(No Model.)

C. H. LAMBKIN.

NUT WRENCH.

No. 587,006. Patented July 27, 1897.

Fig 1

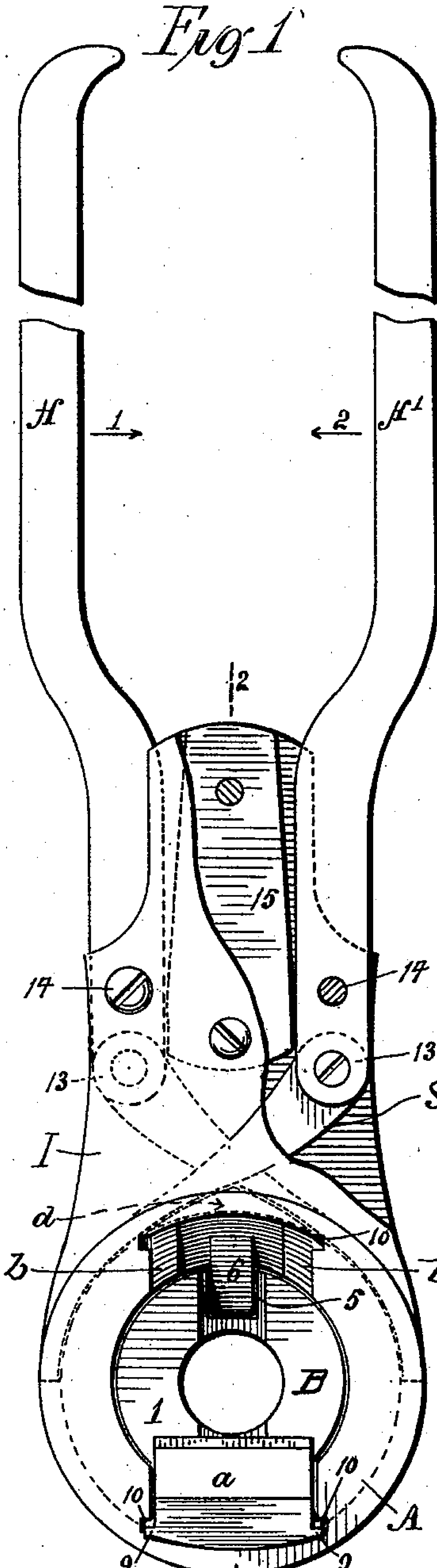


Fig: 3

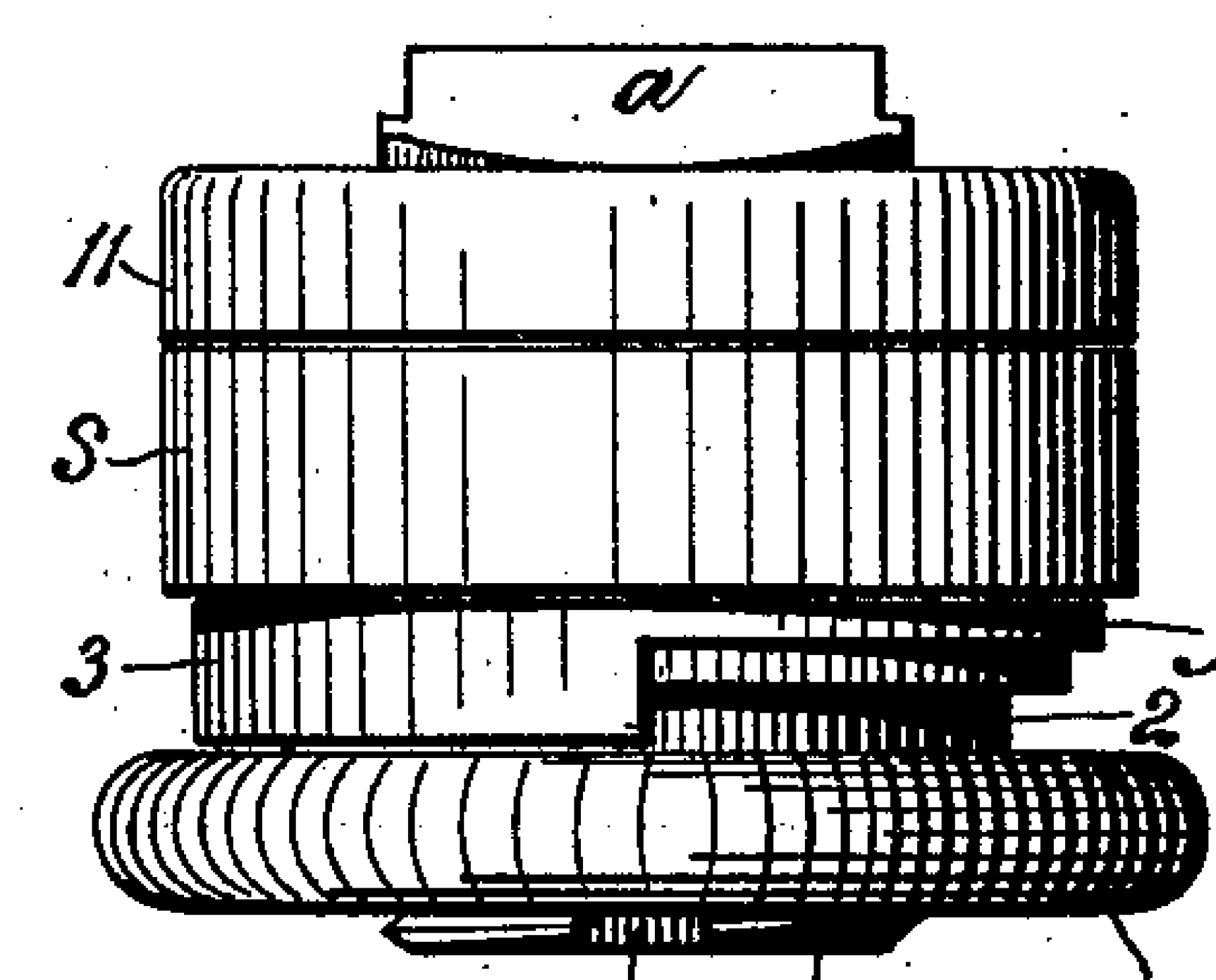


Fig 2

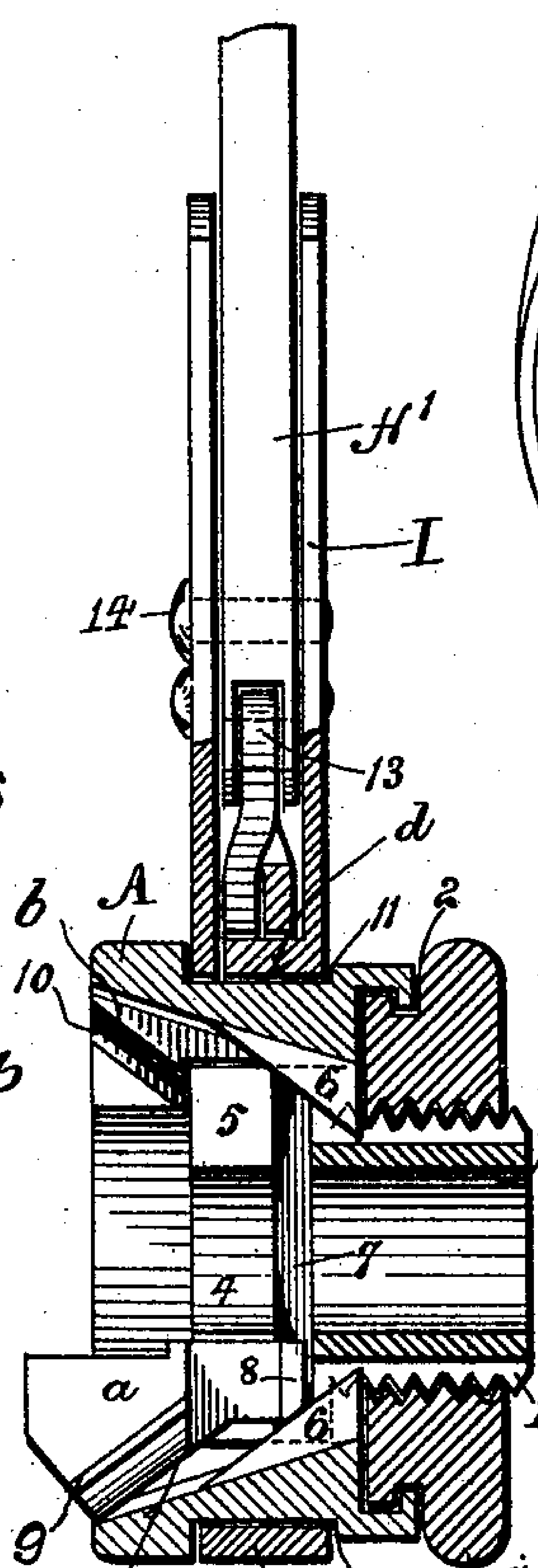


Fig 4

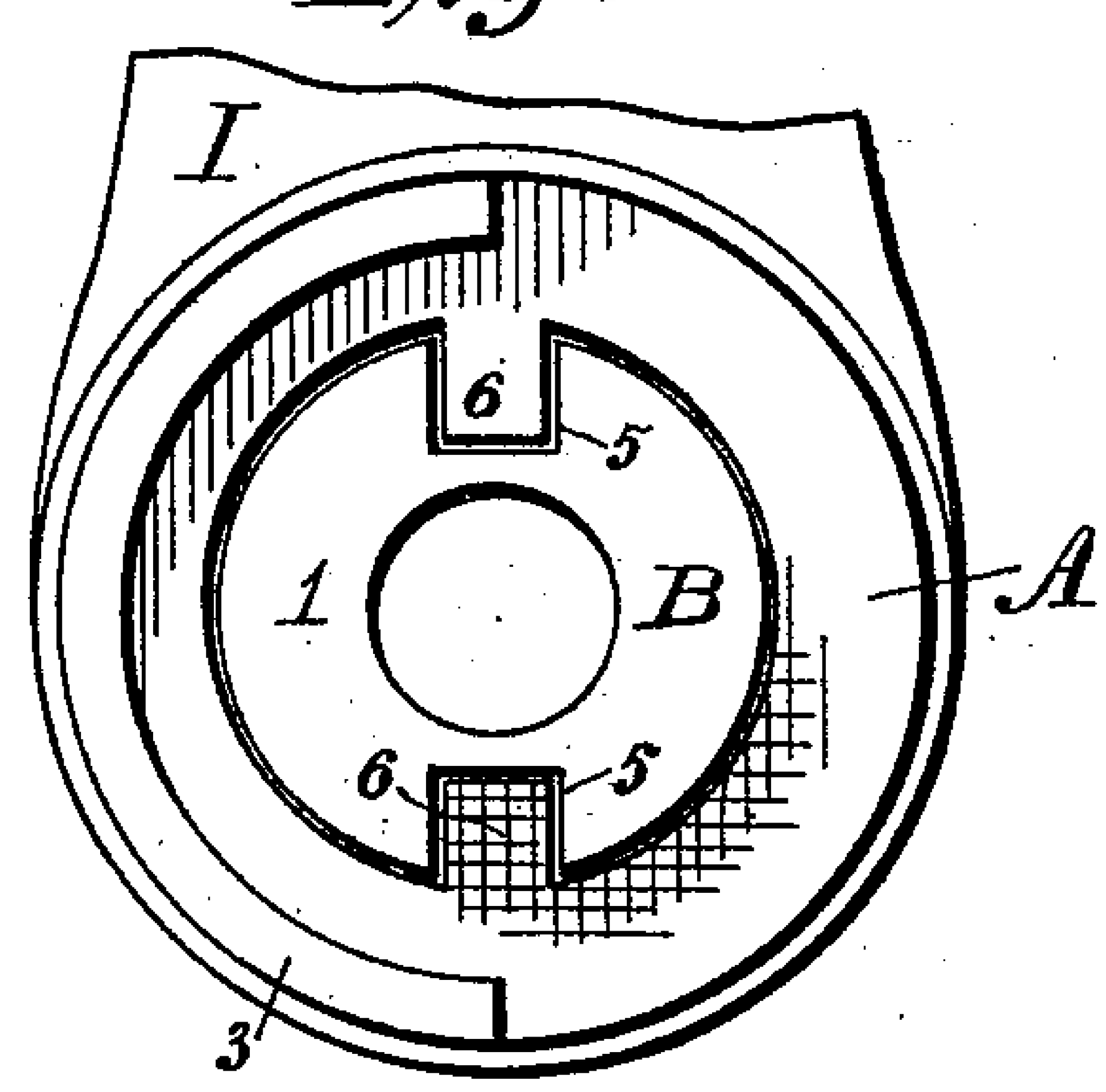
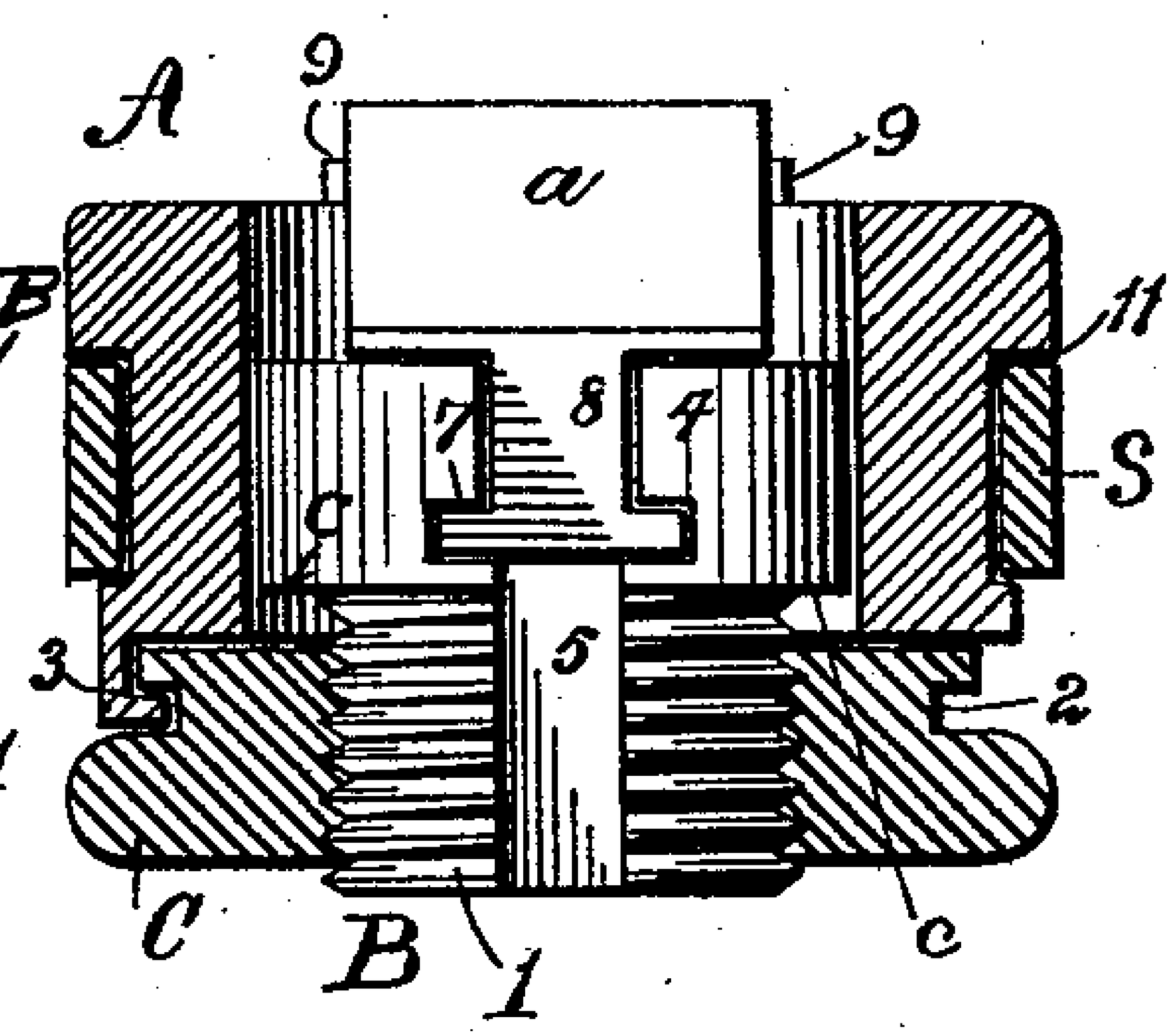


Fig 5



WITNESSES:

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CHARLES H. LAMBKIN, OF MOUNT VERNON, NEW YORK.

NUT-WRENCH.

SPECIFICATION forming part of Letters Patent No. 587,006, dated July 27, 1897.

Application filed October 9, 1896. Serial No. 608,351. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LAMBKIN, a citizen of the United States of America, and a resident of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Nut-Wrenches, of which the following is a specification.

My invention has reference to improvements in adjustable nut-wrenches, and particularly to a wrench similar in principle to the ordinary ratchet-wrench, but made without ratchets or springs.

The nature of my invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 represents a face view of a wrench embodying my invention, one of the jaws being removed and part of the casing broken away. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a side view of the wrench-head. Fig. 4 is a top view with the operating-nut removed. Fig. 5 is a central section through the head.

Similar letters and numerals of reference designate corresponding parts throughout the several views of the drawings.

Referring to the drawings, the letter A designates the jaw-head, containing an annular jaw-holder B, to which are connected the two jaws *a a*. The jaw-holder is provided with a reduced portion or shank 1, which is threaded and engaged by an operating-nut C. Said nut is formed with a peripheral guide 2, fitting into a semicircular way 3, formed at the top of the head. The larger portion or body 4 of the jaw-holder is fitted to the bore of the head and is slotted, as at 5 5. Into these slots project inclines 6 6, which serve both to support and guide the jaws *a* and to prevent the jaw-holder from rotating. Said inclines are placed diametrically opposite to each other in the head A and may be made integral with the same.

In the jaw-holder is formed a transverse or diametrically-extending guideway 7, which receives the upper headed ends 8 of the jaws *a*. The lower or gripping portions of the jaws are provided with inclined guides 9, which are fitted into correspondingly-inclined ways 10, located diametrically opposite in the head A. The inclines 6 6, before mentioned, support the jaws at their upper ends, and said inclines have the same inclination as the inclined ways 10. A third set of diametrically opposite inclines *b* guide the backs of the lower portion of the jaws. Said inclines *b* are directly adjacent to the inclined ways 10, and in fact form a continuation of the same. (See Fig. 1.) The material of the head is removed between said inclines *b* to permit the insertion of the jaws from below. It is now evident that if the operating-nut C is turned the jaw-holder B will be raised or lowered, and consequently the jaws will be opened or closed, in view of the inclined guides 9 and ways 10, while the remaining inclines serve as additional means for guidance and support. The shoulder *c*, Fig. 5, formed on the jaw-holder, acts as a stop to prevent the jaws from being drawn in too far.

To avoid the use of ratchet-teeth and pawls and to provide a very quick acting or sensitive handle, I turn a groove 11 into the outer periphery of the head A, into which is fitted a steel strap S, which is opened and closed by means of the handles H and H′. In the present instance I have shown the ends of the strap crossed and attached at 13 13 to the ends of the respective handles.

The handles are pivoted at 14 14 to a casing I, and intermediate of the same is arranged a block or bearing 15, Fig. 1, rigidly affixed to the casing. On the casing is also formed or affixed an abutment *d*, having its surface concentric with the head. If by means of the handle H the wrench is moved in the direction of arrow 1, Fig. 1, the strap is drawn about the head and the head is drawn against the abutment *d*, whereby said head is prevented from turning. The block or bearing 15 prevents retrograde motion of the handle H′, as the end of the same is between the fulcrum of said handle and the connection 13. If by means of the handle H′ the wrench is turned in the direction of arrow 2, the head is gripped and turned as before. The head is loosened by pressing either of the handles outwardly.

It is of course to be understood that the block or bearing 15 may be replaced by suitably-located pins or stops.

What I claim as new is—

1. In a nut-wrench, the combination of a

head revolubly supported, two pivoted handles, and a cross-strap encompassing the head and attached at opposite ends to said handles, substantially as described.

2. In a nut-wrench, the combination of a head revolubly supported, two handles, a strap encompassing the head and attached at opposite ends to said handles, and means for preventing retrograde turning of the handles, substantially as described.

3. In a nut-wrench, the combination of a head revolubly supported, two handles, a strap encompassing the head and attached at opposite ends to said handles, and a block or bearing intermediate of the handles for preventing retrograde turning of the same, substantially as described.

4. In a nut-wrench, the combination of a head revolubly supported, two handles, a strap encompassing the head and attached at opposite ends to said handles, and an abutment arranged adjacent to the head, substantially as described.

5. In a nut-wrench, the combination of a revoluble head provided with inclined ways, a jaw-holder mounted to reciprocate in said head and provided with a transverse way and with a threaded shank, jaws provided with inclined guides fitted to the inclined ways in the head and with flanges or heads fitted to the transverse way of the jaw-holder, and an operating-nut engaging the threaded shank of the jaw-holder, substantially as described.

6. In a nut-wrench, the combination of a revoluble head provided with inclined ways, a jaw-holder slotted longitudinally and mounted to reciprocate in said head; said jaw-holder being provided with a transverse way and with a threaded shank, jaws provided with inclined guides fitted to the ways in the head and with flanges or heads fitted to the transverse way of the jaw-holder, inclines 6 attached to the head and entering the slots in the jaw-holder and an operating-nut engaging the threaded shank of the jaw-holder, substantially as described.

7. In a nut-wrench, the combination of a revoluble head provided with inclined ways, inclines 6 formed on said head for guiding and supporting the upper ends of the jaws, a jaw-holder mounted to reciprocate in said head and provided with a transverse way and with a threaded shank, jaws provided with inclined guides fitted to the ways in the head and with flanges or heads fitted to the transverse way of the jaw-holder, and an operating-nut engaging the threaded shank of the jaw-holder, substantially as described.

8. In a nut-wrench, the combination of a revoluble head provided with inclined ways, inclines *b* and 6 formed on said head for guiding and supporting respectively the backs and heads of the jaws, a jaw-holder mounted to reciprocate in said head and provided with a transverse way and with a threaded shank, jaws provided with inclined guides fitted to the ways in the head and with flanges or heads fitted to the transverse way of the jaw-holder, and an operating-nut engaging the threaded shank of the jaw-holder, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 16th day of September, 1896.

C. H. LAMBKIN.

Witnesses:
A. FABER DU FAUR, Jr.,
ISAAC ROTHSCHILD.