

No. 706,872.

Patented Aug. 12, 1902.

J. H. ADAMS.

DRILL ROD GRAB.

(Application filed Nov. 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

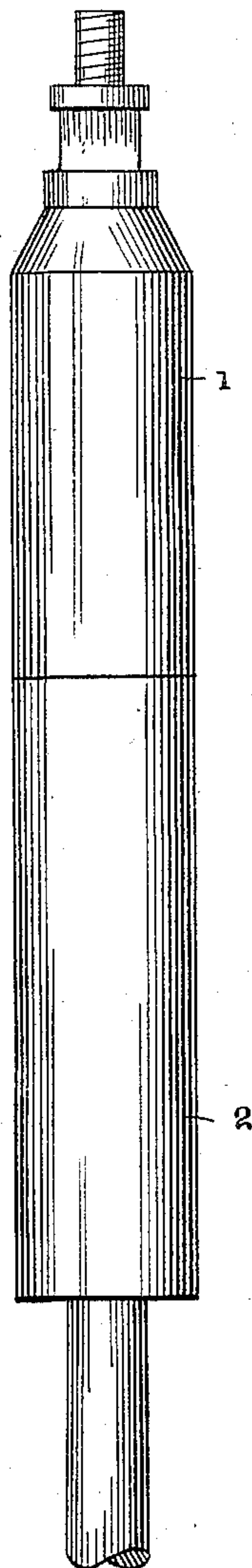


Fig. 2.

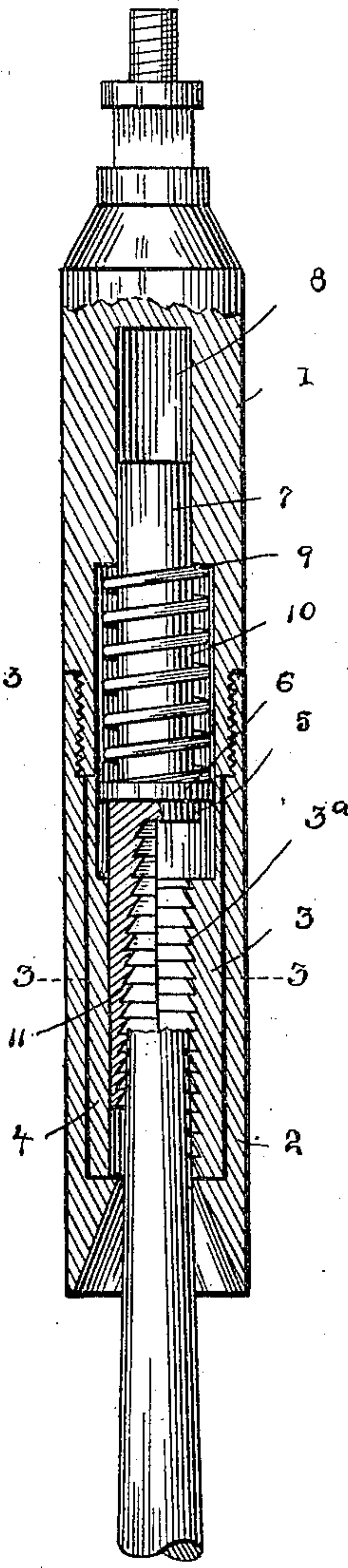
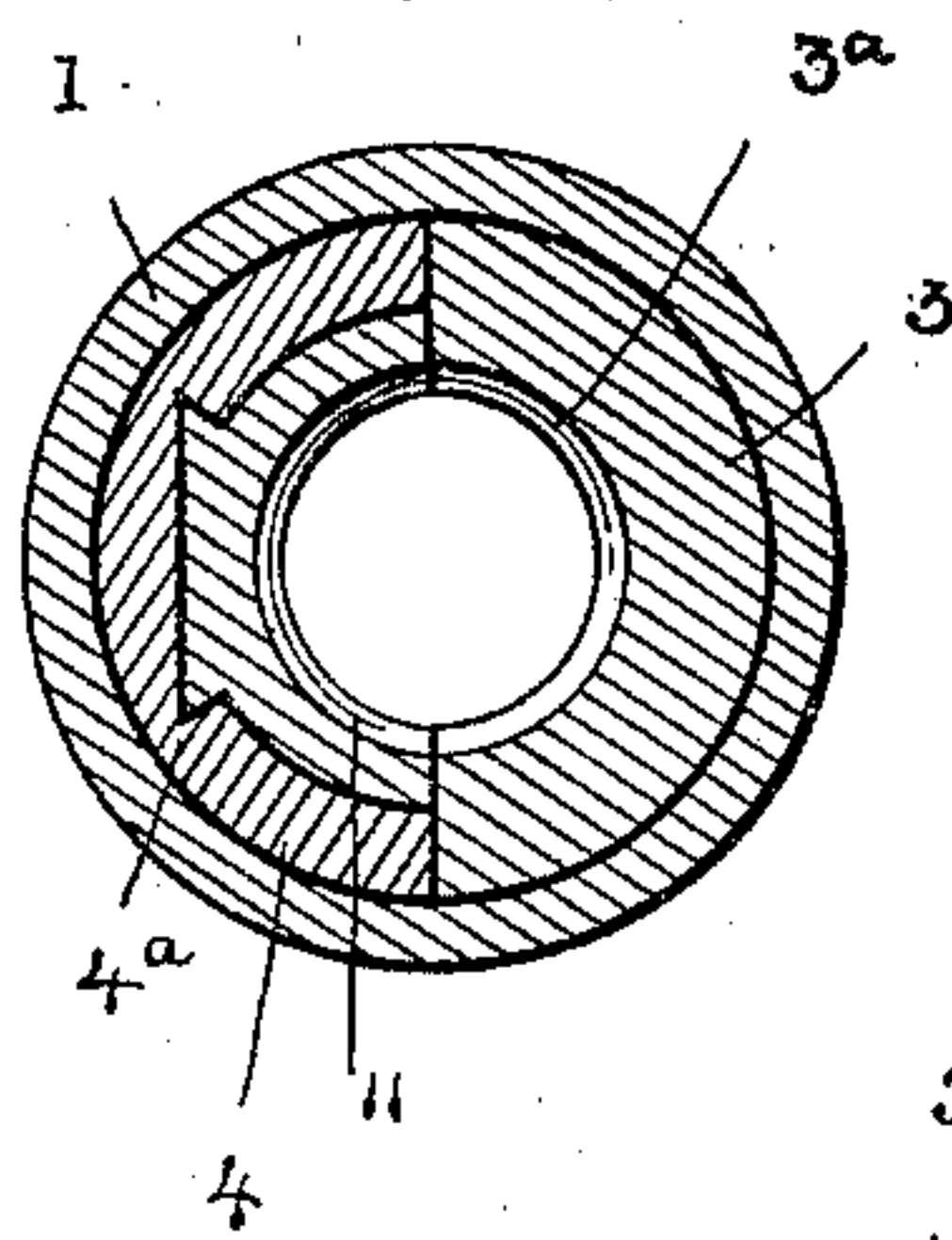


Fig. 3.



Witnesses

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Fig. 4.

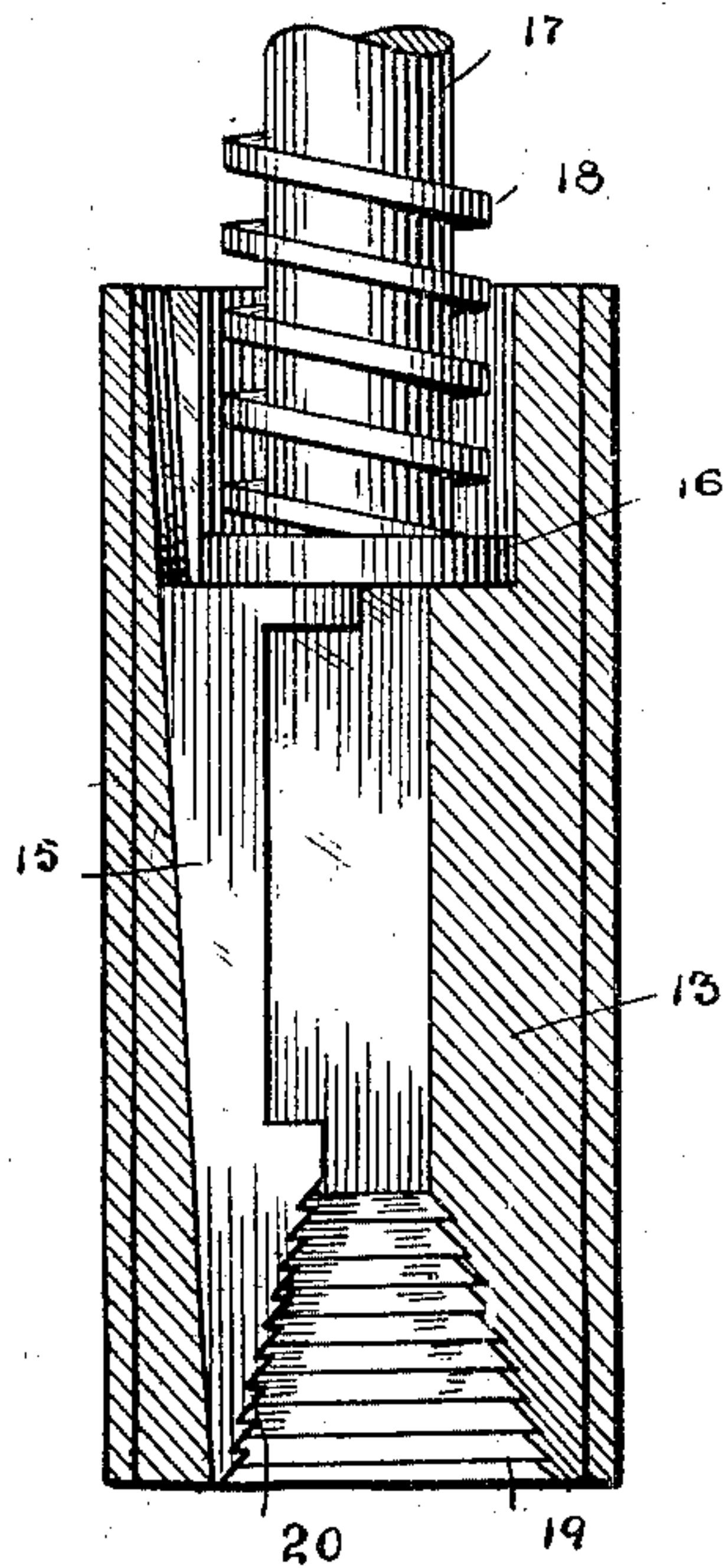


Fig. 5.

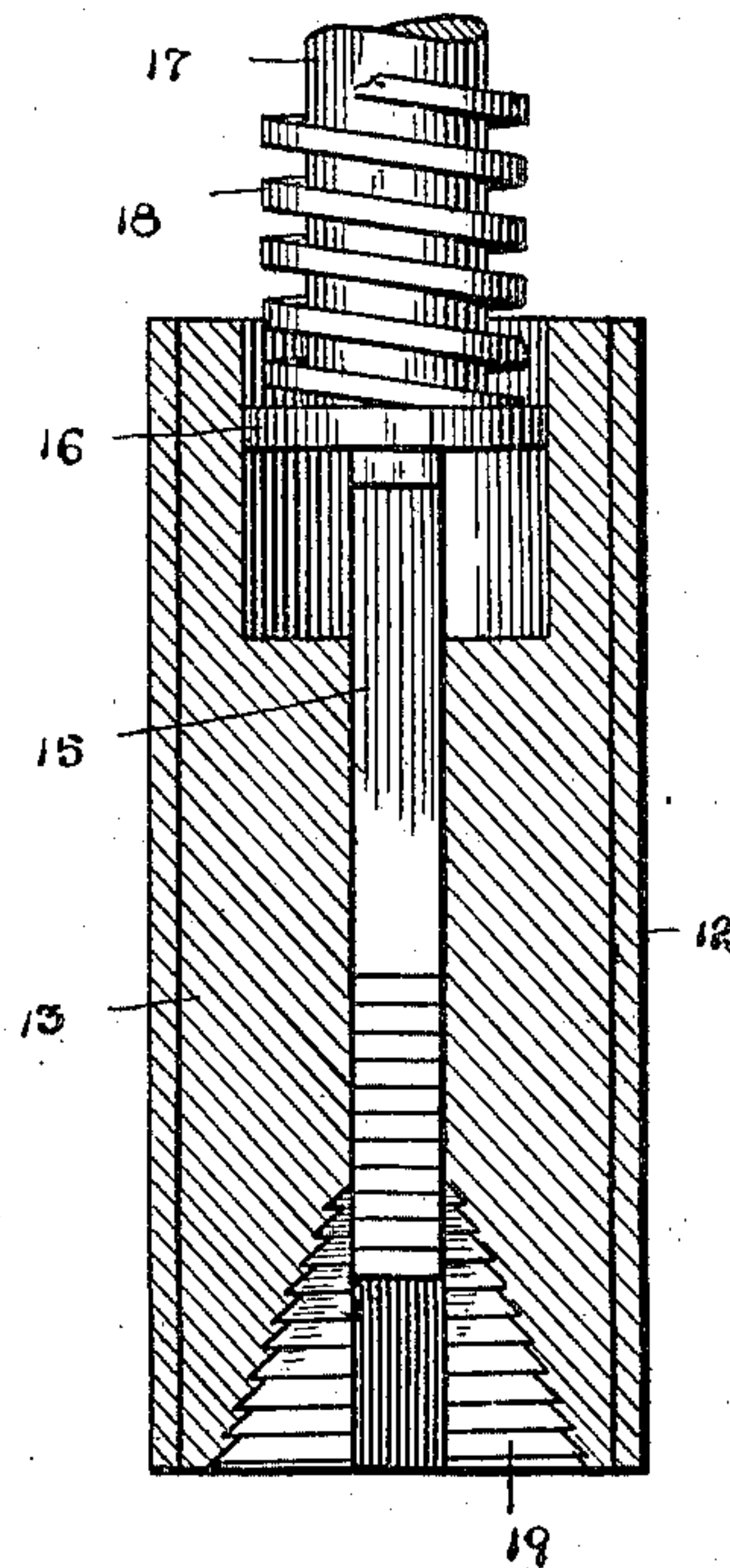
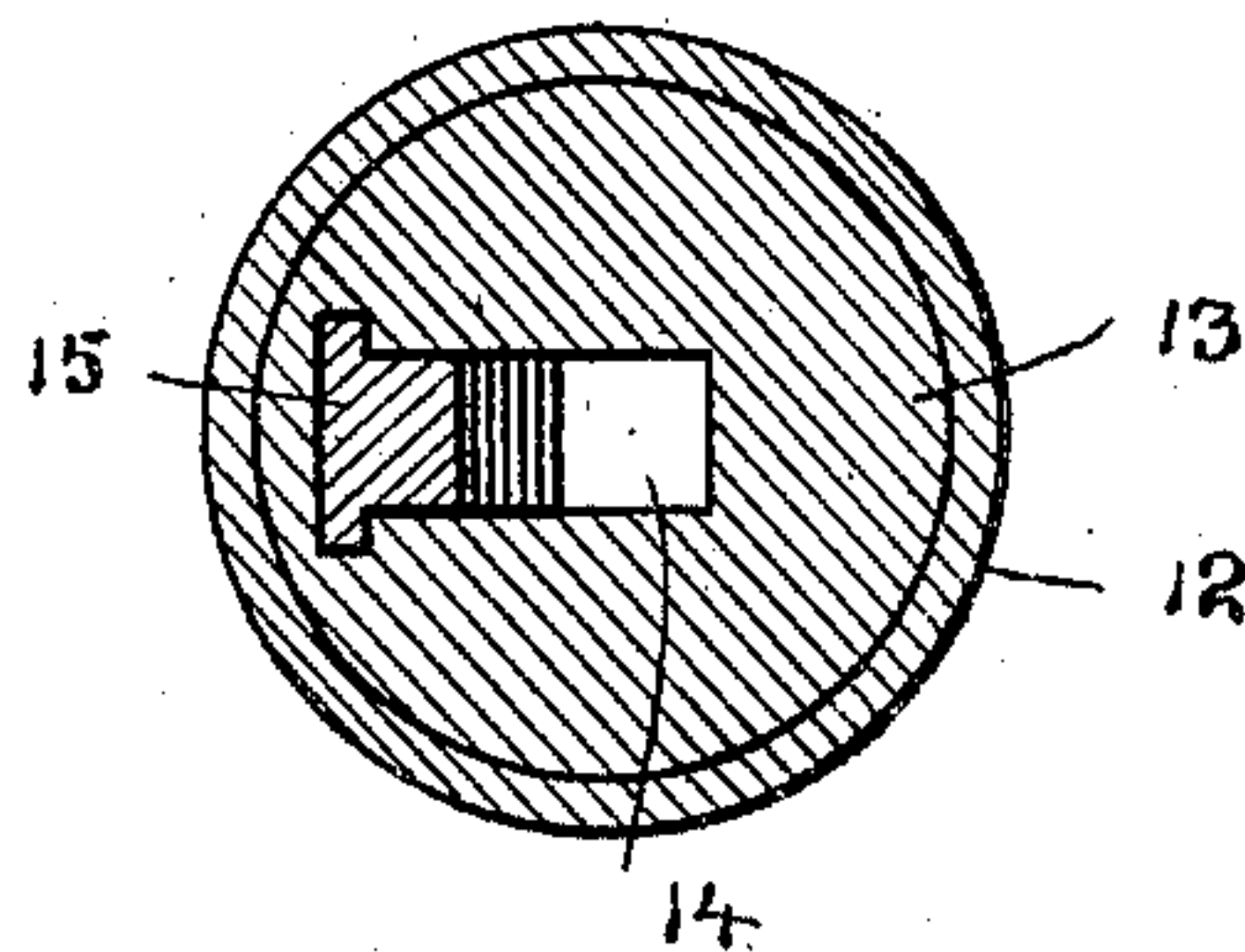


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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## DRILL-ROD GRAB.

SPECIFICATION forming part of Letters Patent No. 706,872, dated August 12, 1902.

Application filed November 27, 1901. Serial No. 83,911. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. ADAMS, a citizen of the United States, residing at Fullerton, in the county of Orange and State of California, have invented new and useful Improvements in Drill-Rod Grabs, of which the following is a specification.

This invention relates to drill-rod grabs; and the primary object thereof is to provide a device of the character described which will effectually perform the work for which it is intended.

With this object in view the invention consists in the novel combination of parts and details of construction which will be described hereinafter, recited in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a grab constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a vertical longitudinal section of a slight modification. Fig. 5 is a similar view on the line 4 4 of Fig. 4. Fig. 6 is a transverse section on the line 6 6 of Fig. 5.

Referring now to the drawings by numerals of reference, 1 designates one of the cylindrical sections of the casing of the grab, and 2 the lower section. Within the section 2 is a semicylindrical or concavo-convex removable lining 3, provided with a plurality of impinging teeth 3<sup>a</sup>.

4 designates a lining coinciding with the one designated by the numeral 3 and provided with a dovetailed groove 4<sup>a</sup>, in which is slidably secured a correspondingly-shaped impinging member 5, having a collar or flange 6 at its upper extremity, from which projects a pin 7, sliding in a suitable groove 8 in the upper casing. A shoulder 9 is provided adjacent the groove 8 and is designed for the purpose of limiting the spring 10, which encircles the pin 7 and bears against the collar 6, so as to normally project the member 4 downward. It will be noticed that the teeth 11, arranged on the member 4, increase in width from the bottom to the top, so as to form a wedge. When the grab is forced down in the opening made by the drill to grasp a section of pipe or a portion of the drill, the

article to be raised will be forced within the channel formed by the intersection of the members 3 and 4 until the teeth take hold. As the grab is raised the members will wedge together, thereby firmly impinging upon said article and tightly clasp the same within the jaws formed by the members 3 and 4, whereby the same may be brought to the surface and removed by manual means.

The spring designated by the numeral 10 forms a resilient cushion for the sliding member 4, so as to relieve any jar caused by contact with the section of pipe or drill section.

In the modification shown in Figs. 4, 5, and 6 I have not illustrated the casing, as the construction thereof will be substantially the same. In this form, 12 designates a lining within the section 2, comprising a cylinder inclosing a block 13, having a T-shaped slot 14 running longitudinally through the same and in which is slidably secured a tooth-engaging member 15, having on its upper extremity a collar 16, from which projects a guide-pin 17, working in a suitable slot, such as designated by the reference-numeral 8 in Fig. 2. A coil-spring 18, corresponding to the spring 10 of the preferred form, encircles the pin 17 and is designed for the same purpose. It will be noticed that the lower extremity of the block 13 is provided with a conical recess 19, having a plurality of engaging teeth adapted to receive the pipe section or rod. The inner wall of the slot 14 inclines from a perpendicular and forms a seat upon which the engaging jaw 15 slides. As the spring forces said jaw downward the distance between the teeth 20 on said jaw and the teeth on the block is diminished, and when said jaw is forced downward to the limit of its movement the grab is in a position to receive the smallest size of pipe. A larger size, however, may be readily grasped by forcing said jaw upward, and thereby increasing the width of the recess 19.

From the foregoing it will be seen that in both constructions one of the linings forms a rigid jaw and the other a sliding jaw and that the spring bearing upon the collar materially assists in impinging or retaining the pipe to the grab.

While I have shown the preferred form of my invention, I do not wish to be understood



as limiting myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make all such changes as fall within the scope of my invention.

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

10 1. In a drill-rod grab, the combination with a cylindrical casing, a semicircular rigid jaw secured therein, a coinciding sliding jaw arranged adjacent said rigid jaw, and provided at its top with a collar, and a spring pressing  
15 against said collar for normally holding said sliding jaw against an upward movement.

2. In a drill-rod grab, the combination with a suitable casing, a rigid jaw retained therein, a coinciding sliding jaw arranged adjacent  
20 the rigid jaw and provided with a plurality

of impinging teeth, the engaging surface of said sliding jaw being wedge-shaped, and means for normally holding said sliding jaw against an upward movement.

3. In a drill-rod grab, the combination with 25 an outer casing, a rigid jaw secured therein and provided with a plurality of teeth, a coinciding sliding jaw arranged adjacent the rigid jaw and also provided with teeth, a collar on the upper end of said sliding jaw, a 30 guide-pin projecting from said collar, and a spring surrounding said pin and adapted to bear against the collar to retain the sliding jaw normally against an upward movement.

In testimony whereof I affix my signature 35 in presence of two witnesses.

JAMES H. ADAMS.

Witnesses:

CHAS. CRABTREE,

C. G. ROWAN.