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PATENTED MAY 29, 1906.

E. M. SMITH.
STAPLE EXTRACTOR AND HOLDER.
APPLICATION FILED JAN. 31, 1905.

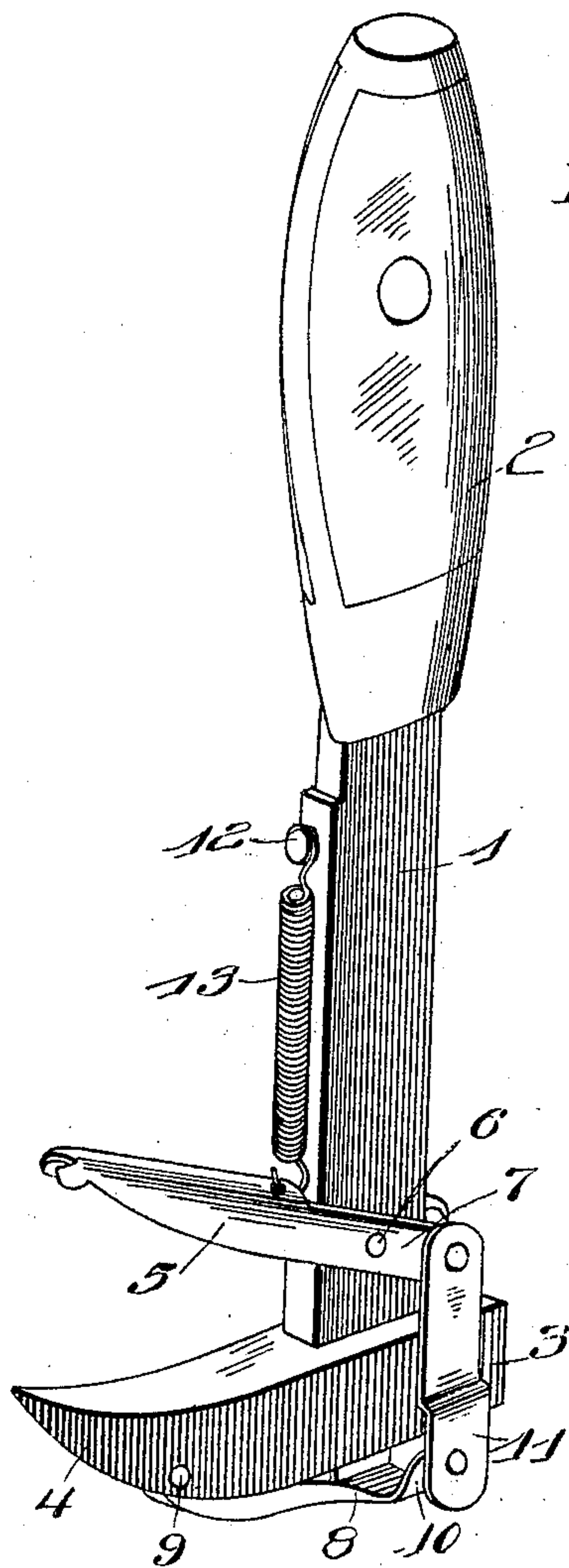


Fig. 1.

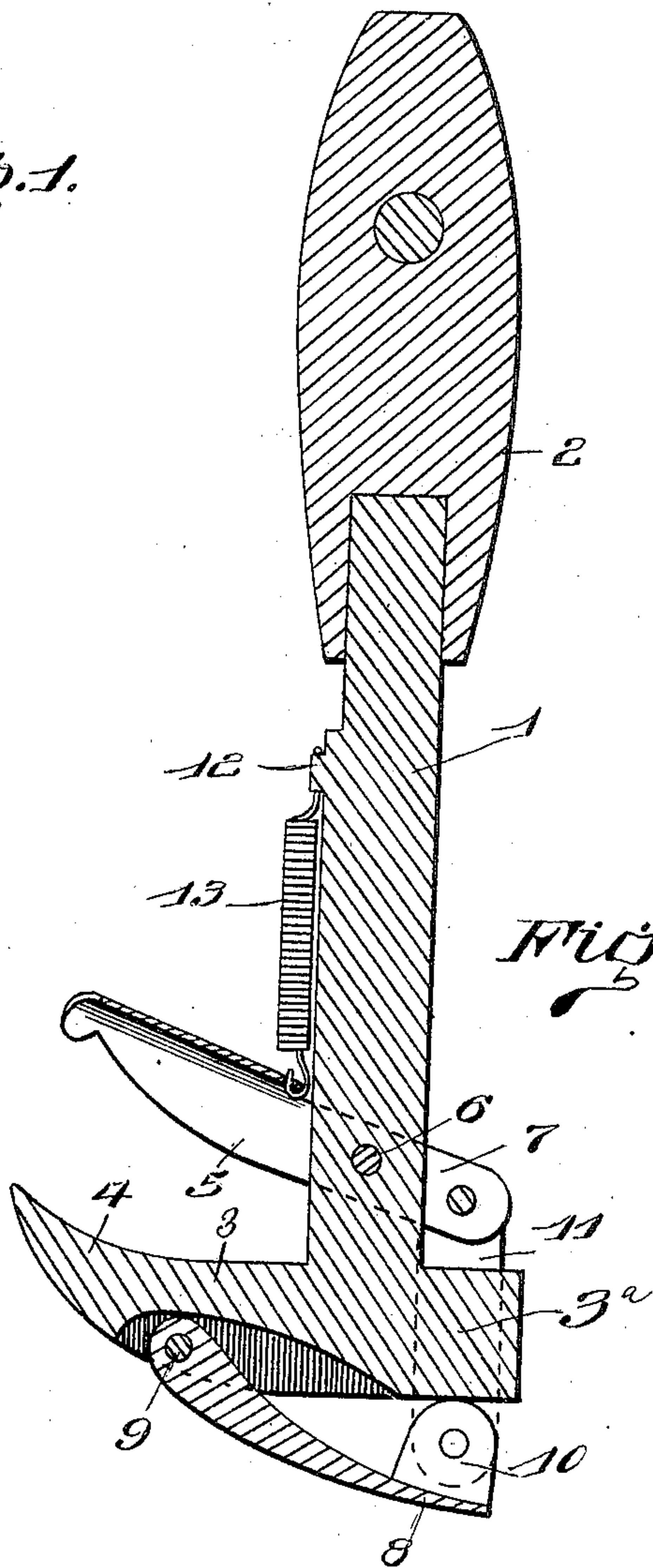


Fig. 2.

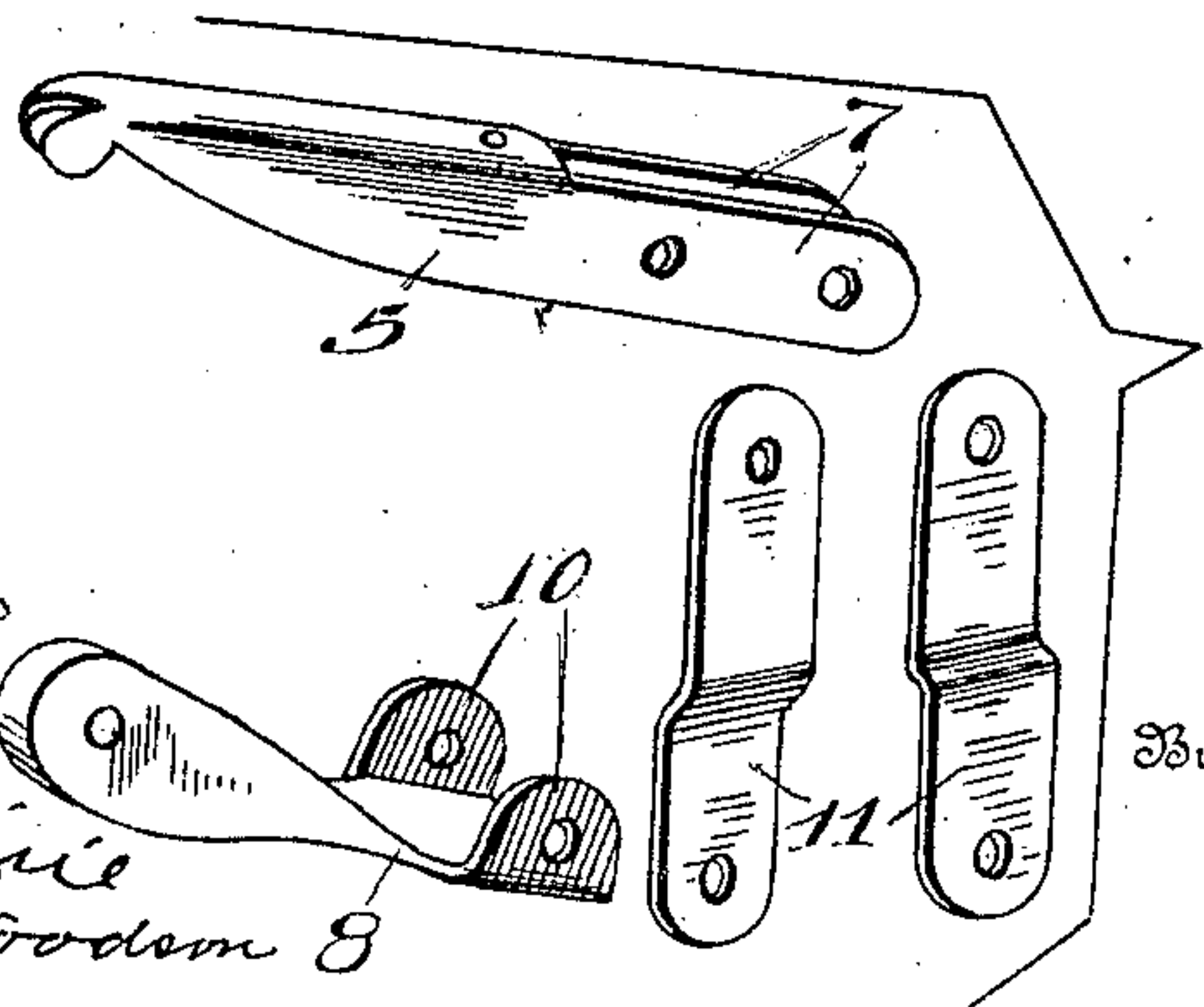


Fig. 3.

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Witnesses

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EDWARD M. SMITH, OF PLEVNA, KANSAS.

STAPLE EXTRACTOR AND HOLDER.

No. 821,893.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed January 31, 1905. Serial No. 243,583.

To all whom it may concern:

Be it known that I, EDWARD M. SMITH, a citizen of the United States, residing at Plevna, in the county of Reno and State of Kansas, have invented certain new and useful Improvements in Staple Extractors and Holders, of which the following is a specification.

This invention relates to improvements in extractors for pulling staples and similar fastenings, the object of the invention being to provide a simple means for holding the staple as it is withdrawn from the part to which it is applied, the invention obviating the likelihood of dropping of the fastener and the necessity of leaning over and picking it up after the same has been extracted.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a detail view showing the parts which comprise the holding device proper.

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 staple-extractor may be of any type suitable for the purpose of the invention, and it consists, preferably, of a shank 1, provided at one end with the handle 2, the opposite end of the shank having the transverse head 3 thereon for engagement with the staple in extracting the same. The head 3 preferably extends laterally from the shank 1 and curves toward its outer ends, as shown at 4, terminating in a point readily adapted to be forced between the staple and the part in which it is driven in order to quickly withdraw the same. The end of the head 3 opposite that which is curved, as above described, projects laterally from the shank 1 and forms a butt 3^a, which may be used as a hammer in driving nails or staples or similar fastenings.

The attaching device which constitutes the means for holding the staple after it has been withdrawn comprises, essentially, an engaging member 5, pivoted to the shank 1, 60 as indicated at 6, said engaging member forming a jaw virtually cooperating with the head 3 so as to positively engage the outer or curved portion of the staple as the tool is operated to withdraw the fastener. The member 5 is preferably bifurcated at one end thereof to form spaced members 7, which embrace the shank 1 upon opposite sides and project outwardly from the shank above the hammer-butt 3^a, the pivot 6 passing through 70 the shank and the members 7 pivotally securing the engaging member 5 in position. The operation of the member 5 in extracting the staple is entirely automatic, and for this purpose the head 3 is provided upon the side 75 thereof which ordinarily bears against the part in which the staple is driven with a pressure-plate 8, one end of which is reduced and pivotally attached to the head, as shown at 9. The other end of the plate 8 is spaced from 80 the head normally and is formed with side lugs 10, which are pivotally connected with the member 5 by means of links 11, each of which links has pivotal connection at one end with a lug 10 and at the other end with 85 one of the spaced members 7. The links 11 are arranged upon opposite sides of the hammer-butt 3^a and slide in contact therewith, so as to reinforce the pivotal mounting of the jaw or staple-engaging member 5, said links 90 connecting with the portions of the members 7 which project outwardly from the shank 1, so that the links operate longitudinally of the shank in their movement under the actuation of the pressure-plate 8. The links 11 95 are thus disposed advantageously and do not interfere in any way with the use of the part 3^a as a hammer under certain conditions of service. A projection 12 extends from the shank 1 near the handle 2, and a coil-spring 100 13 is connected at one end with the projection 12 and at its opposite end with the engaging member 5, the normal tension of this spring being sufficient to normally hold the engaging member away from the head 3. When 105 the engaging member 5 is spaced from the head 3, the pressure-plate 8 is likewise spaced from the head at one end—namely, at the portion of said plate which will bear against the post or other support in which 110 the staple is driven. The outer extremity of the member 5 is also bifurcated, so that the

point of the head 3 will snugly fit between the adjacent bifurcated portions of the member 5. Further, the outer end of the extremity of the member 5 adjacent the points of the head 3 is transversely notched, so that the curved portion of the staple will be effectively engaged thereby.

In its actual operation the tool is gripped in the usual manner and the point of the head 3 is forced between the staple and the part in which it is driven. As soon as pressure is applied to the handle to gain the necessary leverage to extract the staple the pressure-plate 8 is of course forced against the head 3, the tension of the spring 13 being overcome. Such movement of the pressure-plate 8 causes the engaging member 5 to move into engagement with the head 3 and with the staple, which now encircles the pointed portions of the head, so that as the staple is withdrawn from the part to which it is applied the member 5 is in engagement therewith and the said staple will not fall to the ground or be displaced and give rise to inconvenience, which has been before mentioned.

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

1. A tool of the character specified comprising a shank having a cross-head at one end tapered to a point and inwardly curved at one of its ends, a pressure member arranged exterior to the cross-head and pivoted at one end to the tapered portion thereof, a gripping member arranged crosswise of the shank and having an end portion bifurcated to embrace said shank and pivoted thereto and adapted to cooperate with the tapered end of the said cross-head, link connections between the gripping and pressure members embracing opposite sides of the butt-end of the cross-head, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

2. A tool of the character set forth comprising a shank having a cross-head tapered to a point and inwardly curved at one of its ends, a pressure member located exterior to the cross-head and pivoted at one end to the tapered end portion thereof and having trans-

versely-spaced lugs at its opposite end to embrace and clear the sides of the cross-head, a gripping member arranged crosswise of the shank upon the inner side of the cross-head and having an end portion bifurcated to embrace said shank and pivoted thereto and having the opposite end provided with a claw for cooperation with the pointed end of the cross-head, links embracing opposite sides of the butt portion of the aforementioned cross-head and pivoted at one end to the bifurcations of the gripping members and having pivotal connection at their opposite ends with the lugs of said pressure member, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

3. A tool substantially as herein set forth comprising a shank having an integral cross-head at one end recessed upon its outer side and having an end portion tapered to a point and inwardly curved, a pressure member arranged exterior to said cross-head and having an end portion pivoted within the recess provided in the outer side of said cross-head and having its opposite end formed with transversely-spaced lugs to embrace and clear the sides of the butt portion of the cross-head, a gripping member having an end portion bifurcated and embracing the shank and pivoted thereto and having its opposite end provided with a claw for cooperation with the pointed end of said cross-head, the latter being arranged between the gripping end pressure members, links embracing opposite sides of the butt portion of the cross-head and having their opposite ends pivoted to, respectively, the bifurcations of the gripping member and the lugs of the pressure member, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

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

EDWARD M. SMITH. [L. s.]

Witnesses:

CHAS. M. COLEMAN,
W. S. JACKSON.