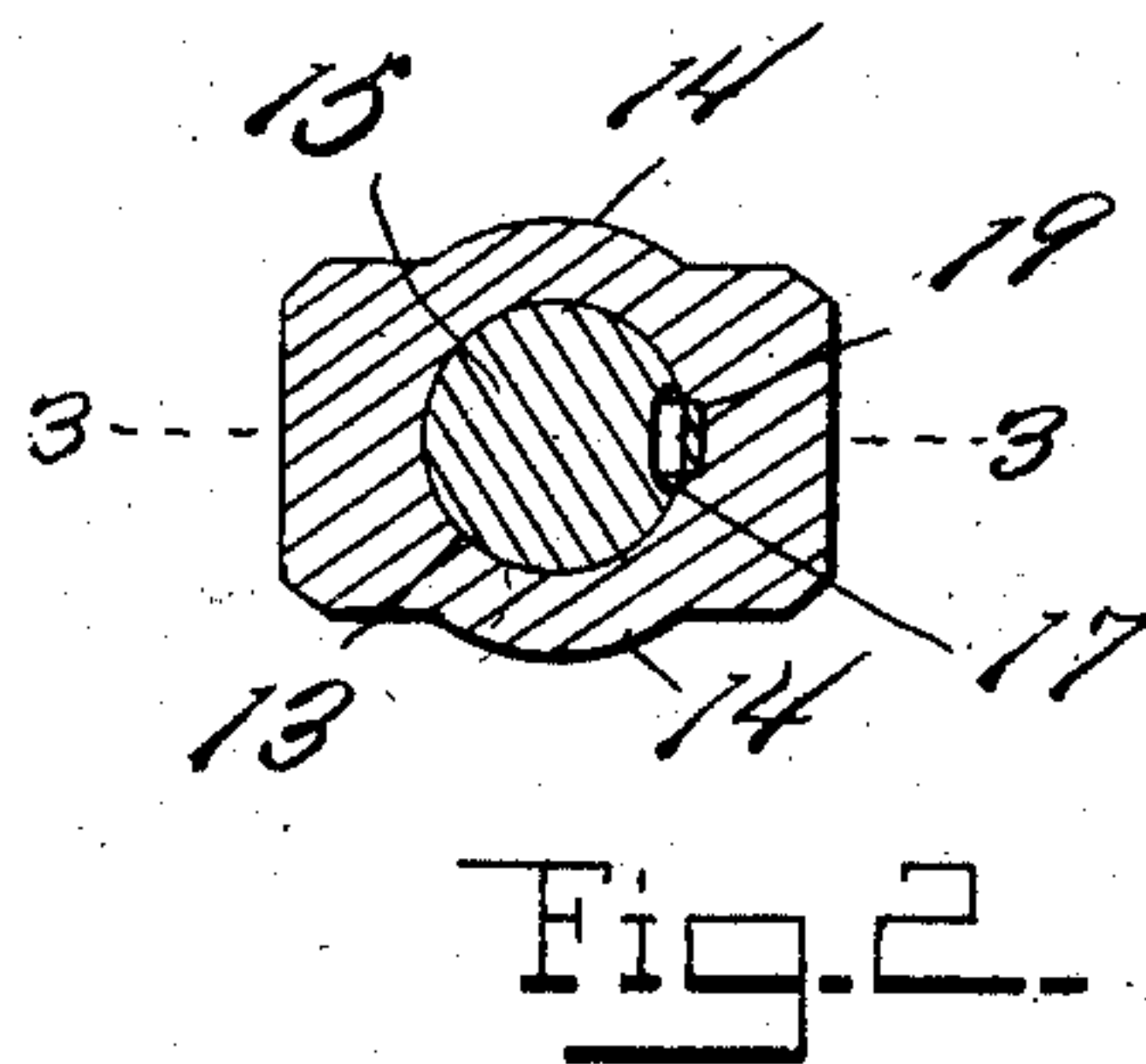
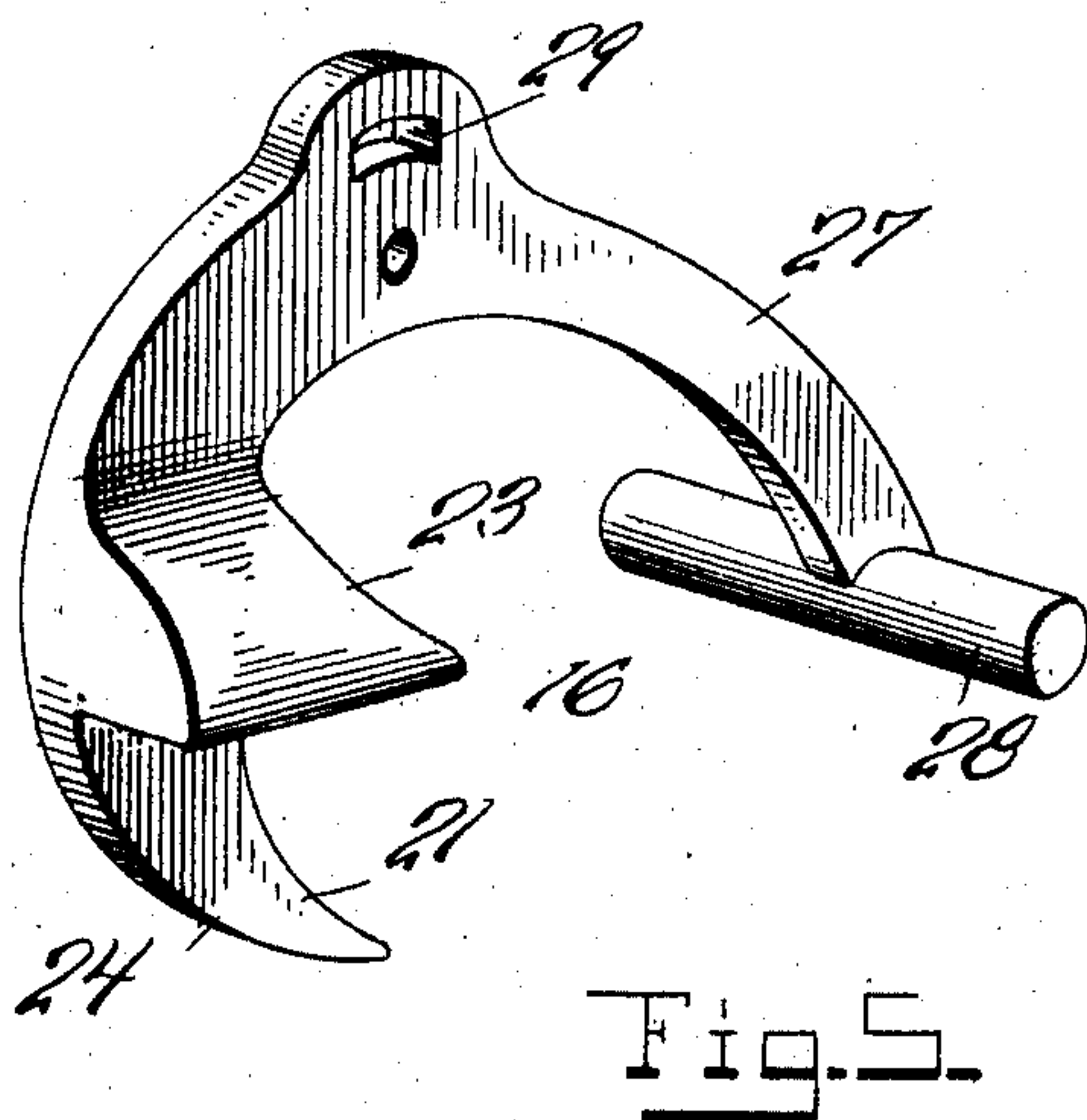
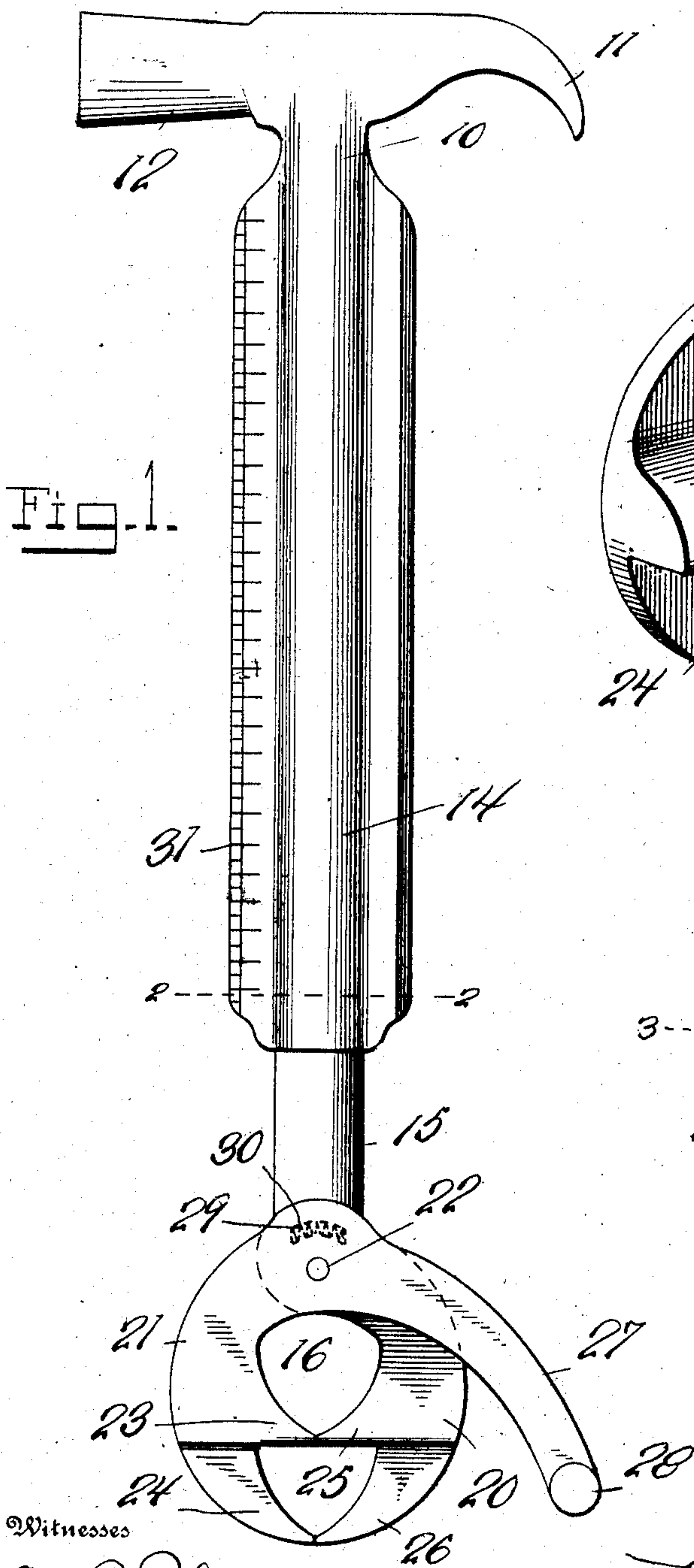


No. 864,153.

PATENTED AUG. 27, 1907.

H. W. BOLTZ.  
COMBINATION TOOL.  
APPLICATION FILED JULY 19, 1906.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

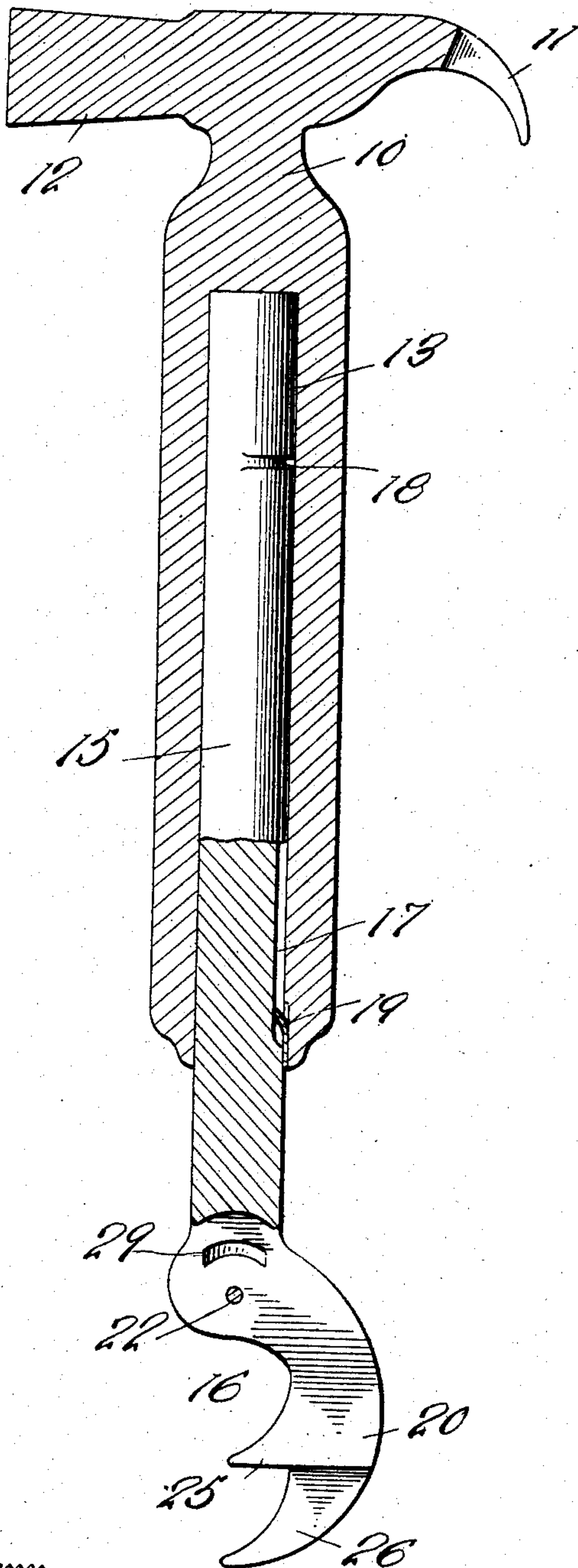


Fig. 3.

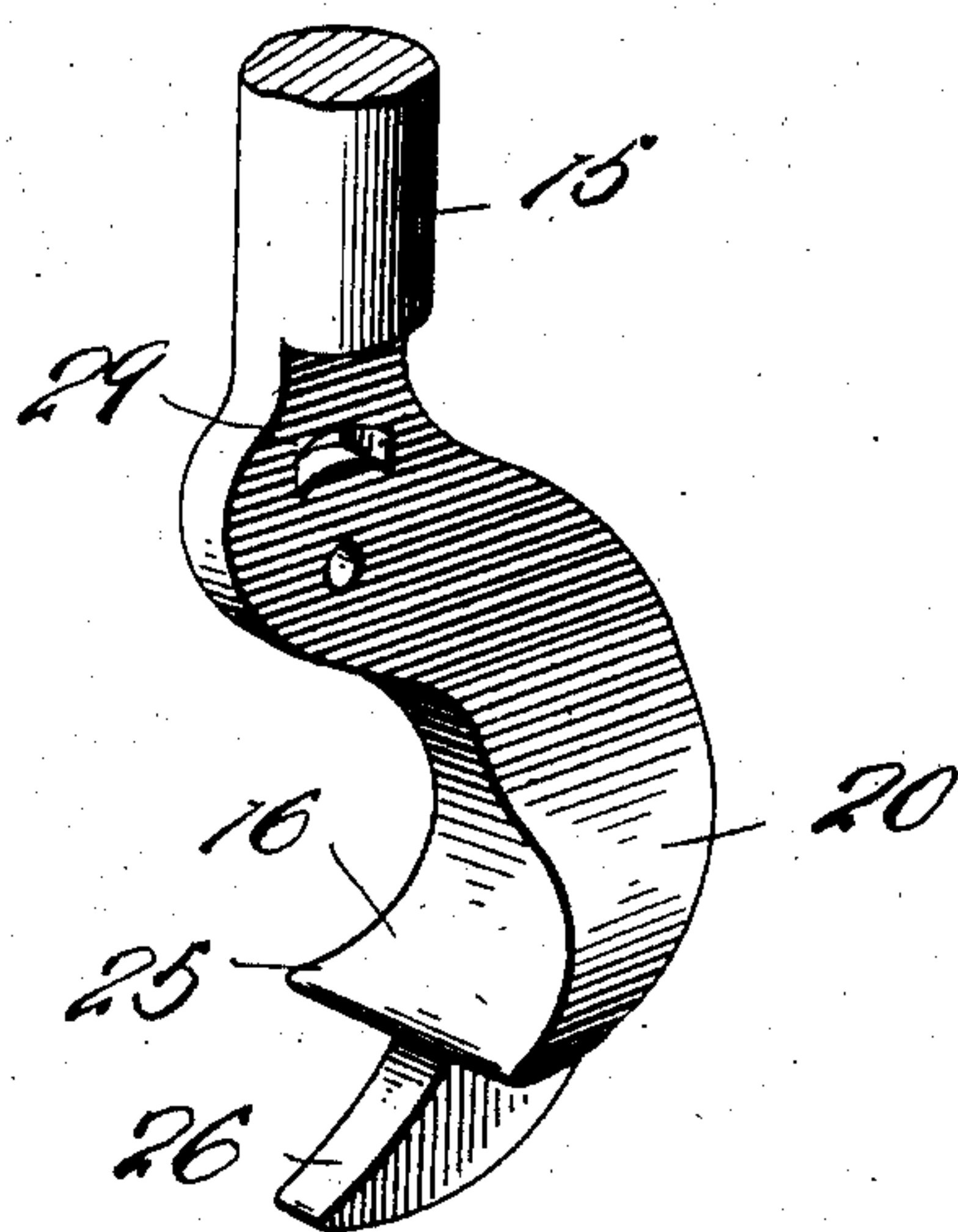


Fig. 4.

Witnesses

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# UNITED STATES PATENT OFFICE.

HARRY W. BOLTZ, OF LEBANON, PENNSYLVANIA.

## COMBINATION-TOOL.

No. 864,153.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed July 19, 1906. Serial No. 326,897.

*To all whom it may concern:*

Be it known that I, HARRY W. BOLTZ, a citizen of the United States, residing at Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Combination-Tools; 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 ap-

10 This invention has reference to compound tools, and especially to that class of tools which combine in a single structure means for setting, driving, and extracting nails, tacks, brads, pins, and the like, the object of the invention being to provide a simple, convenient, and efficient tool of the above class, which is cheaply formed, easily assembled, and is durable.

15 To this end, the invention resides in a tool having a hollow handle and a head or body upon which are formed an extracting claw and a hammer, and a supplemental handle movable longitudinally within the hollow handle, the opposite end of the supplemental handle being provided with fixed and movable extracting jaws.

20 A further improvement consists in forming a longitudinal groove in the supplemental handle, and in providing a spring shoulder within the hollow handle for engagement in said groove, whereby the position of the hollow and supplemental handles may be adjusted with respect to each other, making it possible to in-

25 crease the leverage of either tool head at will. Further improvements consist in the provision upon the movable jaw attached to the supplemental handle, of a bearing-arm having transverse extensions at its free end, thus affording a greater bearing surface and

30 permitting the nails &c. to be drawn with greater facility. The invention further consists in the particular construction, combination, and arrangement of the several elements which form the tool, as hereinafter fully de-

35 scribed, specifically claimed and illustrated in the accompanying drawings, in which—  
Figure 1 is a front elevation of the tool. Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1. Fig. 3 is a longitudinal vertical section taken approxi-

40 mately on the line 3—3 of Fig. 2. Fig. 4 is a detail view of the fixed member of the nail-puller. Fig. 5 is a similar view of the movable member thereof.

Like parts are designated by corresponding reference numerals in the several views.

45 Referring more particularly to the drawings, the tool is shown as consisting of a tack-puller 10, the head of which is formed at opposite ends with the extracting-claws 11, and hammer 12, of any preferred description. The handle of the tack-puller is hollow, as indicated

50 by numeral 13, and is provided on opposite sides with

the similar semicircular longitudinal ridges 14, concentric with the opening 13 therein. Slidable longitudinally within said opening is the handle 15 of the nail-puller 16, said handle being provided with a longitudinal groove 17, the inner end of which is extended as at 18 transversely half-way around the handle portion 15 of the nail-puller, hereinafter referred to as the supplemental handle. Mounted in a seat formed in the bore of the hollow handle of the tack-puller at the lower end thereof is a spring dog 19, normally in engagement in the groove in said supplemental handle. It is thus possible to increase the leverage of both the tack-puller and the nail-puller by merely drawing out the supplemental handle the required distance, the dog 19 retaining said parts in such adjusted position. To withdraw the nail-puller and its handle entirely from the hollow handle of the tack-puller it is only necessary to slide the former outwardly until the dog 19 is in line with the transverse extension 18 of groove 17; the tack-puller is then turned to the right until the end of the groove extension is reached, when the dog will be pressed back between the curved face of the supplemental handle and that of the main or hollow handle, and the former then readily withdrawn, the groove extension being of gradually decreased depth to permit such action.

The nail-puller 16, as shown, comprises a fixed jaw or member 20 secured in any way to the supplemental handle 15 or formed integral therewith, if desired, and a movable member 21 fastened to the fixed member by a pivot bolt 22.

The movable member 21 is provided with a transverse jaw 23 and beak 24 coöperating respectively with a similar jaw 25 and beak 26, formed on the fixed member 20. The movable member is further provided with a curved arm 27, oppositely disposed with respect to the stem of jaw 23, the free end of said arm being provided at opposite sides with transverse extensions 28 forming an enlarged or extended fulcrum.

The jaws 23 and 25 and beaks 24 and 26 of the movable and fixed members respectively are normally held apart through the medium of a coiled spring 30 secured in corresponding curved recesses 29 formed in the inner face of said members.

The sides of the main handle may be calibrated as at 31, if desired.

The operation of the device will be apparent from the foregoing, and further description thereof is thought unnecessary beyond the statement that the extracting-claw 11 of the tack-puller is used in connection with tacks or small pins while the beaks 24 and 26 and jaws 23 and 25 of the nail-puller are used for withdrawing spikes, large nails, or brads.

Owing to the sliding adjustment of the supplemental handle within the main handle, the leverage of either



tool may be increased at will and furthering the efficiency of both, the coaction between the dog and groove retaining the parts in position when adjusted. The provision of the transverse extensions 28 upon the  
5 arm 27 of the movable member of the nail-puller affords an increased bearing surface, the advantage of which is obvious.

It is further to be noted that the entire device consists of but four parts, viz., the main or hollow handle  
10 with its hammer and claw, the supplemental handle and fixed member, the movable member, and the spring dog. The cheapness with which the entire device may be manufactured is therefore apparent, and its several parts may be readily and quickly put to-  
15 gether. It will be equally obvious from the foregoing that the supplemental handle may be entirely withdrawn from the main or hollow handle, thus forming two separate tools.

Slight changes may be made in the size and location of the several parts and in the minor details of construction of the same without departing from the spirit of the invention, which is therefore not intended to be limited to the exact details shown and described. 20

What is claimed, is—

A tool comprising a main handle provided with a longitudinal bore having a seat formed therein at its outer end; a supplemental handle slidable within said bore and provided with a longitudinal groove having a transverse extension of gradually decreased depth at its inner end; and a resilient member secured at one end within the seat  
25 in said bore and having its free end extending rearwardly into the groove in said supplemental handle. 30

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

HARRY W. BOLTZ.

Witnesses:

HIRAM F. KLICK,  
PETER LEHMAN.