

No. 667,153.

Patented Jan. 29, 1901.

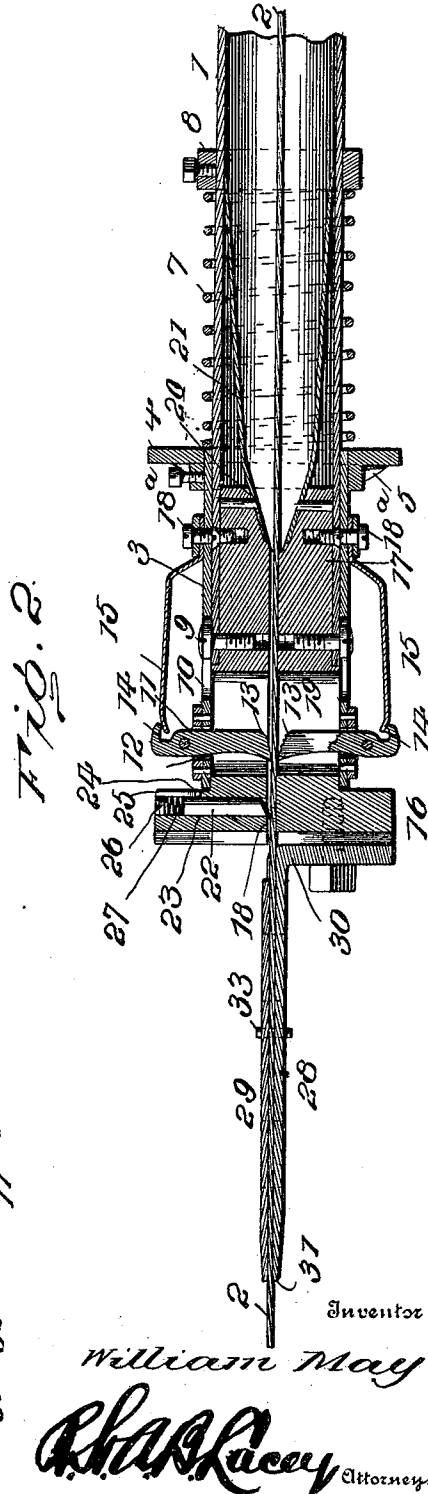
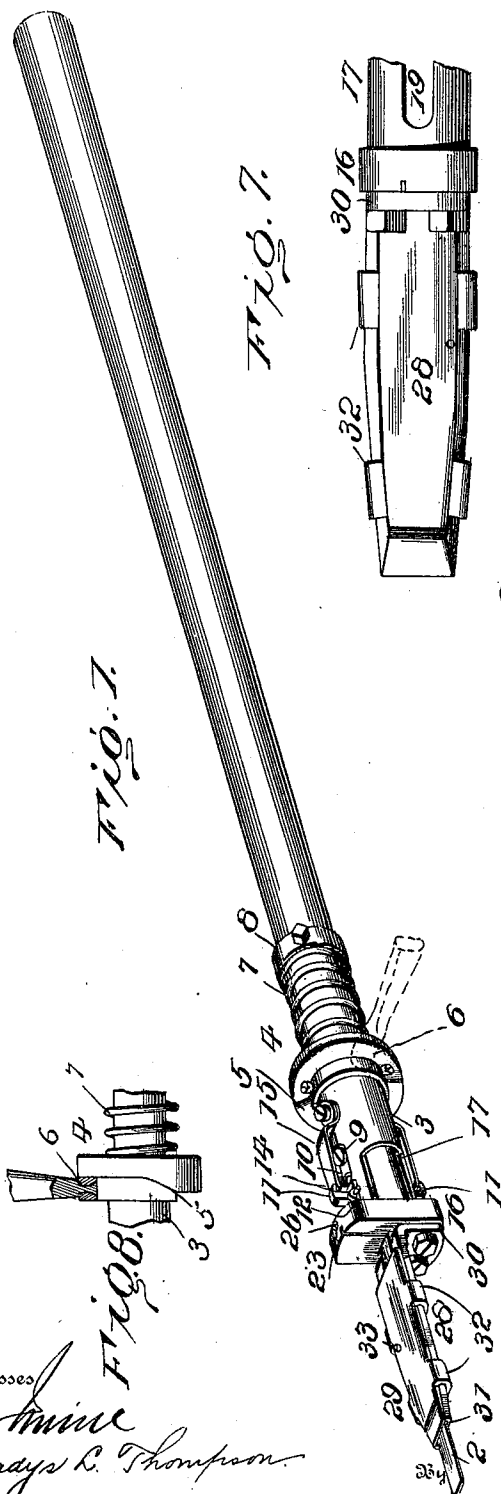
W. MAY.

FEED MECHANISM FOR TACK MACHINES.

(No Model.)

(Application filed Apr. 4, 1900.)

2 Sheets—Sheet 1.



Witnessed

*Wm. M. Thompson*  
Gladys R. Thompson

Inventor

*William May*

*A. H. Lacey* Attorneys

No. 667,153.

Patented Jan. 29, 1901.

W. MAY.

FEED MECHANISM FOR TACK MACHINES.

(No Model.)

(Application filed Apr. 4, 1900.)

2 Sheets—Sheet 2.

Fig. 3.

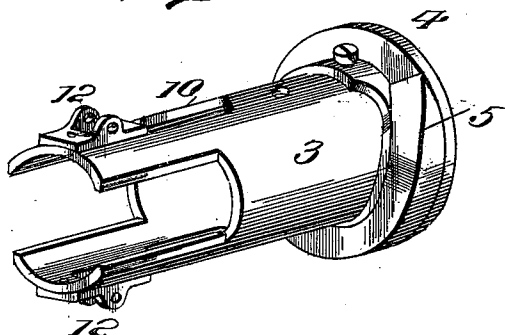


Fig. 5.

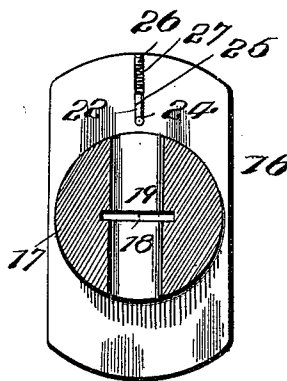


Fig. 6.

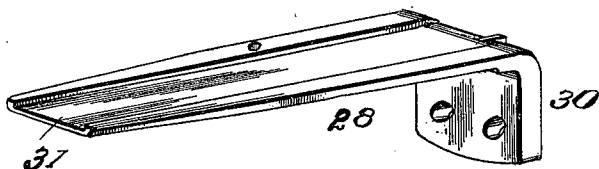
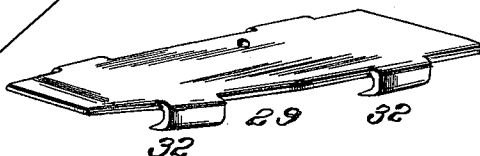
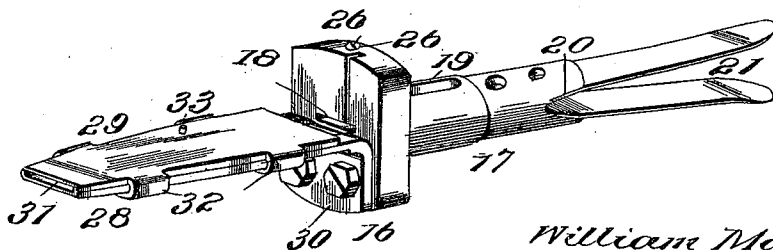


Fig. 4.



Inventor

William May

Witnesses

Johnnie  
Blair L. Thompson

By

R. H. Racey

Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM MAY, OF LESTERSHIRE, NEW YORK.

## FEED MECHANISM FOR TACK-MACHINES.

SPECIFICATION forming part of Letters Patent No. 667,153, dated January 29, 1901.

Application filed April 4, 1900. Serial No. 11,521. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MAY, a citizen of the United States, residing at Lestershire, in the county of Broome and State of New York, have invented certain new and useful Improvements in Feed Mechanism for Tack-Machines and the Like; 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 appertains to make and use the same.

This invention relates to feed mechanism for tack and kindred machines in which a strip or blank is intermittently advanced to a cutting mechanism for severance into pieces of predetermined size.

The feed mechanism is most especially designed for tack-machines, yet it may be employed in any type of machine requiring an intermittent feed of a strip carried by a rotating spindle. Hence the mechanism *per se* is shown and described divested of the parts with which under ordinary conditions it coöperates.

The invention also consists of the novel features, details of construction, and combination of the parts, which hereinafter will be more fully disclosed and finally claimed; and for this purpose and also to acquire a knowledge of the merits of the invention and the structural details of the means whereby the results are attained reference is to be had to the appended description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment thereof is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a feeding mechanism of the character aforesaid embodying the essential features of the invention. Fig. 2 is a longitudinal section. Fig. 3 is a perspective view of the reciprocating sleeve carrying the gripping devices. Fig. 4 is a detail view in perspective of the head which is fitted to the spindle or barrel and to which the guide is attached. Fig. 5 is a transverse section of the head, showing the passage formed therein for the strip or blank. Fig. 6 is a detail view of the guide, the parts being separated. Fig. 7 is a detail view of the

guide, the parts being assembled. Fig. 8 is a detail view in elevation of the inner end portion of the spindle, showing more clearly the stop and its relation with the cam for actuating the feeding mechanism.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The spindle 1 (also designated as a barrel) is tubular to admit of the passage there-through of the strip or blank 2, from which the tacks or like articles are to be cut. This spindle is adapted to be mounted for rotation and may be of any length and diametrical extent best adapted to the nature of the machine to which it is fitted. A sleeve 3 is mounted upon an end portion of the spindle and is adapted to have a limited reciprocating movement imparted thereto to correspond with the required need of the strip or blank to form the desired article. An outer flange or collar 4 is provided at an end of the reciprocating sleeve 3 and may be formed thereon or have adjustable connection therewith as desired. This flange or collar has a cam portion 5, which slopes in opposite directions and which is adapted to coöperate with a suitably-disposed part, so as to impart a reciprocating movement to the sleeve as the spindle turns upon its axis. As shown, a roller 6 is disposed in the path of the cam 5, and the latter rides thereon and causes a relative rearward movement of the sleeve against the tension of a coil-spring 7, mounted upon the spindle and confined between the sleeve 3 and a collar 8, adjustably connected with the spindle, so as to vary the tension of the spring. When the cam 5 engages with the roller or stop 6, the sleeve is moved rearward and compresses the spring 7, and when the cam clears the stop 6 the spring 7, regaining itself, moves the sleeve forward and advances the stop or blank 2 a distance corresponding to the amount of movement of the sleeve.

The reciprocating sleeve 3 is provided with gripping mechanism to engage with the strip or blank 2 and advance the same during the forward movement of the sleeve, said gripping mechanism releasing its hold upon the strip when the sleeve moves rearward. Independent rotation of the sleeve upon the

spindle is prevented by pins or screws 9 co-operating with longitudinal slots 10, formed in opposite sides of the sleeve, said screws or pins 9 constituting stops and projecting from the spindle and having their outer end portions entering the slots 10. The gripping mechanism consists of oppositely-disposed dogs 11, having pivotal connection near their outer ends with lugs 12, applied to opposite sides of the sleeve 3, the inner ends of the dogs 11 being toothed, as shown at 13, and of sufficient extent to insure firm and positive engagement with opposite sides of the strip or blank 2. The outer end portions of the dogs 11 are formed in their rear edges with notches 14 to receive the forward ends of flat springs 15, which normally exert a pressure upon the dogs to cause the strip or blank 2 to be gripped between them. These springs 15 extend lengthwise of the sleeve 3 and are attached at their rear ends thereto by means of screws 18<sup>a</sup>, the forward ends entering the notches 14 of the dogs for the purpose stated.

A head 16 is attached to the end of the spindle or barrel provided with the reciprocating sleeve and is formed with a shank 17, which enters the spindle and is made fast thereto in any desired manner. A longitudinal passage 18 is formed in the head and shank at a central point and corresponds in cross-section to the outline of the strip or blank 2 and is slightly larger than the latter to admit of its free movement therethrough without binding. A longitudinal slot or opening 19 is formed in the shank 17 and intersects with the passage 18 and receives the inner ends of the dogs 11, the length of the slot being sufficient to prevent interference with the dogs during the reciprocating movements of the sleeve. The inner end of the shank 17 is cleft, as shown at 20, and spring-plates 21 project therefrom upon divergent lines and form a close joint with the opposite inner walls of the spindle. The rear edges of the plates 21 are made rounding and sharpened, so as to lie close against the inner walls of the spindle and prevent the formation of any projecting shoulder or part which would be liable to obstruct the entrance of the strip or blank when introducing it into the spindle when charging the same. These spring-plates 21 act in the capacity of guides to give proper direction to the strip or blank 2 when first placing it in position. By having the plates 21 of spring metal they will at all times bear against opposite sides of the spindle and preclude the formation of any projecting part.

When the sleeve 3 is moving rearward upon the spindle, the dogs 11 release their grip upon the strip 2, and in order to prevent said strip from moving backward with the gripping mechanism a detent device is provided and combined with the head 16, and consists of a reciprocating dog 22, mounted in an opening 23 of the head 16. The inner end of the dog 22 is beveled to provide a chisel edge, which engages with the strip and prevents its rear-

ward movement with the gripping mechanism when returning to obtain a new hold upon the blank. This dog 22 is round in cross-section and is prevented from turning in the opening 23 by means of a stud 24, projecting laterally therefrom and entering a slot 25 in communication with the opening 23. The outer end of the opening 23 is threaded and receives a screw-plug 26 and a spring 27, the latter exerting an inward pressure upon the dog 22 and having its tension controlled by the plug 26. A guide projects forwardly from the spindle and is attached to the head 16, and consists of members 28 and 29, having a passage formed between their opposing faces in longitudinal alinement with the passage 18, through which the strip or blank 2 passes. The member 28 has its inner end portion bent at a right angle, as shown at 30, and secured to an end portion of the head 16, and the inner face is grooved or channeled, as shown at 31, to form the opening or passage through which the strip 2 passes. The member 29 is formed with oppositely-disposed hook-shaped lugs 32, provided in pairs and adapted to embrace the beveled edges of the member 28, so as to prevent separation of the members when properly fitted together. Both members taper toward their outer ends and are separated or fitted together by a longitudinal movement. A pin 33 is passed through registering openings formed in the members 28 and 29, so as to prevent their accidental separation.

The spindle or barrel 1 may be mounted either for rotary or oscillatory movement, as best adapted, according to the work and nature of machine to which the feeding mechanism is to be applied. As the spindle turns upon its axis the cam 5 of the reciprocating sleeve will be alternately brought in contact with the stop or roller 6 and the sleeve, with its attendant parts, will be moved rearwardly against the tension of the spring 7. As soon as the cam 5 clears the stop or roller 6 the sleeve under the influence of the spring 7 will move forward and advance the strip or blank 2 to the cutting mechanism, as will be readily understood. In the rearward movement of the sleeve 3 the gripping-dogs 11 will release their hold upon the strip 2 and the detent-dog 22 will engage therewith, and upon the forward movement of the sleeve the dogs 11 will grip the strip 2 between them and carry it past the detent-dog 22. By properly adjusting the cam 5 and stop or roller 6 the movement of the sleeve can be varied as desired. Hence the completed tack or article may be cut of greater or less width.

The strip 2 may be of any length, straight or curved, and may be in the form of a coil or reel for convenience when of great length, said coil being preferably attached to the spindle.

Having thus described the invention, what is claimed as new is—

1. In feeding mechanism for tack-machines

and the like, a tubular spindle or barrel, a sleeve loosely mounted upon the spindle and bearing a gripping mechanism to positively feed the strip, a cam, means for adjustably connecting the cam with the sleeve, and a stop to cooperate with the said cam and effect a reciprocating movement of the sleeve upon the spindle, substantially as set forth.

2. In feeding mechanism for tack-machines and the like, a tubular spindle or barrel, a sleeve mounted upon the spindle and provided with gripping mechanism to positively feed the strip, a cam, means for adjustably connecting the cam with the sleeve, a stop to cooperate with the cam and effect a reciprocating movement of the sleeve, a spring mounted upon the spindle to act in opposition to the aforementioned cam to move the sleeve forward when released from the action of the stop upon the cam, and means for varying the tension of the said spring, substantially as described.

3. In feeding mechanism for tack-machines and the like, a tubular spindle, a sleeve loosely mounted upon the spindle and provided with gripping mechanism and a cam, the latter adapted to cooperate with a stop to effect a reciprocating movement of the sleeve upon the spindle, a spring mounted upon the spindle to act in opposition to the cooperating cam and stop, and a collar having adjustable connection with the spindle and receiving the end thrust of the aforesaid spring, substantially as set forth.

4. In feeding mechanism for tack-machines and the like, a tubular spindle, a sleeve mounted to reciprocate upon the spindle, dogs having pivotal connection between their ends with said sleeve, and flat springs attached at one end to the sleeve and having an opposite end cooperating with the respective dogs to cause them to positively grip the strip or blank, substantially as set forth.

5. In combination, a tubular spindle, a sleeve mounted to reciprocate upon the spindle, and provided with longitudinal slots, stops projecting from the sides of the spindle and entering the said slots to prevent any turning of the sleeve upon the spindle, and spring-actuated dogs pivoted to the sleeve and having their inner portions projecting into the spindle and adapted to positively grip the strip or blank, substantially as set forth.

6. In combination with a tubular spindle, a reciprocating sleeve provided with gripping mechanism, and a device fitted within the end portion of the spindle upon which the sleeve reciprocates and having its inner end cleft

and divergent and touching the inner walls of the spindle at opposite points without providing any obstructing projection, as and for the purpose set forth.

7. In combination, a tubular spindle, a reciprocating sleeve cooperating with the spindle and provided with gripping mechanism, and a device fitted within the spindle and provided at its inner end with divergent plates touching the inner walls of the spindle at opposite points without offering any obstruction to the passage of the strip or blank there-through, substantially as set forth.

8. In combination, a tubular spindle, a reciprocating sleeve cooperating therewith and provided with gripping mechanism, a device fitted within the spindle and provided with a longitudinal passage to centralize and give proper direction to the strip or blank, and divergent spring-plates applied to the inner end of said device and constructed to bear against the inner walls of the spindle at opposite points to give proper direction to the said strip when introducing the same into the spindle, substantially as set forth.

9. In combination, a tubular spindle, a head having a shank secured within the spindle and provided with a centrally-disposed longitudinal passage, the shank having a longitudinal opening or slot intersecting with the said passage, a sleeve mounted upon the spindle to reciprocate thereon, and dogs applied to opposite portions of the sleeve and entering the longitudinal slot of the aforesaid shank, substantially as set forth.

10. In combination, a tubular spindle, a head provided with a shank secured within the spindle and having its inner end cleft, said head and shank being provided with a centrally-disposed longitudinal passage, divergent spring-plates applied to the cleft end of the shank to bear against the inner walls of the spindle at diametrically opposite points, a guide secured to the said head and projecting therefrom and having a passage in line with the passage formed in the said head and shank, a sleeve mounted to reciprocate upon the spindle, spring-actuated gripping-dogs carried by the said sleeve, a detent applied to the aforesaid head, a cam applied to said sleeve, and a spring arranged for cooperation with the sleeve, substantially as set forth.

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

WILLIAM MAY. [L. S.]

Witnesses:

FRANK A. DAY,  
JOHN DAY.