

No. 702,128.

Patented June 10, 1902.

T. E. CLARK.

DEVICE FOR PERFORATING WELL CASINGS.

(Application filed June 7, 1901.)

(No Model.)

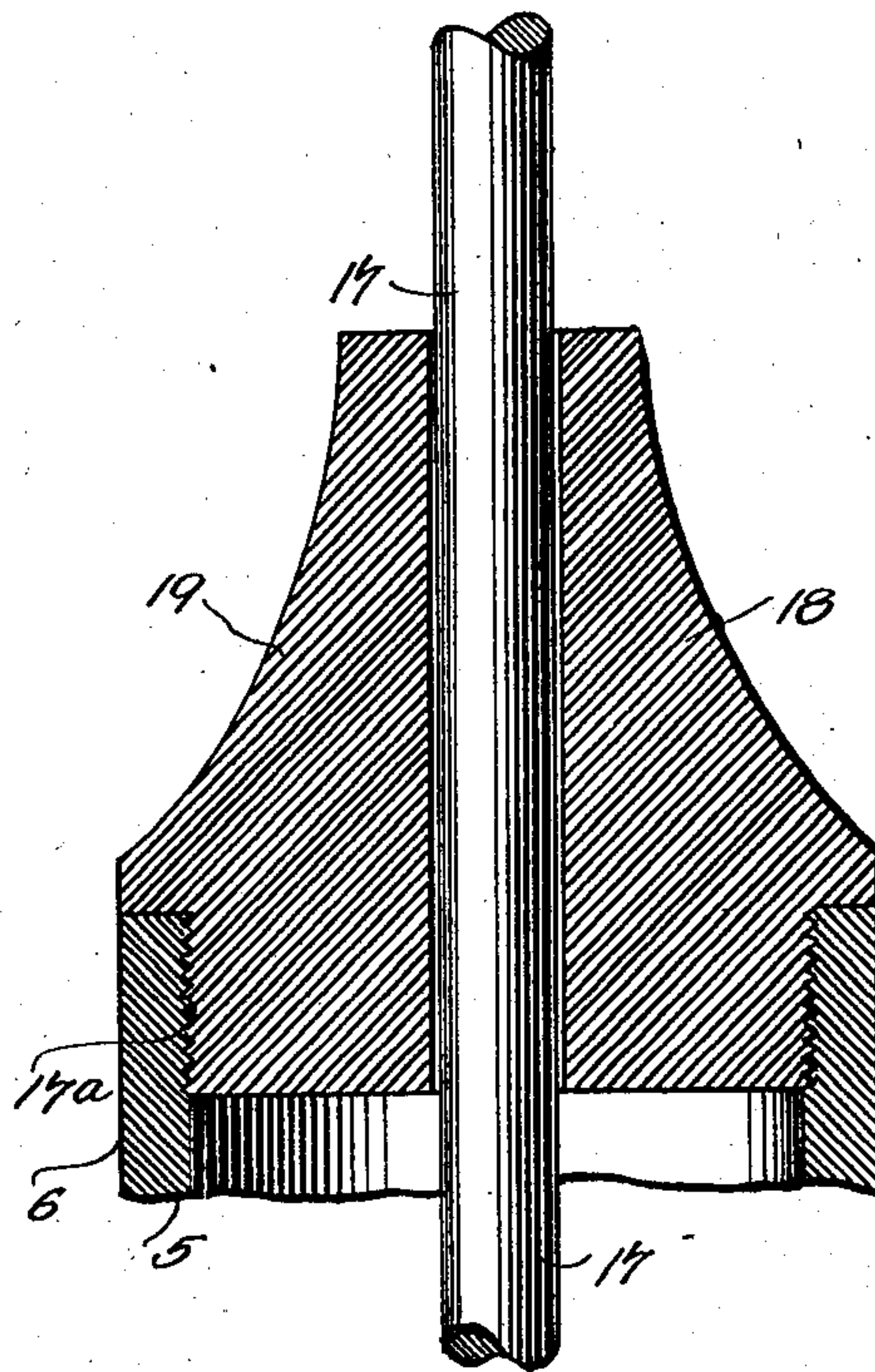
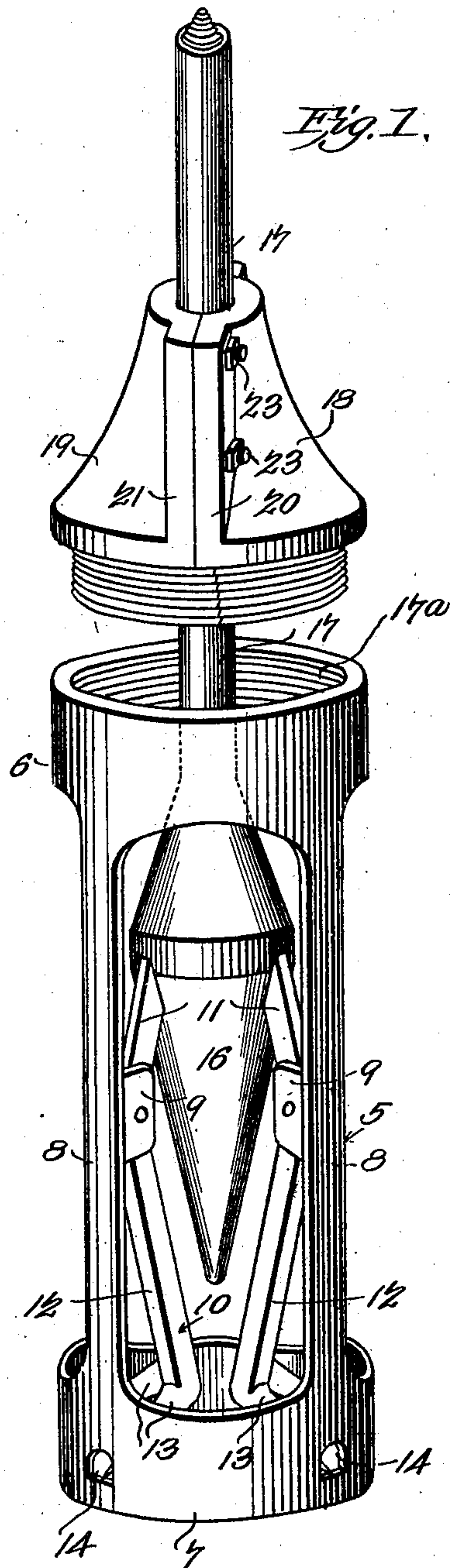


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS E. CLARK, OF VISALIA, CALIFORNIA.

DEVICE FOR PERFORATING WELL-CASINGS.

SPECIFICATION forming part of Letters Patent No. 702,128, dated June 10, 1902.

Application filed June 7, 1901. Serial No. 63,596. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. CLARK, a citizen of the United States, residing at Visalia, in the county of Tulare and State of California, have invented a new and useful Device for Perforating Well-Casings, of which the following is a specification.

This invention relates to devices for perforating well tubes or casings; and it has for its object to provide a simple and efficient collar for the upper end of the casing of the perforator which may be quickly and easily applied and removed and which will remain firmly in place.

A further object of the invention is to provide an efficient guide for the stem of the expander and which may be easily applied thereto and removed therefrom.

Further objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this invention, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the casing of the perforator with the collar disengaged therefrom, the expander for the perforators being in inoperative position. Fig. 2 is a sectional view showing the upper portion of the casing of the perforator and the collar therein.

Referring now to the drawings, there is shown a perforator comprising a cylindrical casing 5, formed integral, and from the walls of which are removed sections, so that the casing is, in effect, two spaced rings, an upper ring 6 and a lower ring 7, having the connecting-bars 8, the casing proper being open at both its upper and lower ends. Each of the bars 8 is provided with a pair of inwardly-directed and spaced ears 9, between each pair of which is disposed a perforating-lever 10. Each perforating-lever 10 consists of the two members 11 and 12, which are disposed at an obtuse angle to each other, the free end of the member 11 being disposed upwardly and having its extremity beveled, as shown, while the lower member 12 has its lower end bent outwardly at a right angle and sharpened to form a perforating-tool 13, it being understood that the lever is formed integral and that the different members are formed by

bending the metal bar of which the lever is formed.

The perforating portions 13 of the several levers are disposed adjacent to openings 14 in the lower ring portion of the casing of the implement, and when the upper ends of the levers are forced outwardly the perforating portions of the levers are drawn inwardly, and when the lower portions are moved outwardly the perforating portions are projected through the holes or openings 14 to engage and perforate a well casing or tube.

To operate the levers, a wedge is provided, and consists of a body 16, having the shape of a double cone—that is, tapered in opposite directions from a central annular portion—and from the upper end of this body portion extends a stem or shaft 17, by means of which the body may be moved downwardly to engage its lower tapered portion with the inner faces of the lower portions of the levers or may be raised to engage its upper tapered portion with the upper members of the levers, thus to move the perforating portions 13 of the levers into and out of operative positions.

The upper end of the casing of the perforator is internally threaded, as shown at 18, and engaged therewith is a closure which forms a collar for the shaft of the expander, this combined closure and collar consisting of the two semiconical sections 18 and 19, having the laterally-extending flanges 20 and 21, through which are engaged the clamping-bolts 22 and 23, said collar having a central bore through which the expander-shaft is passed. The lower end of the collar is cylindrical and is threaded to engage the threads of the upper end of the casing of the expander.

The upper end of the shaft of the expander is formed to engage a coupling member of an ordinary drill-shaft, as shown, and it will be understood that when a tube or casing is to be perforated the device is lowered thereinto, after which the shaft of the expander is pressed downwardly to force the perforating ends of the levers outwardly to perform their functions. When the perforating operation is completed, the shaft is drawn upwardly, with the result that the perforators are drawn inwardly, and subsequent upward movement of the shaft draws the device from the well.

It will be understood that in practice modi-

fications of the specific construction shown
may be made and that any suitable materials
and proportions may be used for the various
parts without departing from the spirit of the
5 invention.

What is claimed is—

1. In a device of the class described, the
combination with the casing having an up-
per internally-threaded end, and a perforat-
10 ing mechanism including an expander hav-
ing a shaft passed outwardly through the up-
per end of the casing, of a two-part guide-
collar disposed slidably upon the shaft and
having a lower threaded end for engagement
15 with the threads of the casing.

2. In a device of the class described, the
combination with the casing having the up-
per internally-threaded end, and a perforat-

ing mechanism including a shaft passed out-
wardly through the threaded end of the cas- 20
ing and movable therethrough, of a collar
having a lower threaded end for engagement
with the threads of the casing and having a
central longitudinal bore in which the shaft
is slidably received, the collar comprising two 25
sections divided in a plane including the axis
of the bore, said sections having laterally-ex-
tending flanges and clamping-bolts engaged
with the flanges to hold the sections together.

In testimony that I claim the foregoing as 30
my own I have hereto affixed my signature in
the presence of two witnesses.

THOMAS E. CLARK.

Witnesses:

R. F. CROSS,
C. W. BAKER.