFORNIA.

LAUNDRY-TAGGING MACHINE.

970,952.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed August 24, 1909. Serial No. 514,409.

To all whom it may concern:

Be it known that I, EDWARD WELLS RICE, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Laundry-Tagging Machines, of which the following is a specification.

This invention relates to tagging machines, and pertains especially to laundry tagging apparatus.

The object of the invention is to provide a device for mechanically applying marking or identification or name tags to laundry and other goods.

It is a common practice in the laundry business to mark certain pieces of laundry by applying a small metallic plate, partially covered with a fabric which has inscribed upon it a characteristic mark or number by which the laundry is properly identified. These tags are now applied in the various laundries by hand labor, which is slow, unsatisfactory and expensive, and it is to obviate these disadvantages that I provide this machine.

The invention consists of the parts, and the construction and combination of parts, or their equivalents, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the machine, the tag tumbler being in section. Fig. 2 is a perspective of a tag leaving the rail. Fig. 3 is a plan of the folding apparatus. Fig. 4 is a section on line $x-x$ Fig. 1. Fig. 5 shows the jaws in the closed position. Fig. 6 is a perspective of the locking bolt. Fig. 7 is a perspective of a folded tag and the abutment. Fig. 8 is a section on line $y-y$ Fig. 1. Fig. 9 is a front elevation of the escape plate, partly in section. Fig. 10 is a cross section of the tumbler. Figs. 11 to 14 inclusive show diagrammatically several positions of the bending jaws. Fig. 15 is a perspective view of the rocker-bar.

In the present embodiment of my invention I have shown mounted upon an appropriate bench or table A, a stationary casting or frame 2, upon which is suitably mounted a horizontally reciprocating carriage 3.

4 is a clamping jaw vertically slidable upon screw-posts 5 secured in the carriage

3, and adapted to coact with the jaw member 4', which forms a part of the carriage 3. Surrounding each post 5 is a spiral spring 6, the function of which is to maintain the jaw 4 normally in an open position relative to the jaws 4' on carriage 3. The forward or front faces of the jaws 4—4' are each recessed and undercut so as to form lips 7, which are for the purpose of retaining a tag blank 8 in a vertical endwise position on the carriage 3 as the tag is carried forward to the preliminary bender 9 after being delivered to the carriage. The bending member 9 is secured in a rocker arm 10, Figs. 4, 5 and 7, having a short shaft 11 journaled in a removable bracket 12 of the frame 2. These marking tags are of ordinary construction and simply consist when delivered to the machine of a piece of tin covered at one end with cloth, and punched out at the other end with clamping tangs or prongs 8^a.

The tags 8 (which are shown in Fig. 2 before bending and are adapted to be folded and clamped upon the laundry as indicated in Fig. 5) are delivered to the carriage 3, and between the lips 7 by suitable means as follows: When the jaws 4—4' are in normal, rearmost, open position the lips 7 are distended and stand approximately in line with a stationary inclined rail 14 down which the tags, hanging by their prongs 8^a, slide, one at a time, by gravity. As a tag 8 jumps the end of the rail (Fig. 1) it enters the mouth formed by the open lips 7. The means for automatically feeding these tags on to the bar 14 will be described later.

The vertically slidable jaw 4 has formed in one side an angular cam slot 15 in which travels a roller 16 secured to an operating bar 17; the latter being shown as actuated by means of a foot pedal 18, which is sustained in its upper idle position by a tension spring 19. As the pedal 18 is depressed, pulling down the bar 17, the carriage 3 and its superposed jaw 4 are caused by means of the roller 16 to advance across the end of the bar 14 and to bring the tag 8 up against the wedge-shaped bending arm 9 over which it is folded and forced back into the open space between the jaws 4—4', Fig. 4.

The angular slot 15 is sufficiently long to fold the tag over the wedge arm 9, and the roller 16 passes from it into a straight, ver-

tical continuation 15^a, during the traverse of which by the roller 16, the arm 9 is rocked back out of the way of the folding jaws 4—4'. This retrograde movement of the bender 9 is accomplished by means of a gear segment 20 suitably mounted on shaft 23 journaled in the main frame.

Segment 20 meshes the gear-teeth 21 on arm 10, and is operated synchronously with the operation of the jaws 4—4' by means of a link 22 connected through stud 24 with a cam slot 25 in bar 17; link 22 working horizontally in a suitable slideway formed in the frame. The bent tag is prevented from following the wedge 9 out of the jaws by suitable means as the little ledges 4^b on the jaws behind which the edges of the bent tag engage. The stud 24 projects into the slot 25, made in the bar 17, the inclined walls 26 of which when pulled downwardly encounter the stud 24 and force the link 22 forwardly oscillating the gear 20, which in turn throws the wedge-carrying arm 10 down out of the way. During the time occupied in moving the wedge 9, the roller 16 descends in the slot 15^a to its end, and at this instant the operator inserts the fabric 13, Fig. 5, to be tagged into the partially folded tag 8, and in doing so pushes a finger-plate 27, Fig. 6, backward sufficiently to move a locking-bolt 28 from under the lower edge 29 of the jaw 4, which will then permit the operator to continue the downward stroke of the bar 17, and thus firmly close the jaw 4 down upon the tag 8, as clearly shown in Fig. 5. The tagging now having been completed, the operator allows spring 19 to lift the bar 17, and the springs 6 simultaneously raise the jaw 4, thus releasing the fabric 13 which is withdrawn just before the cam-walls 26, in the bar 17, effect the return upward of the wedge 9. Further upward movement of the bar 17 carries the roller 16 into engagement with the inclined walls of the slot 15, thus retracting the carrier 3 and jaws 4—4' into position to receive a new tag 8 from the rail 14.

The locking bolt 28 will be automatically snapped forward under edge 29 just as soon as the jaw 4 has been raised sufficiently, by means of a tension spring 30, one end of which is connected to the bolt 28, and the other to a bearing 31 through which the bolt slides. It will thus be seen that the operator can not press down the pedal 18 in one continuous, uninterrupted stroke; but he can control the clamping operation of the tag until the fabric is inserted. Unless he presses against the lock plate 27 to unlock the jaw 4, the latter can not descend upon the partly folded tag. Further it will be noticeable that no part of the machine requires the separate or deliberate attention of the operator who has simply to depress the pedal 18 and insert the fabric to be

tagged into the machine, incidentally pressing back the lock-plate 27.

The blank unfolded tags are delivered and placed on the feed bar 14 by the following means: In order to make the machine entirely self-contained and automatically self-feeding, the inclined tag rail 14 is secured at its lower end to the frame 2 and its upper end projects into a tag-containing barrel or revolving hopper 32, which is preferably in the form of a truncated cone, and mounted upon suitable supporting rollers 33, so that the lower portion of the hopper may be horizontal, or nearly so, while its upper portion is inclined at an angle approximately parallel with bar 14. Fastened within the hopper 32 is a series of small round elevator rods or wires 34, about the diameter of a hat-pin, extending from end to end of and suitably spaced from, the walls of the hopper. As here shown, the wires 34 are arranged to pass over the bar 14 as the hopper revolves in the direction of the arrow so that the bar 14 will act to push the tags which hang by their prongs 8^a, from the wires and allow them to drop and catch on the bar 14. As the hopper is revolved the prongs 8^a of the tags become hooked to the rods 34 in passing through the jumbled mass of tags, and are carried upward by the wires. As the wires 34 rise from a lower horizontal position to an upper, inclined one (Fig. 1), the tags slide freely down to the end of a wire against the flanged head 36 of the hopper, and are deposited successively, upon the stationary rail 14, on which they pass through a suitably shaped slot 37 in the stationary hopper head 38 which closes the lower end of the hopper.

The hopper revolves intermittently, and each time the pedal 18 is operated. The hopper is turned by the following means: As here shown the head 36 of the hopper is provided with an annular series of teeth or projecting pins 44 which are adapted to be engaged successively by the teeth of a gear-wheel 45 which engages gear 45^a fixed to a shaft 46, which latter is suitably journaled in the frame. Shaft 46 carries a ratchet-wheel 47 (Fig. 8) which is engaged by a pawl 48 carried by a lever 49, the outer end of which lever is connected by a link 50 to the pedal-operated bar 17. Each downward stroke of bar 17 imparts motion to the gear shaft 46 and pinion 45 to rotate the hopper intermittently. On the up stroke of the pedal bar 17, pawl 48 runs back idly over the ratchet without actuating the hopper. In the travel of the wires 34 through the mass of tags in the bottom of the hopper, some of these tags will catch, by means of their prongs 8^a, on the wires, and be carried upward. However only those tags which have their prongs facing toward bar 14, as shown in Fig. 1, will be swept off the wires

when the tags are brought against the bar, and thence falling on to the bar; these prongs 8^a standing out nearly at right angles to the plane of the surface, and being easily dislodged from a wire. Sufficient space is left between the annular flange 36 on the hopper and the stationary hopper head plate 38 so that the tags which are deposited on the feed bar 14 will not be swept off by the succeeding wires 34, but can pass readily out of the end of the hopper.

In order to stay the downward movement of the tags during the clamping operation, and insure the feed of only one tag at a time to the jaws 4—4', a suitable tag feed governing device is employed as follows: 39 (Figs. 1, 3, 15) is a rocker-bar carried by a rock-shaft 40 journaled in a fixed bracket 40'. Bar 39 has a hook member 39' at one end, and a spring arm 39^a at the other; the hook member 39' being adapted normally to be interposed in the path of the lowermost tag 8 hanging on bar 14, and the spring member 39^a being adapted, when the bar 39 is rocked, to press against the second tag from the bottom, and hold this tag against the bar frictionally, and support the descending column of tags, leaving the lowermost tag free to slide into the pocket 7 in the jaws. A spring 41 acts on an arm 42 secured to shaft 40 to press the hook 39' normally into the path of the column of tags. Arm 42 is intercepted at each return backward movement of carriage 3 by a lug 42' on the carriage, Figs. 3 and 1, to rock the bar 39, release hook 39', and allow a tag to slide into position into the open pocket 7 just as the carriage jaws come back to initial rest position.

In operation a suitable quantity of tags is fed into the hopper through the chute 51. When it is desired to tag a piece of material, the operator presses on pedal 18 thereby pulling down bar 17. In this initial downward movement of the bar 17, the roller 16 on the bar travels down in the inclined portion of the slot 15 in the jaw 4 to force the carriage forward horizontally, and at right angles to bar 17; the spring 6 being at sufficient tension in this downward movement of the roller 16 to maintain the jaws 4—4' open. In this horizontal traverse of the carriage the upstanding tag 8, which has been deposited previously in the pocket 7, is carried against the upstanding bending wedge 9, and is folded into the position represented in Fig. 4. The bar 17 still continues its downward movement, corresponding to the inclined portion 26 of slot 25, and the straight portion 15^a of slot 15, and it is during this portion of the movement that the roller 24 acts through its connections with the segment 20 to turn the arm 10, and carry the wedge 9 backward and out of the way of the jaws; the jaws however remaining open by reason of the interposition of the

stop 28 in the position of Fig. 5; but the arm 10 and wedge 9 being brought back so that they are really in the position represented in Fig. 5. The bent tag is kept in the open jaws by means of the little stop ledges 4^b on the jaws 4—4'. The operator then inserts the fabric 13 into the open space between the upper and lower portions of the bent tag, and then pushes in on the thumb-piece 27 (Fig. 3) to move the stop bar 28 out of the path of the guide portion of jaw 4 so that the jaws by further continued movement downward of bar 17, can close as shown in Fig. 5. During all of this downward movement of bar 17, the pawl and ratchet 48—47 are acting to revolve the hopper. As soon as the piece is tagged, the operator releases the pressure on the pedal 18, whereupon spring 19 causes a retraction upward of bar 17, and its corresponding backward reciprocation of the carriage, and its opening of the jaws. As the carriage approaches its limit of rearward movement, lug 42' on the carriage encounters arm 42, and pushes it back into dotted line position Fig. 3 so as to lock the bar 39, release the bottommost tag and engage the next tag frictionally by spring 39^a, thereby allowing this released tag to slide down the bar 14 and into position in the pocket 7 of the jaws; the machine then being ready for the next operation.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a tagging machine, the combination of a pair of jaws movable toward and from each other, means for maintaining them normally open, means for supporting a tag to be bent in front of the open jaws, means for forcing the tag into the jaws and simultaneously bending it, and means for subsequently operating the jaws to close the tag, said last-named means being connected to and operating the tag bending means.

2. In a tagging machine, the combination of a tag blank holder, means for giving the tag blank a preliminary fold, and means for subsequently closing it on the material to be tagged, said closing means being connected to and operating the tag folding means.

3. In a tagging machine, the combination of a pair of bending jaws, means for supporting a blank tag in the jaws, means for imparting to the tag blank a preliminary bend, and means for operating the jaws subsequently to close the bend, said tag blank bending means being moved into and out of operative position by said jaw operating means.

4. In a tagging machine, the combination of a pair of jaws and a movable carriage upon which the jaws are mounted, means for imparting a preliminary bend to a tag blank upon the movement of the carriage,

and means for actuating the jaws to close the bent tag, said tag bending means being moved into and out of operative position by said jaw-actuating means.

5 5. In a tagging machine, the combination of a pair of jaws, means including a reciprocating member for operating the jaws, a tag bending member cooperating with the jaws, and connections between said tag bending member, and said reciprocating member to operate the former.

6. In a tagging machine, the combination of a pair of jaws, means for maintaining the jaws normally open, a tag bending member cooperating with the jaws, means for closing the jaws subsequent to the operation of said tag bending member, and connections between the tag bending member and the jaw-operating means for moving said member into and out of operative position.

7. In a tagging machine, the combination of a pair of normally open jaws, a reciprocating carriage on which the jaws are mounted, a tag bending member toward and from which the carriage is movable, and cooperating with the open jaws, and means for operating the jaws, said jaw-operating means being connected to and operating the tag bending member.

8. In a tagging machine, the combination of a pair of normally open jaws, a reciprocating carriage on which the jaws are mounted, a tag bending member toward and from which the carriage is movable, and cooperating with the open jaws, means for reciprocating the carriage, and means connected with said last named means for operating the jaws, said jaw-operating means being connected to and operating the tag bending member.

9. In a tagging machine, the combination of a pair of normally open jaws, a reciprocating carriage on which the jaws are mounted, a tag bending member toward and from which the carriage is movable, and cooperating with the open jaws, means for reciprocating the carriage, and means connected with the said carriage for closing the jaws subsequent to the operation of said tag bending member, said jaw-closing means being connected to and operating the tag bending member.

10. In a tagging machine, the combination of a pair of cooperating jaw members, a movable carriage on which they are mounted, means for moving the carriage, means for opening and closing the jaws, a tag bender movable toward and from the jaws, and means connected to the jaws for operating the tag bender.

11. In a tagging machine, the combination of a pair of normally open jaw members, means for maintaining them normally open, means on the jaws for supporting a tag blank, means connected to and cooperating with the jaws to force a tag blank into the open jaws to bend it, and means for subsequently closing the jaws.

12. In a tag bending machine, the combination of a pair of normally open jaws, means for maintaining them normally open, tag blank supporting means on the jaws, a bending device connected to and cooperating with the open jaws, means for operating the tag bending device, and means for normally preventing the jaws from closing.

13. In a tag bending machine, the combination of a pair of normally open jaws, means for maintaining them normally open, tag blank supporting means on the jaws, a bending device cooperating with the open jaws, means for operating the tag bending device, and means for normally preventing the jaws from closing, said last named means including a locking member movable into and out of the path of one of the jaws.

14. In a tagging machine, the combination with means for feeding tag blanks, of a bending mechanism for the blanks, said mechanism including a pair of normally open jaws, means for maintaining the jaws normally open, means for supporting the blanks on the jaws, a bending device cooperating with the open jaws, means for operating said bending device and means for normally preventing the jaws from closing.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD WELLS RICE.

Witnesses:

PER EDWIN PERSSON,
JOHN L. MURPHY.