

No. 640,813.

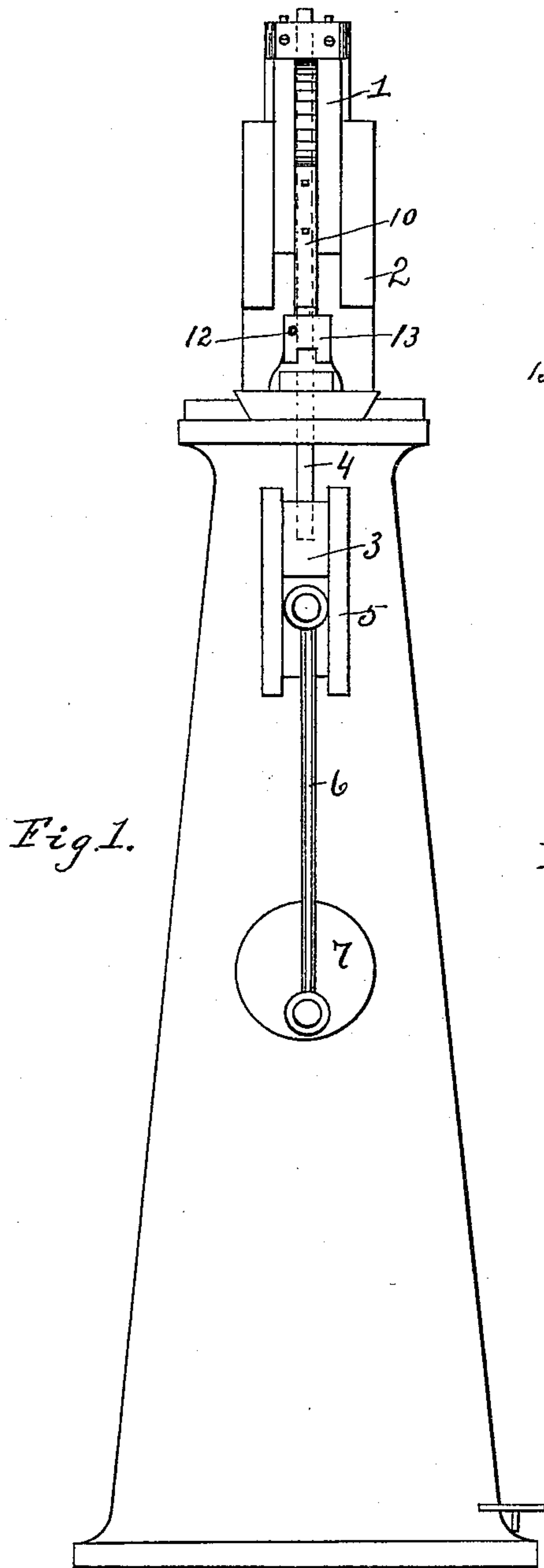
Patented Jan. 9, 1900.

O. G. RIESKE
STAPLING MACHINE.

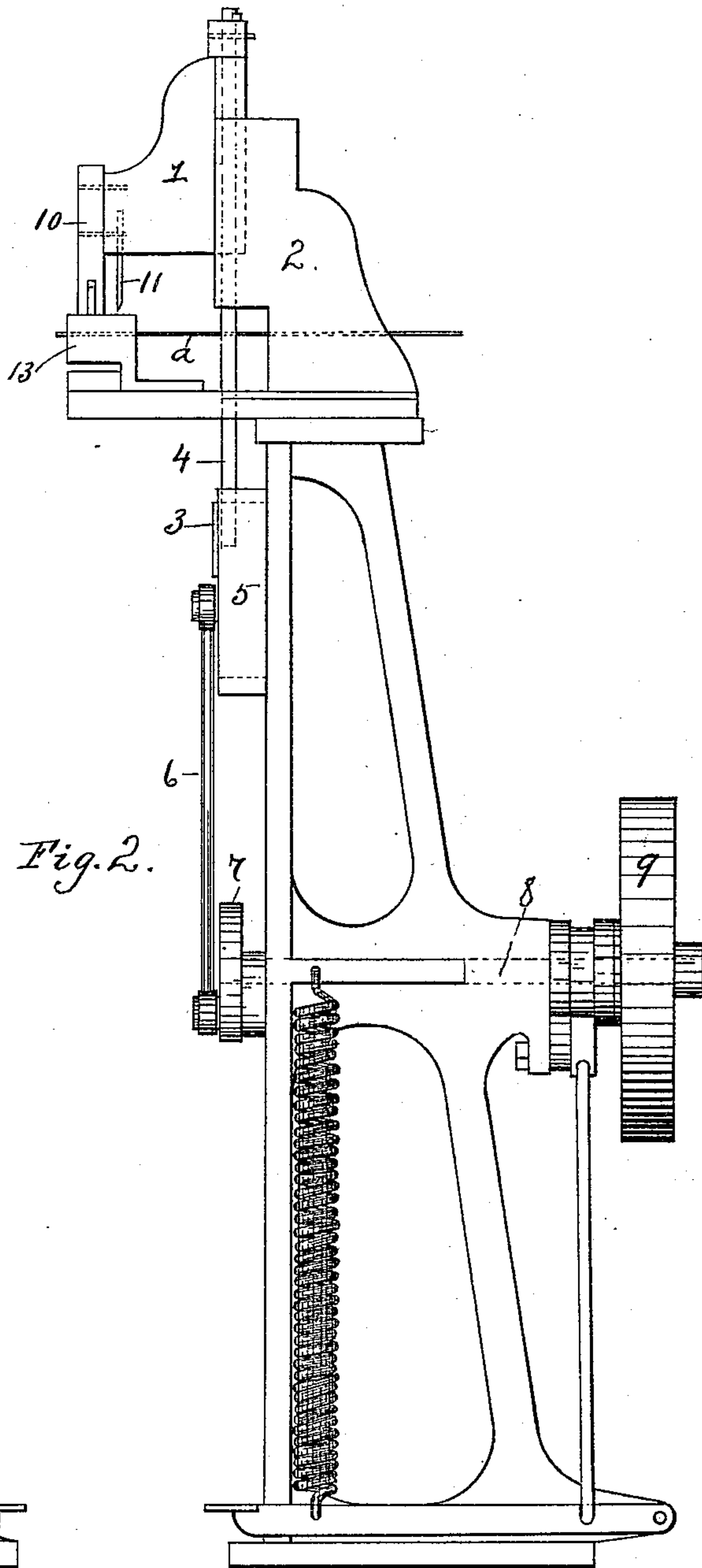
(Application filed Mar. 13, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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Inventor.
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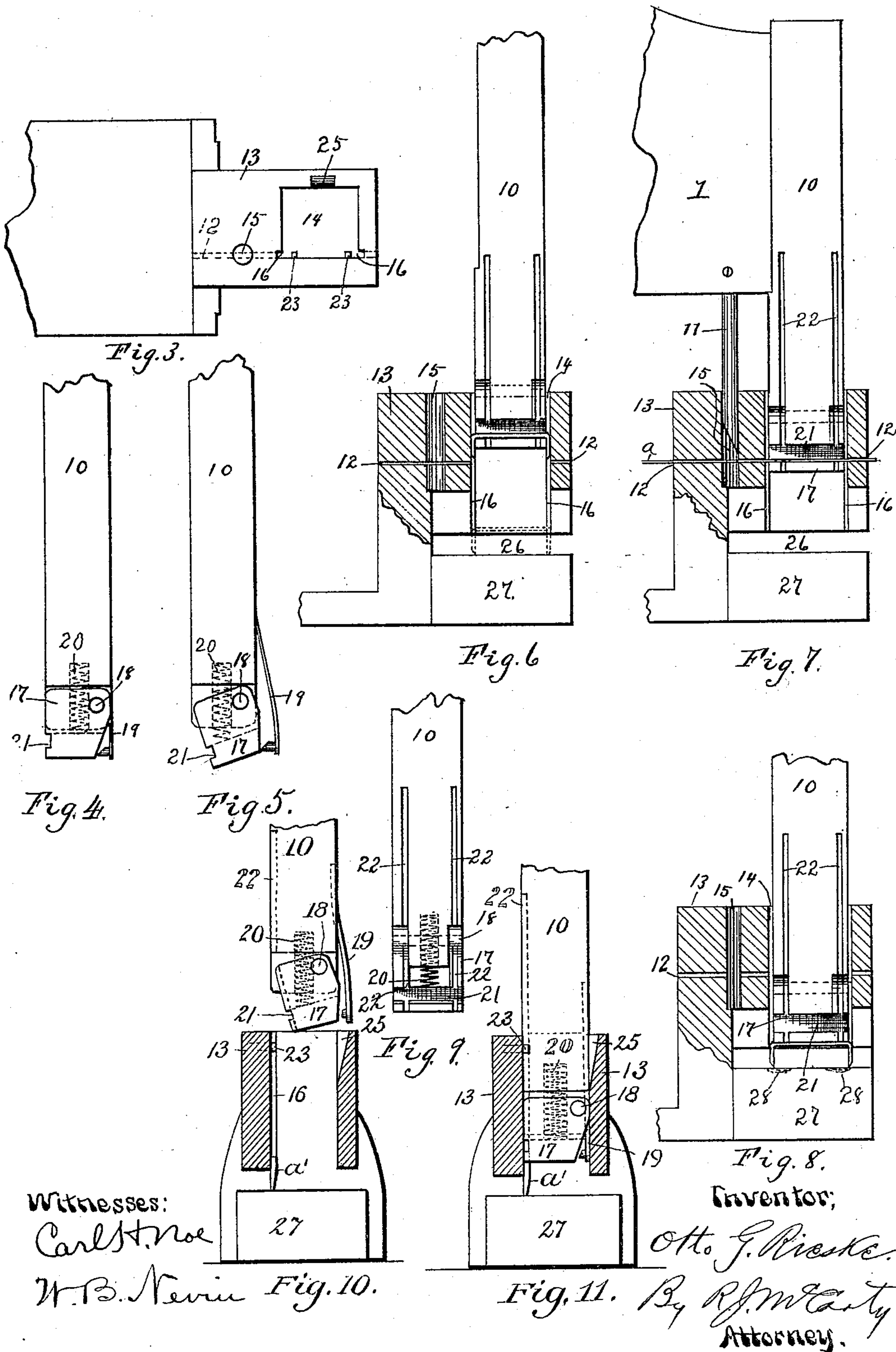
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(No Model.)

2 Sheets—Sheet 2.



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Fig. 11. By R. J. M. Carty
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UNITED STATES PATENT OFFICE.

OTTO GEORGE RIESKE, OF DAYTON, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO ERNST B. SCHNEIDER, OF ZANESVILLE, OHIO.

STAPLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,813, dated January 9, 1900.

Application filed March 13, 1899. Serial No. 708,895. (No model.)

To all whom it may concern:

Be it known that I, OTTO GEORGE RIESKE, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Stapling-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the numerals and letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in stapling-machines—such, for example, as are used in bookbinding, the manufacture of paper vessels, and a variety of other articles.

The object of the said invention is to provide a machine of the above type which is simple in construction, comparatively cheap in cost of construction, and which has an increased capacity for forming and driving staples.

As a preliminary to a detailed description of my invention, reference is made to the accompanying drawings, of which—

Figures 1 and 2 are front and side elevations of my improved stapling-machine. Fig. 3 is a top plan view of the staple-forming plate and adjacent portion of the frame. Figs. 4 and 5 are side elevations of the plunger. Fig. 6 is a view showing the staple-forming plate in section and the plunger in elevation. A staple is formed when the plunger is in this position and is about to be released thereby. Fig. 7 is a similar view showing the staple-plunger in position to begin the formation of a staple. Fig. 8 is a similar view showing the plunger in the act of driving the staple formed. Fig. 9 is a front elevation of the lower portion of the plunger. Fig. 10 is a side elevation of the staple-plunger, in which is shown the position thereof after the formation and release of a staple. Fig. 11 is a similar view showing the plunger descending upon a staple to drive it.

Throughout the specification similar reference characters indicate corresponding parts.

The reciprocable slide 1 moves in a vertical guideway in the head 2, and is connected

with a lower slide 3 by a connecting-rod 4. The slide 3 is inclosed in a vertical guideway 5 on the frame and is given reciprocable movement by means of pitman 6 and crank-wheel 7. The latter part is keyed or otherwise rigidly attached to the shaft 8, which is driven by belt-pulley 9. The plunger 10 is rigidly secured to the slide 1, as is also the wire-cutter 11. The wire *a* is fed through the opening 12 in the plate 13 by means of any suitable wire-feeding devices. This opening 12 is shown in Fig. 3 to extend across the vertical opening 15 in plate 13, into which the cutter 11 moves, and across the front side of opening 14, into which the plunger 10 moves. The front extremity of the opening 14 terminates on each side in two vertical slots or grooves 16 16, which extend from top to the bottom of the plate. The lower end 17 of the plunger is pivoted in the manner shown by pin 18, and is controlled during certain periods of its movement by springs 19 and 20, the latter spring having the greatest strength. The pivotal end 17 of the plunger has a transverse wire-slot 21, which when in line with the opening 12 in the plate 13 receives the wire *a* as it is threaded in. This pivotal end of said plunger and the portion of said plunger adjacent thereto are provided with two vertical grooves 22 22 on their front side, into which pins 23 23, projecting from the plate 13, enter. The plunger, rising from the position shown in Fig. 7 to that shown in Fig. 6, forms a staple. In this upward movement of said plunger from the position in Fig. 7 the spring 19 is allowed to expand, as in Fig. 5, by moving up into the slot 25 in the rear side of the plate 13. (See Figs. 3, 10, and 11.) The action of spring 20 being greater moves the pivotal end 17 of the plunger to the position shown in Fig. 5 to dislodge the staple therefrom. The removal of the staple is in the meantime facilitated by the pins 23 23. It will be understood that when the pivotal end 17 of the plunger is under the control of spring 20, as shown in Figs. 5 and 10, the staple *a'* is released from the transverse groove 21 by the pivotal end 17 moving away from said staple, as shown in Fig. 10. This leaves the staple unsupported in the grooves 16 16, and the same drops by gravity to the

positions shown in Figs. 10 and 11. The pivotal end 17 is moved out, as in Fig. 11, by spring 20 when the plunger moves up out of the guide-plate 13. The pivotal end 17 is then solely under the control of the spring 20, which is the stronger of the two springs, as hereinbefore stated. As the plunger descends into the guide-plate spring 19 is closed against it by entering slot 25 in the plate, and the pivotal end 17 is thus moved into line with the plunger and over the staple, with which it engages when the plunger descends. The prongs of the staple *a* lie in the grooves 16 16, and as the plunger descends upon the staple with the pivotal end, as in Fig. 4, the staple is driven into the material to be stitched. The said material is placed in the opening 26. The ends of said staple are turned in and clenched by the points being turned inwardly as they reach the cavities 28 in the block 27. As the plunger in its down movement presents the transverse wire-slot 21 in line with the opening 12, the wire *a* is instantly fed through said opening, and at the completion of each feed of the wire the cutter 11 cuts the wire, the piece thus cut each time being of sufficient length to form a staple.

Having described my invention, I claim—

30 1. In a stapling-machine, the combination with a stationary guide-plate, of a reciprocable plunger, a pivotal end on said plunger which engages with the wire upon its upward movement and forms a staple therefrom, a spring to hold said pivotal end in line with the plunger when said plunger is moving in the guide-plate, and a stronger spring controlling said pivotal end when the plunger moves out of said guide-plate.

40 2. In a stapling-machine, the combination

with a guide-plate, of a reciprocable plunger movable therein, a pivotal end on said plunger having a wire-engaging slot, a spring controlling said pivotal end to release a staple when the plunger moves out of the guide-plate, and another spring to hold said pivotal end in position to drive said staple, substantially as described.

3. In a stapling-machine, the combination with a stationary plate having a wire-opening therein, of a reciprocable plunger movable in said plate, a pivotal end on said plunger, a transverse wire-slot in said pivotal end to receive a wire when said wire-slot is brought in line with the wire-opening in said stationary plate, a wire-cutter for cutting said wire into suitable lengths for staples, and means for dislodging the staples from said pivotal end, substantially as specified.

4. In a stapling-machine, the combination with a stationary plate having a horizontal wire-opening, and vertical openings therein, of a reciprocable staple-plunger, and a wire-cutter simultaneously movable in said vertical openings, the said plunger having its lower end pivoted, a transverse wire-slot in said pivoted end, said wire-slot being adapted to receive wire when brought in line with the wire-opening in the stationary plate when the plunger moves downward, and springs adapted to hold the said pivoted end of the plunger in operative positions, substantially as specified.

In testimony that I claim the foregoing as my own I hereunto affix my signature in the presence of two witnesses.

OTTO GEORGE RIESKE.

Witnesses:

R. J. McCARTY,
WILLIAM POHLMANN.