

No. 718,996.

PATENTED JAN. 27, 1903.

W. FRANZ.
RIVET CUTTER.

APPLICATION FILED OCT. 15, 1902.

NO MODEL.

Fig. 1.

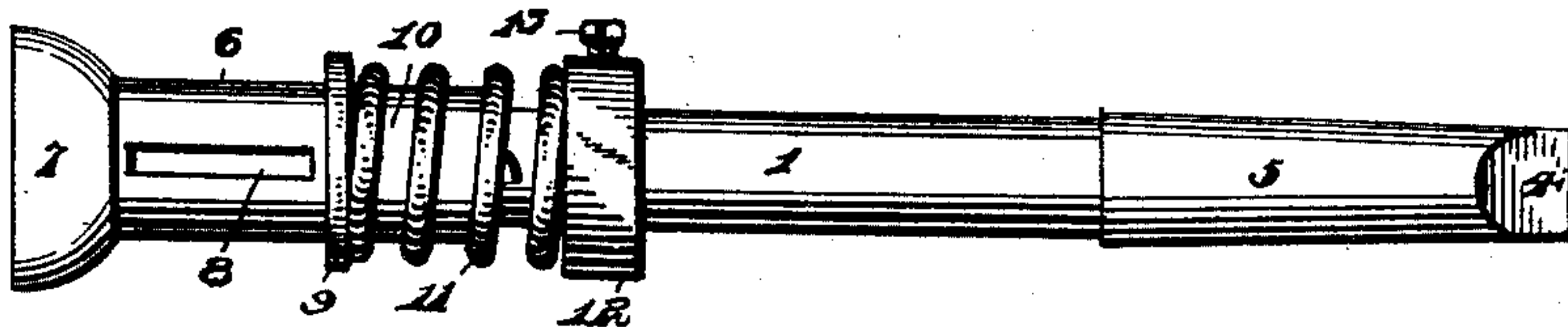


Fig. 2.

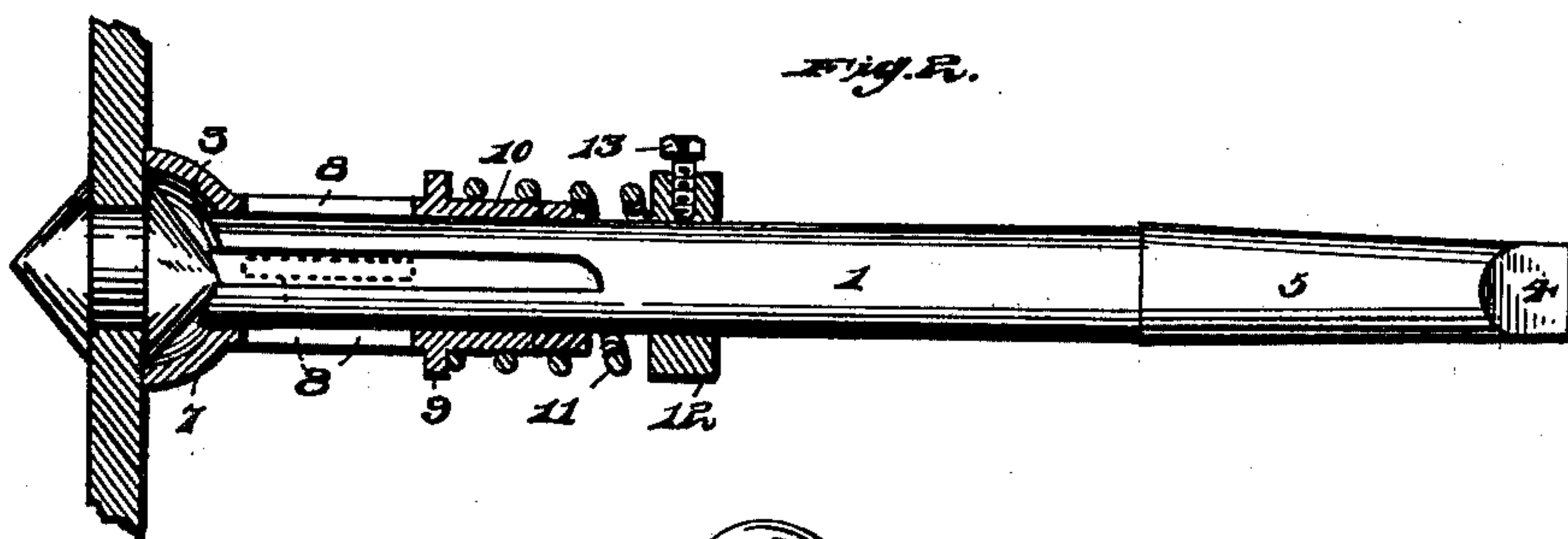


Fig. 3.

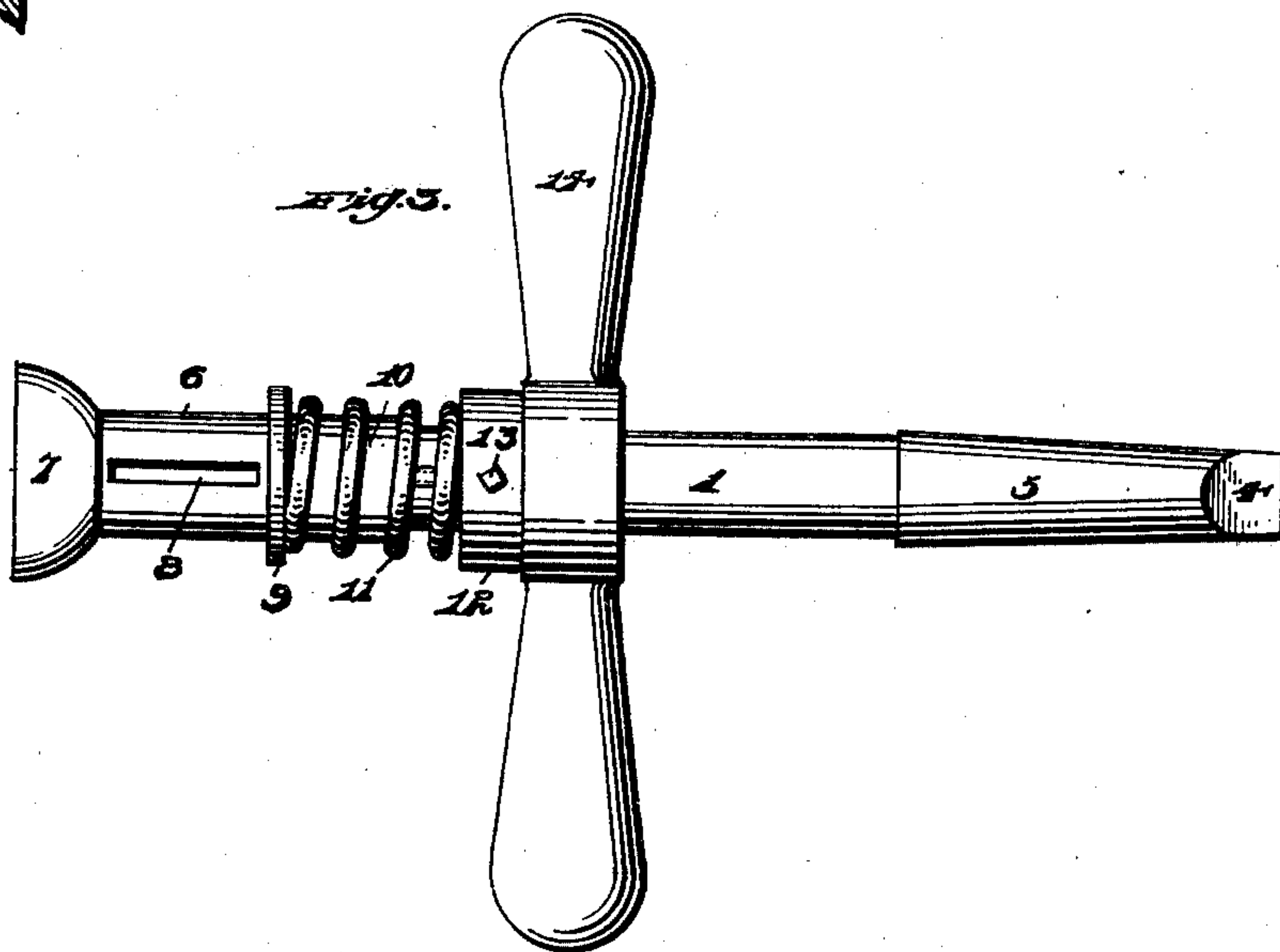


Fig. 4.

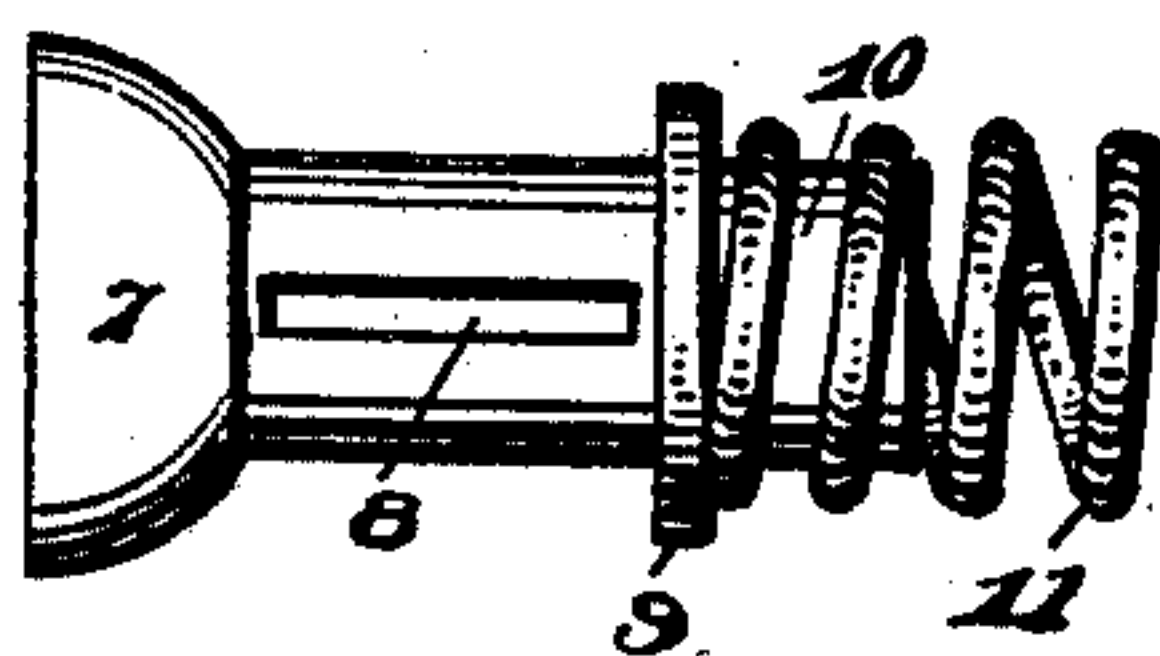


Fig. 5.

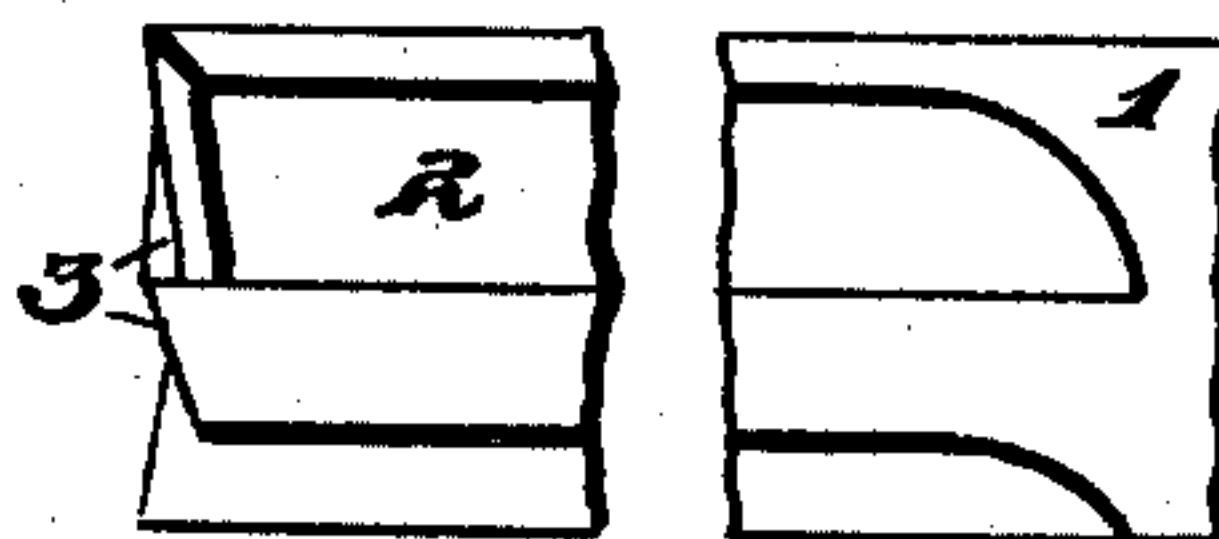
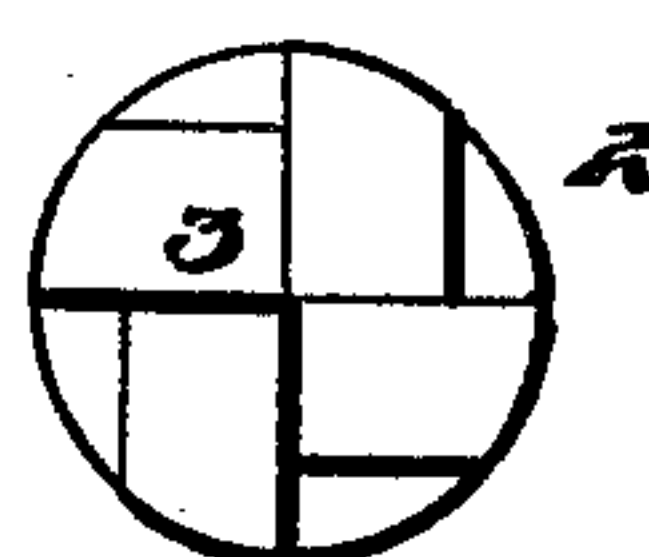


Fig. 6.



Witnesses:

J. C. Appelman,
M. E. Schley

Inventor

W. Franz.

By

John Roland
Att'y

UNITED STATES PATENT OFFICE.

WILLIAM FRANZ, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM MAXWELL, OF PITTSBURG, PENNSYLVANIA.

RIVET-CUTTER.

SPECIFICATION forming part of Letters Patent No. 718,996, dated January 27, 1903.

Application filed October 15, 1902. Serial No. 127,382. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FRANZ, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rivet-Cutters, of which the following is a specification.

My invention relates to an improvement in rivet-cutters.

10 The object of my invention is to provide a rivet-cutter that will effectually cut off the head of the rivet without defacing the sheet or spoiling the contour of the rivet-hole.

15 Another object resides in providing adjustable means on the cutter for regulating the length of the cut of the same.

Still another feature lies in providing suitable means for conveying the cuttings away from the edge of the cutter.

20 Furthermore, the object of my invention is to provide a tool that may be easily operated without mechanical skill.

25 Finally, the object of my invention is to provide a device that will be efficient, strong, and durable and one that will be comparatively inexpensive to produce and one in which the several parts will not be liable to get out of working order.

30 With the above and other objects in view the invention consists in the novel details of construction, a preferable embodiment of which is described in the specification and illustrated in the drawings, wherein—

35 Figure 1 is a side elevation view of the cutter. Fig. 2 is a similar view, partly in section. Fig. 3 is a side elevation view showing a handle for holding the cutter against the work. Fig. 4 is a detail view of the sleeve and the spring. Fig. 5 is a side view of the 40 cutter proper, and Fig. 6 is an end view of the same.

45 In the drawings the numeral 1 designates the cutter, which is formed with longitudinal grooves 2 extending from the cutting edge 3 along the cutter for about one-third its length. The outer end 4 of the cutter is flattened or squared, and a portion 5 is tapered in order that the cutter will fit into a socket, so that it may be connected with a flexible shaft, that 50 the cutter may be revolved at a very high rate of speed.

A sleeve 6 is loosely mounted on the cutter 1, so that the latter may revolve freely therein. The sleeve is provided with a bowl-shaped portion 7 on its outer end, which is adapted 55 to fit over the head of the rivet. The bowl-shaped portion 7 affords an enlarged bearing-surface, and thereby centers and steadies the tool when it is placed over the rivet and against the sheet from which the rivet is to be 60 removed. The sleeve 6 is provided with longitudinal slots 8, which register with the grooves 2 of the cutter. It will be readily perceived that the metal cut from the rivet by the cutting edge 3, or the "cuttings," will 65 be forced along the grooves 2 and will fall or be thrown out through the slots 8 in the sleeve. Thus the cuttings are carried away from the cutting edge, allowing it free action and preventing it from becoming choked. A ring 9 is 70 preferably formed integral with the sleeve at a point intermediate the upper ends of the slots 8 and the inner end or boss 10 of the sleeve, so as to leave a portion of the sleeve projecting inwardly beyond the ring 9. The inner end or 75 boss 10 of the sleeve is adapted to receive a portion of a coiled spring 11, which projects inwardly from the boss, so as to overlie a portion of the cutter.

80 A collar 12 is loosely mounted on the cutter and is adapted to be adjusted thereon and held in its adjusted position by a set-screw or any other suitable means 13. The spring 11 bears against the collar 12 and is adapted to be compressed between the ring and the ad- 85 justable collar when pressure is applied to the cutter, so as to cushion the cutter and regulate the feed of the same and to throw the cutter away from the sheet when the pressure on the cutter is released. The boss 10 90 forms a stop against which the collar abuts when pressure is applied to the cutter. Thus it will be seen that the longitudinal movement of the cutter is limited to the distance between the boss and the collar, so that if 95 the collar is adjusted to vary the distance between itself and the boss the longitudinal movement or the length of the cut of the cutter will be varied. In its normal position the edge 3 of the cutter comes approximately 100 flush with the bottom of the bowl 7, as shown in Fig. 2. The collar 12 is adjusted on the

cutter a distance from the boss 10 equal to the depth of the bowl 7, so that when the cutter is forced inward the collar will abut against the boss 10 and prevent the cutter from cutting into the sheet or the rivet-hole. 5 When the cutter is sharpened, the collar 12 will have to be moved back to compensate for the shortening of the cutter. I propose to use different-sized cutters for different-sized rivets. This is necessary owing to the difference in diameter of the heads of the various rivets. 10 I employ a cross-handle 14, fitting loosely on the cutter and bearing against the collar 12, by which the workmen may manipulate the tool. 15 When it is desired to take down a tank or a boiler or the like, the proper-size cutter is selected. Say the rivets were three-quarter-inch rivets, then a three-quarter-inch cutter would be employed. The cutter is coupled with a flexible shaft, which causes it to revolve at a very high rate of speed. The operators (I preferably employ two, although 25 one may suffice) grasp the tool by the cross-handle 14 and place the bowl 7 over the rivet-head, then applying their weight against the handle force the cutter inward against the tension of the spring 11. The cutter rapidly revolving will cut the head from the rivet. 30 When the cutter reaches the shank of the rivet, the collar 12 will abut the boss 10 and prevent further longitudinal movement of the cutter. The pressure is now released from the handle 14, and the spring 11 expand-

ing throws the cutter backward and away from the work, when the tool is removed and the rivet punched out. It will be noted that while the cutter is being fed forward and cutting the head of the rivet off the cuttings will 40 be forced backward along the grooves 2 and out through the slots 8.

I do not care to limit myself to the exact details of construction herein set forth, as I may make various changes in the same without departing from the spirit of my invention. 45

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

1. In a rivet-cutter, a sleeve having a flaring end, a boss formed on the sleeve, a revoluble cutter movable in the sleeve, a collar adjustable on the cutter, and a spring carried by the sleeve and adapted to be compressed between the collar and the sleeve; substantially as described. 50 55

2. In a rivet-cutter, a sleeve having a flaring end, ring formed on the sleeve, a boss formed on the end of the sleeve, a revoluble cutter movable in the sleeve, an adjustable collar mounted on the cutter, a cross-handle fitted on the cutter, and a spring carried by the boss; substantially as described. 60

In testimony whereof I affix my signature, in the presence of two witnesses, this 14th day of October, 1902. 65

WILLIAM FRANZ.

Witnesses:

JOHN NOLAND,
M. B. SCHLEY.