

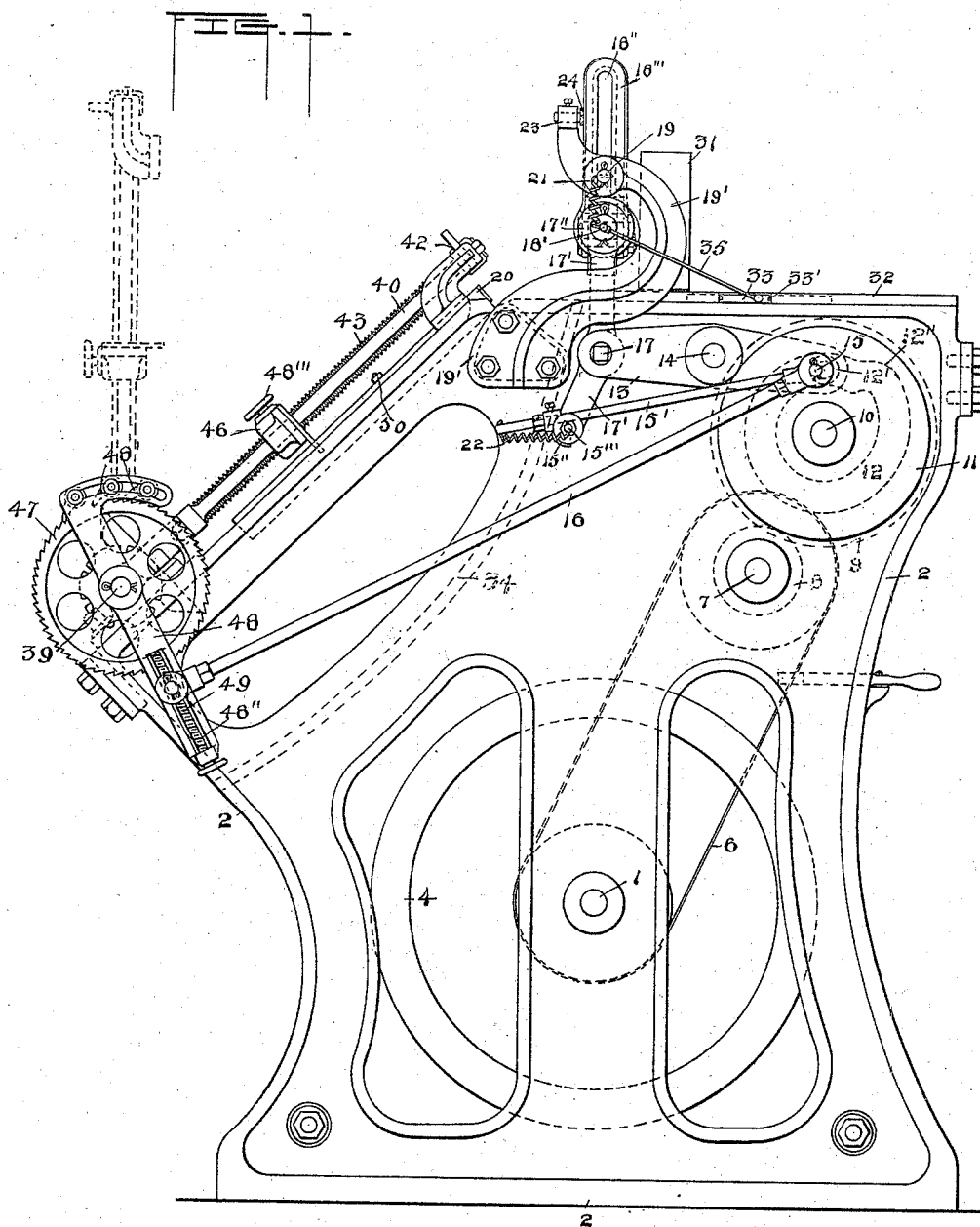
(No Model.)

5 Sheets—Sheet 1.

D. J. BURR.
TOBACCO TAGGING MACHINE.

No. 526,374.

Patented Sept. 25, 1894.



Witnesses.

Arch. M. Cather.
J. M. Coppenhaver.

Inventor

David J. Burr

by
Benj. R. Catlin Attorney

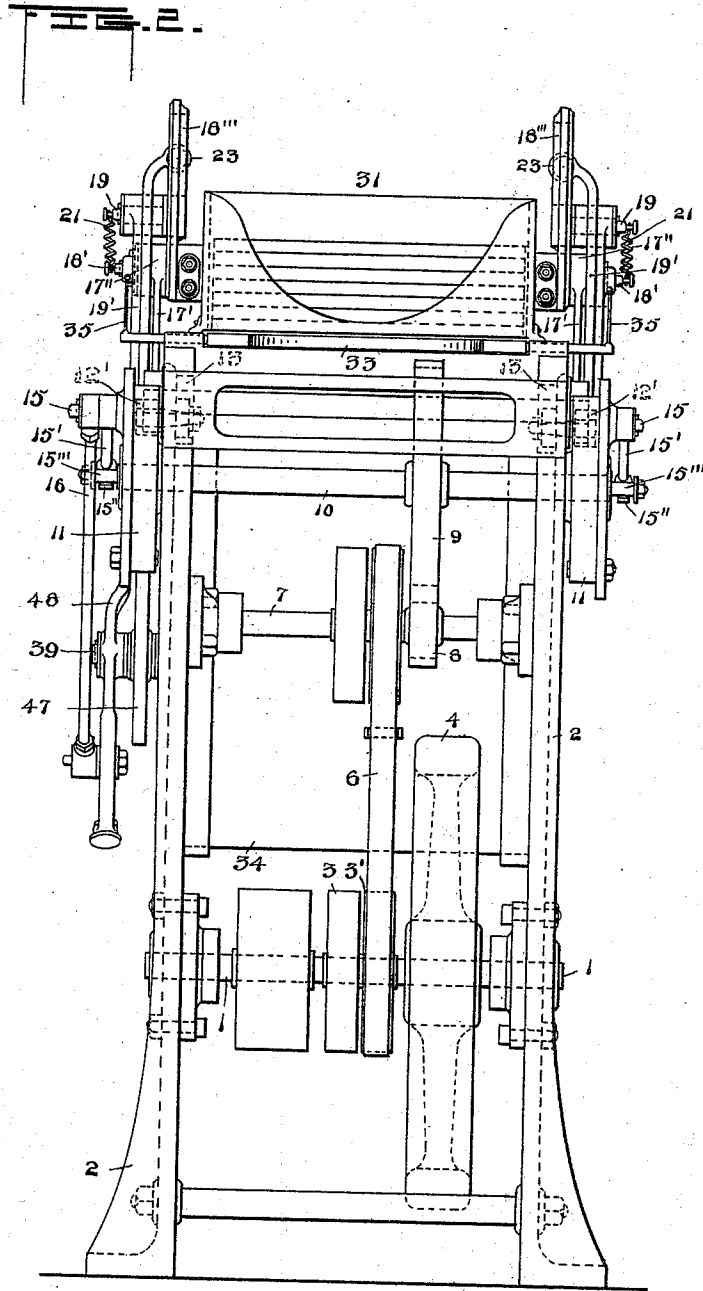
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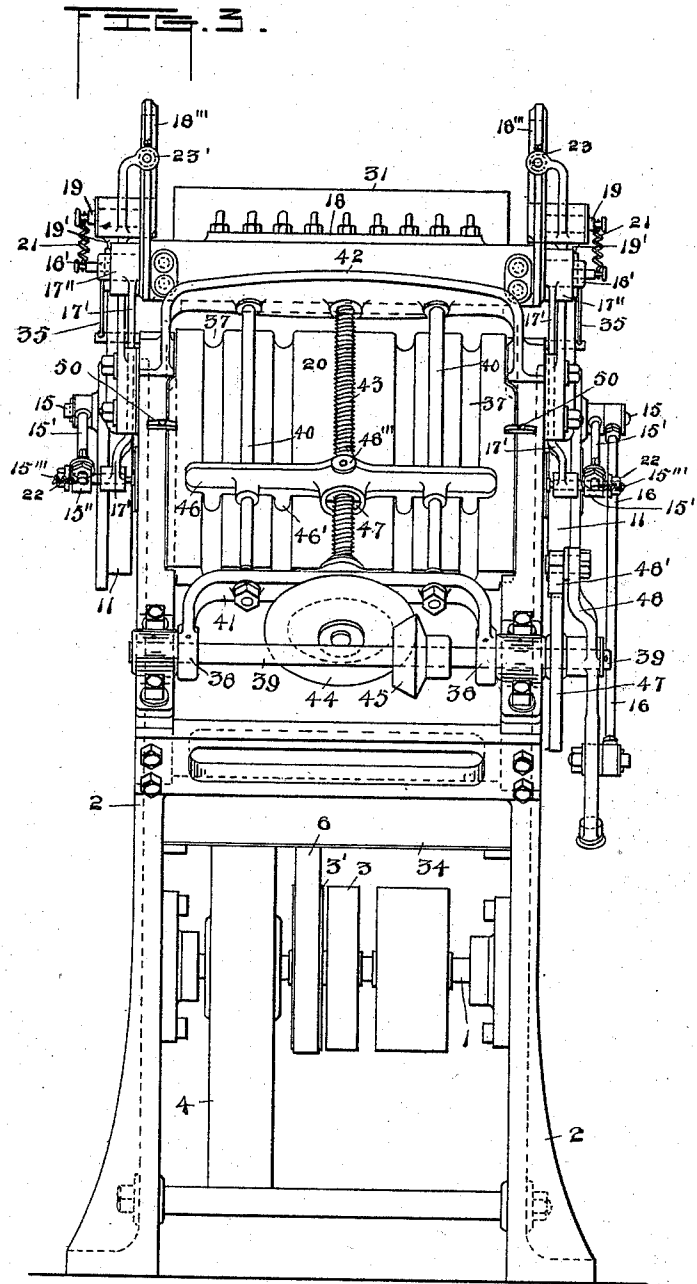
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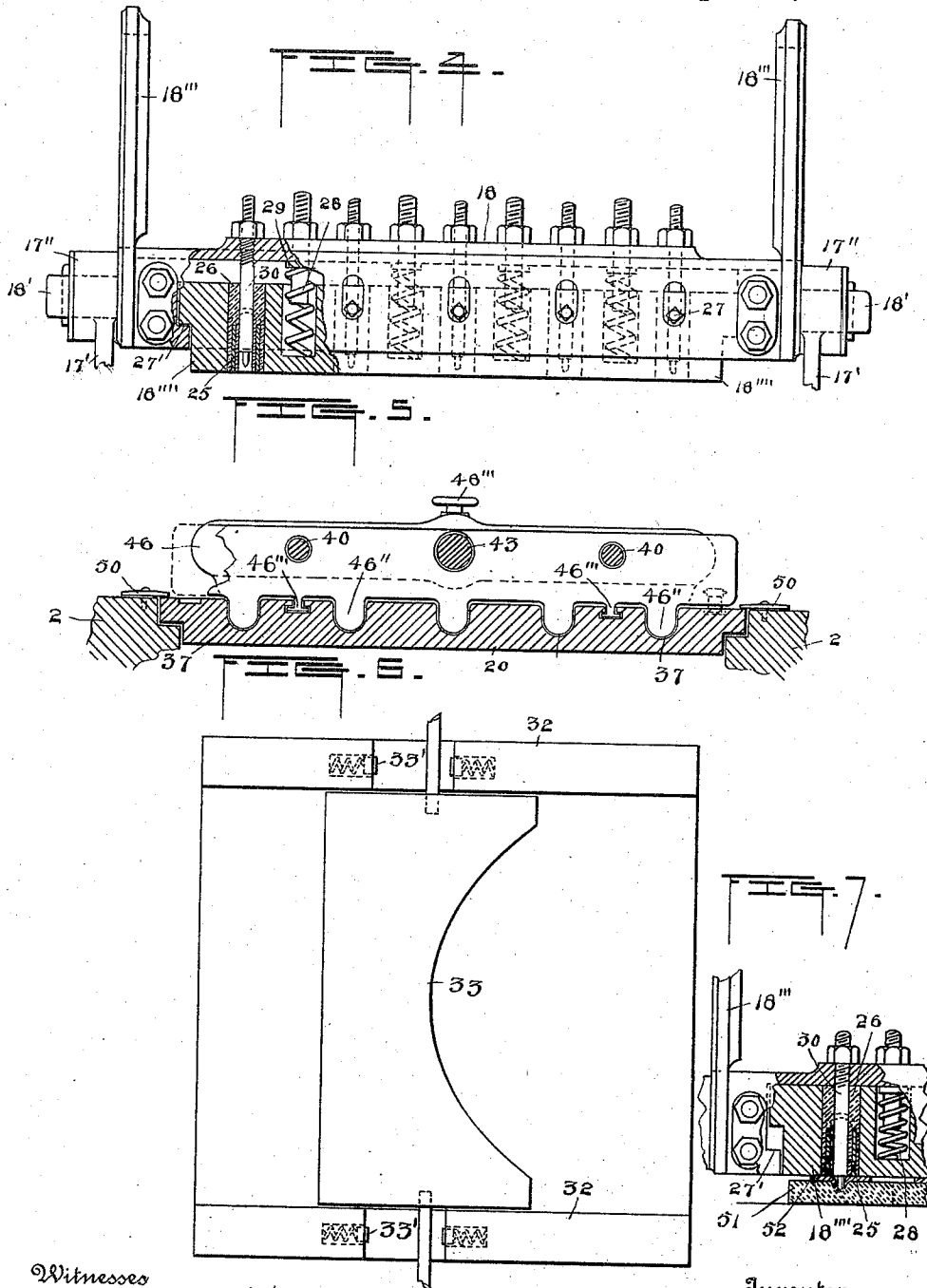
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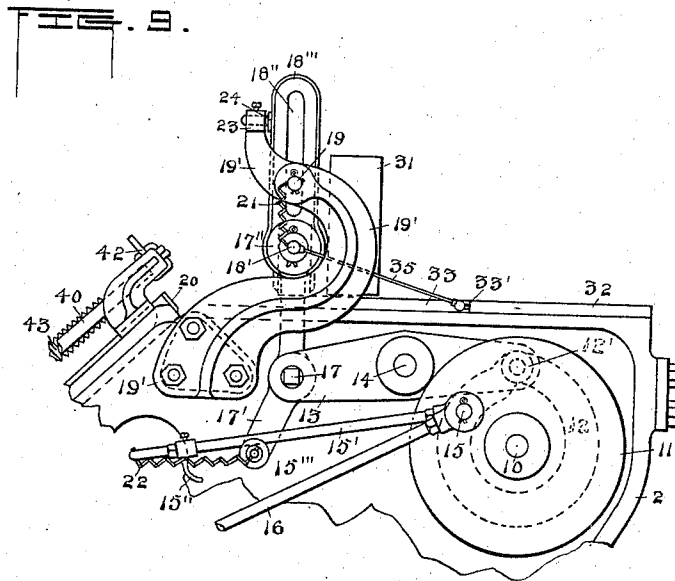
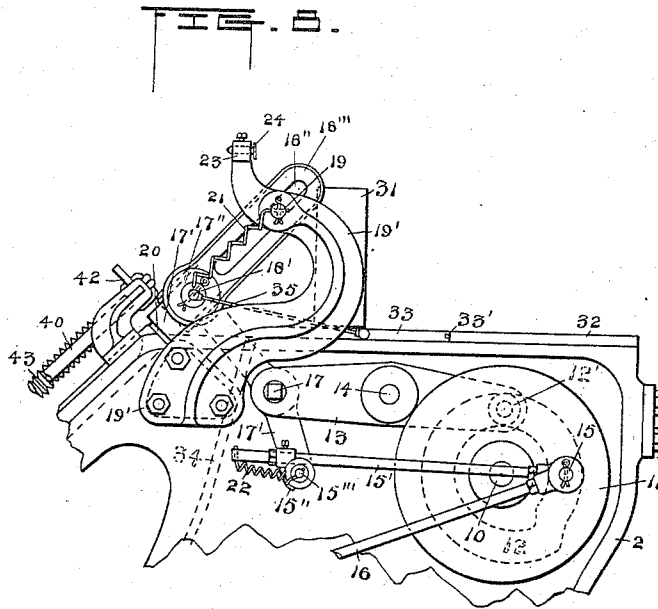
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5 Sheets—Sheet 5.

D. J. BURR.
TOBACCO TAGGING MACHINE.

No. 526,374.

Patented Sept. 25, 1894.



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UNITED STATES PATENT OFFICE.

DAVID J. BURR, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF TO
LEWIS H. LIGHTFOOT, OF SAME PLACE.

TOBACCO-TAGGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,374, dated September 25, 1894.

Application filed October 14, 1893. Serial No. 488,132. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. BURR, a resident of Richmond, in the county of Henrico and State of Virginia, have invented certain
5 new and useful Improvements in Tobacco-Tagging Machines; and I do hereby 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 pertains to make and use the same.

The invention relates to attaching tags to tobacco, and has for its object to provide a simple, easily operated economical machine adapted to affix tags to tobacco plugs or the
15 like with certainty and rapidity and with as small an amount of manipulation as practicable; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is an elevation of the left side of the machine with reference to the position of the operator. Fig. 2 is a front elevation. Fig. 3 is a rear elevation. Fig. 4 is an enlarged and partly
25 broken elevation of a tag carrier with punches. Fig. 5 is a similar view of a tag feeding device. Fig. 6 is an enlarged plan of feeding plate and table. Fig. 7 is an enlarged sectional detail showing the position of parts just as a tag has been secured to a plug by a
30 punch. Figs. 8 and 9 are partial side elevations.

The machine comprises in general a tag feeder, a tag carrier, a tobacco feeder and mechanism for punching the tags and simultaneously affixing them to plugs. The devices are all operated by power transmitted from a suitable shaft such as indicated by numeral 1 provided with bearings in a frame
35 2 and preferably with fast and loose pulleys 3 and 3' situated within the frame in a manner to receive a belt from below and also provided with a belt shifter of any approved construction and operated either by foot or
45 hand. The particular devices for transmitting power are however not of the essence of the invention.

4 denotes a fly wheel.

6 is a belt by which power is transmitted
50 from the fixed pulley 3 to a pulley on shaft 7 having bearings in the frame as indicated.

8 is a pinion fast on shaft 7 and 9 a spur gear wheel fast on a shaft 10 also journaled

in the frame and extending beyond it at each side as shown.

11 denotes wheels fixed on this shaft outside the frame and provided each with a cam groove 12. These cams control the movements of levers 13 pivoted or fulcrumed at 14 with the effect to fasten tags upon tobacco
60 plugs as will be hereinafter described. To pins or studs 15 on said wheels 11 are pivotally connected rods 15' operating the tag carrier to pick up tags. On the left hand wheel 11 is pivotally secured a connecting rod 16 to
65 feed tags to the carrier as will also be further described.

To each of the levers 13 is pivoted or fulcrumed at 17 a lever 17', which hub at 17'' has a pivotal connection to the extensions of
70 journals 18' of a tag carrier and punch holder 18.

19 are studs fast to the inside of the posts 19' on the machine frame and extending into slots 18'' (see Fig. 1) formed in posts 18''
75 attached to the tag carrier.

The revolutions of the wheels 11 are adapted to bring at the time desired the hooks 15'' of rods 15' against studs 15''' fast on levers 17' and move said levers about their
80 fulcrums 17 with the effect to turn the tag carrier on its journals 18' and carry its foot toward the tag magazine 20, the levers 13 at such time turning on their pivots and lowering the fulcrums 17 of levers 17'. In this movement the posts 18'' slide on the studs 19 downwardly in a direction inclined toward the tag magazine. It will be understood that the upper ends of the levers 17' are pivotally connected to the extensions 18' (see Fig. 4) of the
90 tag carrier to which latter the slotted posts 18'' are fixed. When therefore the upper ends of levers 17' are swung forward as above stated they carry the lower end of the magnets held in the tag carrier toward the tag
95 magazine and as the tag carrier is loosely held by the studs 19 which enter the slots 18'' said carrier and the posts fixed thereto are turned about the studs so that the magnets are presented directly to the tags in the magazine,
100 the carrier and magazine at such time being situated in practically the same plane. By this operation springs 21 attached to the frame and to the tag carrier are put under tension to return the tag carrier to its former position. The springs 22 connect the ends of rods

15' with the studs 15''' fixed on levers 17'. The "recover" of the tag carrier by means of these springs tends to obviate the jar of the carrier posts 18''' against the guides 23 which might be produced were the carrier returned positively. Such jar which would tend to cause the dropping of tags or work other injury is further obviated by leather or rubber cushions 24 situated in and near the path of the posts 18''' and adapted to guide the latter and also the tag carrier and punch holder in their vertical movements to be hereinafter described. These cushions may be made of porous material and lubricated slightly if desired.

As illustrated in the present instance the tags are withdrawn from the receptacles in the magazine by magnets 25 situated in the tag carrier. These may be of any suitable form and number. One small horse shoe magnet held in an insulating block 26 of wood or other material can be made to lift a tag at each operation, or two or more small magnets could be used but they should not have combined force sufficient to lift more than one tag and preferably they should present no magnetic surface at the edge of a tag whereby the next one below is liable to be attracted. The magnets or magnet holders may be secured in suitable recesses in the bar 18''' of the tag carrier in any convenient manner as by set screws 27.

The bar 18''' is situated in an open bottomed chamber or recess in the body of the carrier which body is the punch holder and the bar is vertically movable therein being prevented from dropping out by its ends which rest upon the body or punch holder at 27'. It is normally held down upon these stops or supports 27' by springs 28 bearing against said body or against washers 29 on bolts secured in the body and also bearing against the bottom of recesses in the bar.

30 denotes punches made fast in the body of the tag carrier. They are each situated close beside a tag lifting magnet or between two magnets or between two parts of one, as found convenient in practice, and they may be arranged and directed to any part of the tag as for example against its center.

The tags which are metal disks of any desired contour having been picked out of the mouths of the tag receptacles, and the tag carrier and punch holder swung to a vertical position as before described the cam roller 12' on lever 13 having at such time reached the part 12'' of the cam 12 is suddenly raised thereby and the punch holder and tag carrier with suspended tags attached to the magnets are brought down upon the tobacco, by which operation the springs 28 are compressed and bar 18''' pressed up to uncover the points of the punches which latter are thereupon forced through the tags 52, punching a portion thereof into and securing them upon the plugs 51, as indicated in Fig. 7. The punch holder being thereupon raised by the con-

tinued action of the cam 12 upon lever 13 the punches are withdrawn while the springs 28 expand and hold down the bar 18''' until it is lifted by the stops or supports 27' coming in contact therewith. The punches are thereby prevented from lifting the punched tags.

Lumps of tobacco are fed singly under the punches and removed after being tagged by the following described mechanism.

31 denotes a hopper adapted to receive a pile of lumps and 32 is a feeding table.

33 is a feed plate adapted to be suitably moved on the table and against the bottom lump in the hopper to push it out from under the pile to a position directly under the punch holder in readiness to receive the tags and punches. In this operation the lump displaces its predecessor and pushes it to the rear so that it slides down the inclined plane 34 to the floor or receptacle where it may be picked up by hand or if desired it can be carried away by well known carriers suitably disposed for the purpose. The feed plate is moved by the rods 35 pivotally secured thereto and to the upper ends of levers 17'. The feeding motion of the plate occurs at the time when the magnets take tags from the magazine and the plate is retracted when the magnets are brought to the vertical position in the arrangement and construction illustrated.

33' are springs or elastic buffers arranged to receive the blow of the retreating plate and obviate jarring.

The tag magazine 20 is preferably made removable and may be constructed of wood or other suitable material producing little friction. It is provided with tag holding grooves or troughs 37 and is conveniently supported in an inclined position upon a part of the machine frame. This magazine which is preferably a board having a series of tag receiving grooves in its upper side is in practice placed in recesses in the frame and held down by turn buttons 50 as indicated in Fig. 5. To the lower suitably inclined part of the frame at 38 is secured a hinged frame comprising two rods 40 fast on a curved cross bar 41 the latter being loosely connected to a shaft 39 and also rigidly connected by said rods to a cross bar 42. Supported to turn in the bar 41 is a screw threaded rod 43 provided at its foot with a bevel wheel 44 driven by pinion 45 fast on shaft 39.

46 is a movable bar in which is secured a split nut 47 held in by set screw 48''. This nut is made to travel on the screw rod 43 by the turning of the latter through the medium of the bevel wheel and pinion. The traveling nut carries the bar 46 which by its fingers 46' pushes the tags in their respective troughs toward the upper part of the tag magazine and toward the tag carrier. The traveling nut is made in parts to provide for its ready removal when it is desired to run the finger bar 46 back to its initial position. A separate finger bar 46'' (see Fig. 5) may be attached by any convenient means to the

grooved magazine in manner to be pushed by the bar 46 or some equivalent therefor and thereby suitably push up the tags. This bar 46" will preferably be connected to the magazine by guides 46'" or the like and will be provided with a rack and pawl, set screw or other device to prevent its slipping backwardly and dumping the tags out of the troughs when the bar 46 or other pusher is moved from behind it.

The frame carrying the tag feeding devices is hinged to shaft 39 at 38 and can be swung back to permit the removal of an empty magazine and the supplying of one that is filled ready to be placed in the machine with but a moment's delay in the work of the latter.

It is not essential in all cases that the frame be made removable from over the magazine by means of the hinged construction described, though that is preferable. The object of the above described bar 46" made separate from the hinged frame is to prevent the accidental rearward discharge of tags liable to occur when said frame is turned to or toward the position indicated by dotted lines in Fig. 1. The tag moving fingers if fixed to bar 46 would however operate to feed the tags, but as the bar is fixed to the hinged frame said fingers if fixed thereto would be lifted from behind the tags, if any remained in the magazine, and permit them to slip down to the floor.

The tag feeding devices are moved by the wheel 47 made fast on shaft 39. 48 is a pawl lever pivoted on said shaft and operated by the rod 16 moved as before stated. The driving pawls are indicated at 48'. These are made adjustable in the head of the lever and the lever receives the end of rod 16 adjustably whereby the rate of movement of the wheel 47 and consequently of the tags can be nicely regulated. The foot of rod 16 can be moved up and down in the slot 48" by means of a set screw 49 and the pawls can be moved upon loosening their set screws to effect the said adjustment.

The above described machine is operated by a single person, the tobacco and tags being suitably supplied, and it can be advantageously placed between the shaper and press usually employed in tobacco factories but is not limited to such situation.

The machine avoids the necessity of much handling of the plugs and attaches the tags rapidly and thus enables a number of hands to be dispensed with, not only saving the cost of their wages but what often is very important it economizes valuable space usually required by the boys who do work of this kind.

In practice the tags will be supplied in packages which can be readily dropped into the troughs of the magazine and this work can be done elsewhere than in the crowded spaces of the factory.

The precise form and arrangement of the several parts of the machine are not deemed essential except as herein pointed out and

they can be modified by mechanical skill provided the principles of operation and construction set forth are substantially preserved.

The machine herein illustrated is adapted to affix five tags at each operation by punching them in the center, and uses five permanent magnets; but neither the number of punches, nor of the magnets nor the species of the latter, nor the shape of the tags nor the situation of the punched parts are deemed essential. Neither is it necessary to employ a separate magnet to pick up each tag. Neither is the use of either permanent or electro magnets as a means of picking up tags essential to the other parts of the machine, since they would operate advantageously were the tags picked up by adhesives, suction devices or mechanical gripping devices.

The particular forms of tag magazine or of tag supplying devices are not necessary to the other parts of the invention, and in some cases I contemplate substituting for them devices for forming tags and presenting them to tagging mechanism.

In my application, Serial No. 499,583, filed February 8, 1894, I have shown and described a machine having resemblance to that herein set forth but I have therein substituted dies and other devices adapted to form and carry tags for the magnets and the tag magazine embraced in the present application.

Having thus described my invention, what I claim is—

1. In a tobacco tagging machine, the combination of tag-affixing devices, a removable tag magazine and mechanism for picking up and carrying separate tags from said magazine to said tag-affixing devices, substantially as set forth.

2. In a tobacco tagging machine, a removable tag magazine combined with mechanism for picking up and carrying separate tags from said magazine and tag-moving devices situated in proximity to and partially covering the magazine said tag moving devices being removable to permit the substitution of a full magazine for an empty one, substantially as set forth.

3. In a tobacco tagging machine a tag magazine provided with troughs in combination with mechanism for picking up and carrying separate tags from said magazine and with tag-moving fingers adapted to enter the troughs, and devices for moving the fingers lengthwise thereof, substantially as set forth.

4. In a tobacco tagging machine a tag magazine provided with troughs in combination with a tag-moving bar having fingers entering the troughs, said bar being secured to the magazine to prevent accidental dumping of tags and mechanism to move the finger bar, substantially as set forth.

5. In a tobacco tagging machine the combination of a tag magazine having grooves, a tag feeding device having fingers to enter said grooves, a screw to move said device, a wheel and intermediate devices such as bevel

wheels 44 and 45, to move the screw, a pawl lever to move the wheel and a connecting rod adjustably connected to the lever to regulate the operation of the feeding device, substantially as set forth.

6. In a tobacco tagging machine the combination of a tag magazine having grooves, a tag-feeding device having fingers to enter said grooves, a screw to move said device, a wheel and intermediate devices such as bevel wheels 44 and 45, to move the screw, a pawl lever to move the wheel and a connecting rod and pawls made adjustable to regulate the operation of the feeding device, substantially as set forth.

7. In a tobacco tagging machine, a table, a tag magazine having grooves, a tag-moving device having fingers to enter said grooves, mechanism for moving said device, a tag carrier, devices for tilting said carrier to pick up tags and subsequently moving it over a table to deposit the tags, punches, and punch reciprocating mechanism, all combined substantially as set forth whereby tags are moved in the magazine, picked out of the same, carried over the table and punched.

8. In a tobacco tagging machine a table to support tobacco plugs, a tag magazine, a tag carrier, devices to move the carrier to and from the magazine, punches supported in said carrier, devices to move the carrier and tags down upon the plug, and means for reciprocating the punches to punch the tags while the carrier holds the same, substantially as set forth.

9. In a tobacco tagging machine, a tag magazine, a tag carrier provided with tag-lifting magnets, devices to move the carrier to and from the magazine, devices to force the carrier down, punches supported in the same, mechanism for reciprocating the punches, and means for holding the carrier to permit the punches to pass therethrough, substantially as set forth.

10. In a tobacco tagging machine, a tobacco plug supporting table, a tag magazine, a tag carrier to deliver tags from the magazine to plugs on the table comprising insulated magnets, devices for fastening tags to plugs, and means for moving the fastening devices away from the fastened tags, substantially as set forth.

11. In a tobacco tagging machine the combination of a plug-supporting table, a punch holder, a tag carrier bar movable with respect to the holder, springs for holding said bar in position to cover the punch points, and devices for moving the holder and carrier to the tobacco and for holding the carrier and tags thereon, and means for punching the tags and withdrawing the punches while the tags are held all combined substantially as set forth, whereby the springs are compressed, the punches uncovered to permit piercing the tags and the tags subsequently held while the punches are withdrawn therefrom.

12. In a tobacco tagging machine the tag carrier comprising the carrier bar and punch holder containing punches, the holder having the slotted posts, and devices for reciprocating the punches, in combination with mechanism for tilting said carrier and for raising and lowering it, and the studs 19 fixed to frame posts and loosely entering the slots in said punch holder posts, substantially as set forth.

13. In a tobacco tagging machine the tag carrier comprising the carrier bar and punch-holder containing punches, the holder having the slotted posts, and devices for reciprocating the punches, in combination with mechanism for tilting said carrier and for raising and lowering it, the studs 19 fixed to frame posts and loosely entering the slots in said punch-holder posts, and guides situated at the side of the path of the latter posts, said guides acting as stops when the tilted carrier is returned after picking up tags, substantially as set forth.

14. In a tobacco tagging machine and in combination a table, a tag carrier comprising devices for picking up tags and moving the same, the punch holder containing punches, and movably connected to said carrier, a receptacle for a pile of tobacco lumps, a sliding plate to move against the bottom lump of the pile and push it under the punches, devices for reciprocating the punches, and mechanism connecting said plate and the carrier-moving devices whereby the plate is automatically operated, substantially as set forth.

15. In a tobacco tagging machine and in combination a tag carrier, a punch-holder containing punches and movably connected to said carrier, devices for reciprocating the punches, a receptacle for a pile of tobacco lumps, a table or support, a sliding plate to move against the bottom lump of the pile and push it under the punches, rods 35 pivotally connected to the sliding plate and tag carrier, and mechanism for moving the carrier, substantially as set forth.

16. In a tobacco tagging machine and in combination a tag carrier, a punch-holder containing punches and movably connected to said carrier, devices for reciprocating the punches, a receptacle for a pile of tobacco lumps, a table or support, a sliding plate to move against the bottom lump of the pile to push it under the punches, rods 35 pivotally connected to the sliding plate and tag carrier, and mechanism for moving the carrier, and devices for obviating jar situated in the path of the plate, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID J. BURR.

Witnesses:

C. H. SIMS,

JNO. F. WREN.