

No. 625,351.

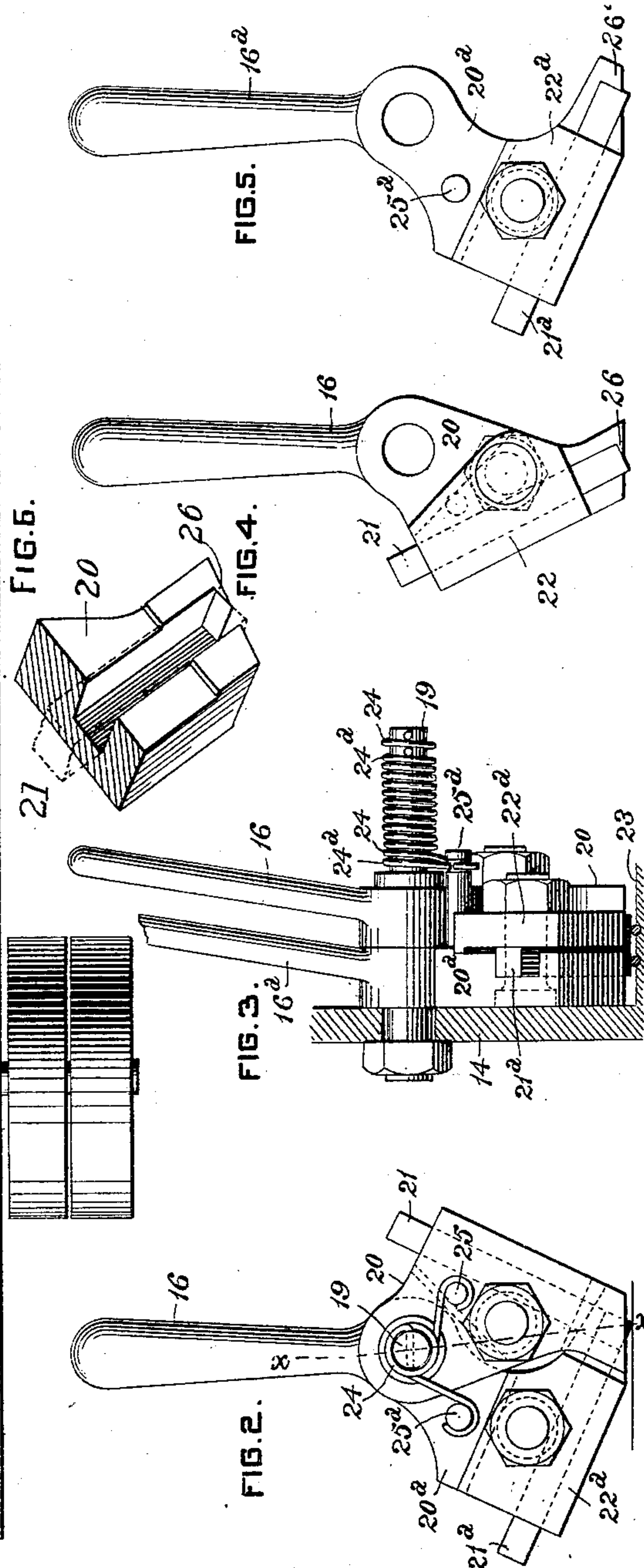
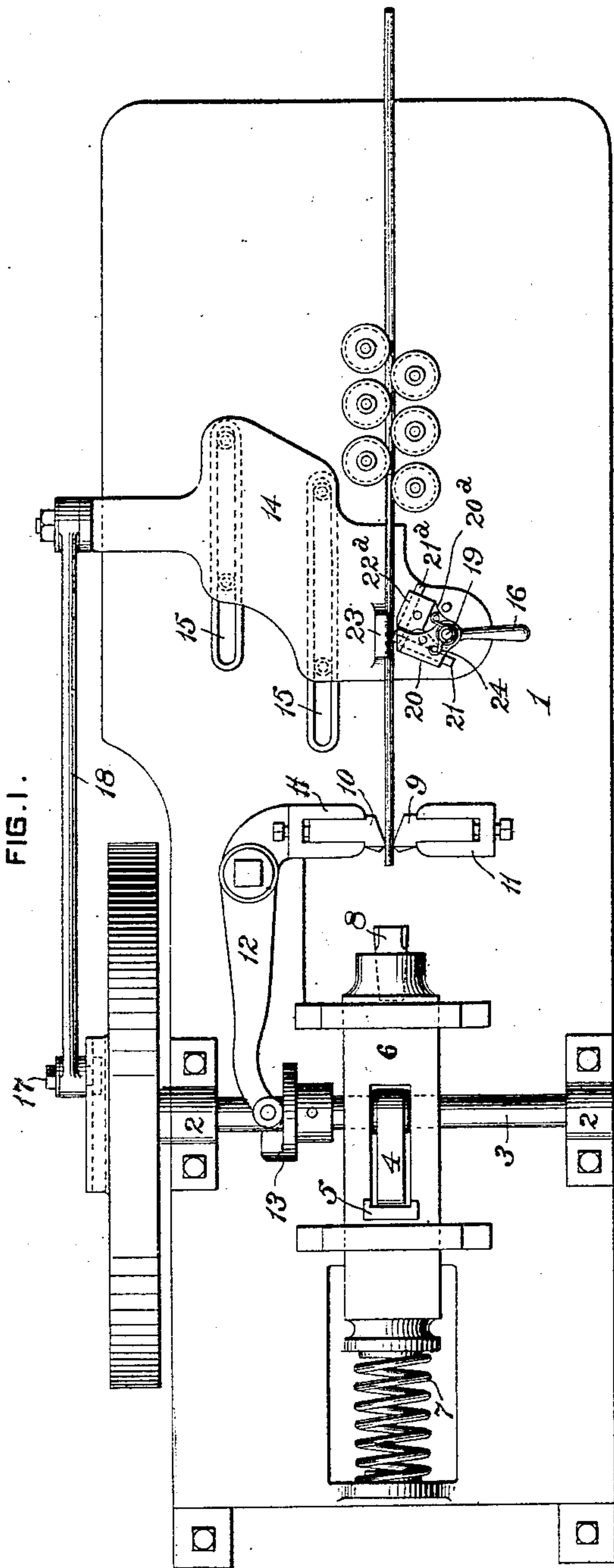
Patented May 23, 1899.

G. O. PAGE.

FEED MECHANISM FOR WIRE WORKING MACHINES.

(Application filed June 4, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR WIRE-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 625,351, dated May 23, 1899.

Application filed June 4, 1898. Serial No. 682,544. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. PAGE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented or discovered certain new and useful Improvements in Feed Mechanism for Wire-Working Machines, of which improvements the following is a specification.

The invention described herein relates to certain improvements in feed mechanism for wire-nail machines, and has for its object a construction of gripping devices which will be effective to shift two or more wires longitudinally when required, but will not nick or scrape the wires, so as to injure or impair the surface thereof, when gripping them or when rubbing along the wires during the reverse movement of the feed mechanism.

In general terms, the invention consists in the construction and combination substantially as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of a nail-machine having my improvement applied thereto. Fig. 2 is a plan view, on an enlarged scale, of the gripping mechanism. Fig. 3 is a side elevation of the same. Figs. 4 and 5 are detail views of the gripping-levers, and Fig. 6 is a perspective view of a portion of the tool-holder.

The improvement is shown in connection with a nail-forming mechanism consisting of a bed-plate 1, provided with bearings 2 for the power-shaft 3. A cam 4 is secured in said shaft and in its rotation will strike against a wearing-block 5 on the reciprocating block 6, thereby shifting the block or slide back, compressing the spring 7, which when free to operate will force the block forward. An upsetting-head 8 is secured in the forward end of the block or slide and on the forward movement of the block or slide strikes against and upsets the end of the wire held between the combined grippers and cutters 9 and 10. One of these grippers and cutters is held in a suitable socket 11, secured on the bed, and the other is fastened in one end of a bent lever 12, pivotally mounted on the bed-plate. The opposite end of the lever is operated by a cam

13 on the power-shaft 3 to move the gripper and cutter 10 toward and from the opposing gripper and cutter.

The wires are fed forward by means of a feed mechanism consisting of a sliding plate 14, mounted in suitable guides 15 on the bed-plate, and pivotally-mounted nippers. The sliding plate 14 is operated by the shaft 3 through the medium of a wrist-pin 17 and a pitman 18. The nippers consist of levers 16 16^a, loosely mounted on a pin 19, common to both and secured on the sliding plate. These levers are enlarged at one end, forming heads 20 and 20^a. The outer face of one of the heads and the inner face are grooved for the reception of the gripping-tools 21 21^a, which are held in position by clamping-plates 22 22^a and bolts passing through the plates and heads. It will be seen by reference to Figs. 2, 4, and 5 that the levers are so mounted on the pin 19 and the grooves are so formed in the heads 20 20^a that the gripping-tools 21 21^a form an angle with each other and also with the abutment 23, formed on the sliding plate 14. The grooves in the heads 20 and 20^a are not cut entirely across the heads, but a small body of metal 26 26^a is left at the ends of the grooves, as shown in Figs. 4 and 5. The bodies of metal are so located as to form abutments against which the ends of the tools 21 21^a will bear, while permitting of the projection of the operative or gripping corners of the tools beyond the heads. As the tools 21 21^a are formed of steel rods rectangular in cross-section and as they are arranged at an angle to the face of the abutment 23, the corners of the bar at the ends thereof become the operative gripping edges and can be sharpened by simply grinding the ends of the bars. The stops or abutments 26 26^a regulate the projection of the tools, so that no skill is required for the adjustment in the heads.

The levers are yieldingly held in operative position by means of springs 24 24^a wound around the pin 19 and having one end secured to said pin. The opposite ends of the springs are connected to pins 25 25^a on the levers 16 16^a. This construction permits of the independent shifting of either of the levers.

As the heads of the levers overlap only par-

tially, the nuts on the clamping-bolts of either of the levers are accessible for the adjustment of the gripping-tools.

It will be observed the gripping edges of the tools are formed by surfaces at or approximately at right angles to each other, and that therefore such edge is sufficiently blunt to avoid liability of cutting through the surfaces of the wire, and it is further characteristic of my improvement that the gripping-tools 21 21^a are so arranged in the levers 16 16^a and that the latter are pivotally mounted in such relation to the abutment 23 that a line $x x$ passing through the pivotal point of the levers and the biting or gripping edge of the tools will form an angle of nearly ninety degrees with the face of the abutment or the wire being fed. By reason of this arrangement the tools will be caused to grip the wire by the feed movement of the feed mechanism, and that the greater the resistance presented by the wire to onward movement with the feed mechanism the firmer grip will be taken by the tools. Hence the springs 24 24^a need have only sufficient strength to cause the tools to bear on the wire, thereby avoiding all scratching or abrasion of the wire by the tools during the return movement of the feed mechanism.

I claim herein as my invention—

1. A feed mechanism for wire-working machines having in combination a reciprocating plate provided with an abutment, a lever pivotally mounted on the plate, a tool carried by the plate the lever and tool being so mounted and arranged that a line passing through the pivotal point of the lever and the gripping edge of the tool will form an angle of nearly ninety degrees with the face of the abutment and a spring for holding the tool in operative relation to the abutment, substantially as set forth.

2. A feed mechanism for wire-working machines, having in combination a reciprocating plate provided with an abutment, a lever pivotally mounted on the plate, a tool rectangular in cross-section and having its inner or operative end flat, the lever being so mounted and tool so arranged that a line passing through the pivotal point of the lever and the gripping edge of the tool will form an angle of nearly ninety degrees with the face of the abutment and a spring for holding the tool in operative relation to the abutment, substantially as set forth.

3. A feed mechanism for wire-working machines, having in combination a reciprocating plate provided with an abutment, two levers loosely mounted on a common pin, tools secured in such position in the heads of the levers that one of said tools is at approximately right angles to the other tool, and the faces of the tools adjacent to the abutment will form an acute angle therewith, and springs for holding the levers in operative positions, substantially as set forth.

4. A feed mechanism for wire-working machines having in combination a reciprocating plate provided with an abutment, a head pivotally mounted on the plate and provided with a groove having a stop at one end, a tool rectangular in cross-section so mounted on the head that the faces forming the gripping edge will form an acute angle with the face of the abutment and a spring for holding the tool in operative position, substantially as set forth.

5. A feed mechanism for wire-working machines, having in combination a reciprocating plate provided with an abutment, a pin secured to said plate, two levers loosely mounted on said pin, springs surrounding the pin and having one end secured thereto, the opposite ends of the springs engaging the levers and gripping-tools secured on said levers, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEORGE O. PAGE.

Witnesses:

GEO. D. DEAN,

GEO. A. PHILLIPS.