

E. J. Leyburn,

Wrench.

N^o 82,962.

Patented Oct. 13, 1868.

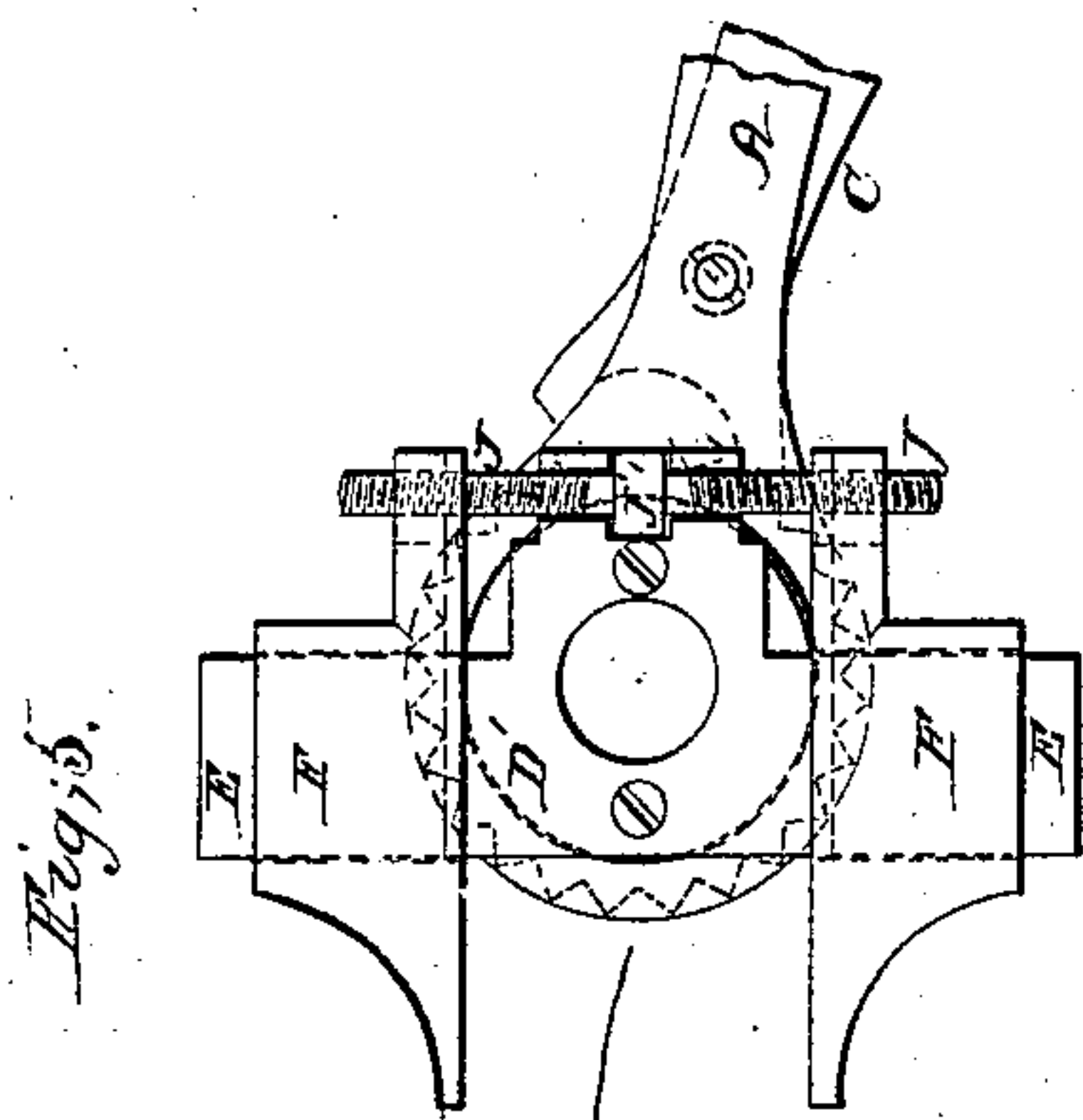


Fig. 5.

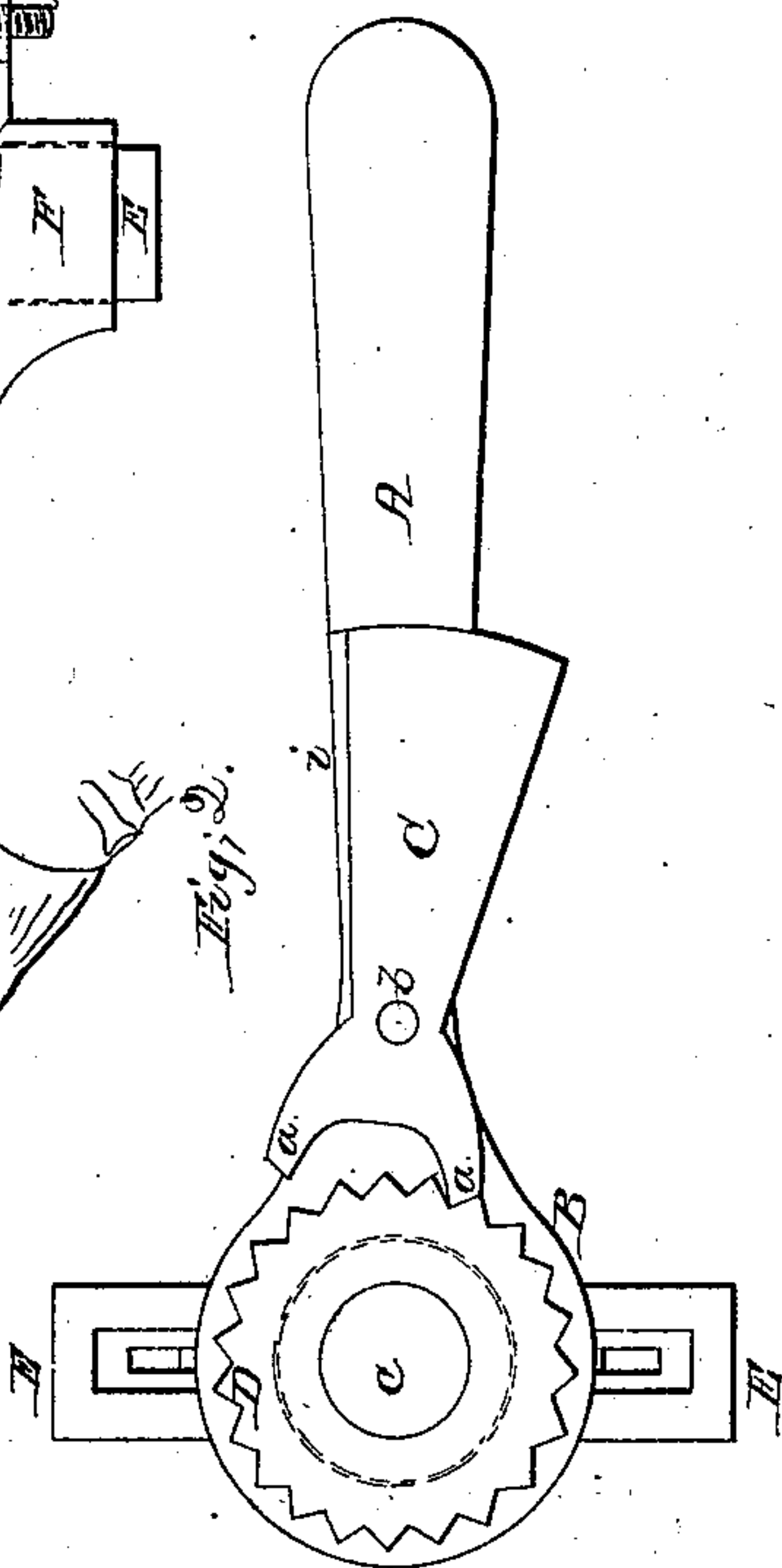


Fig. 2.

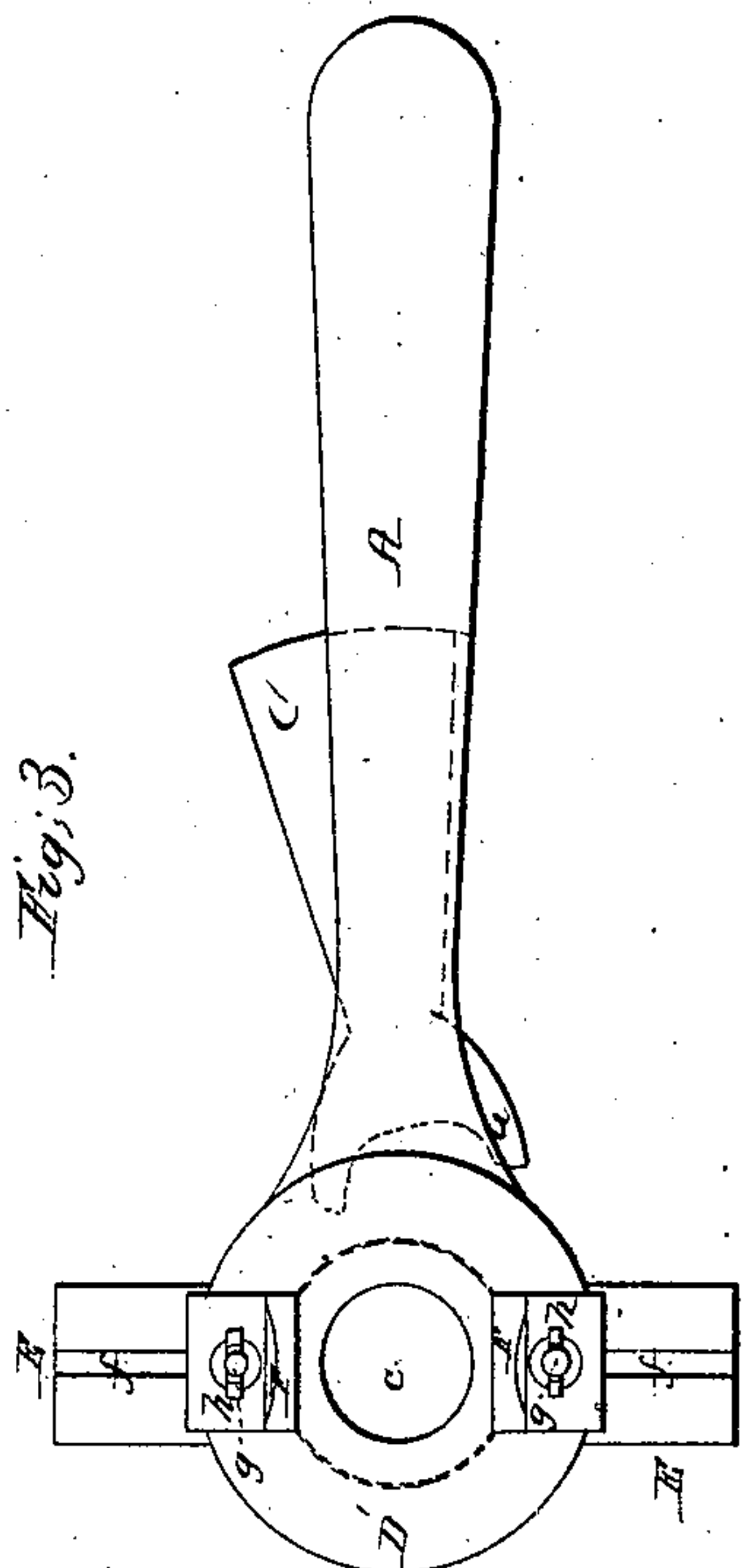


Fig. 3.

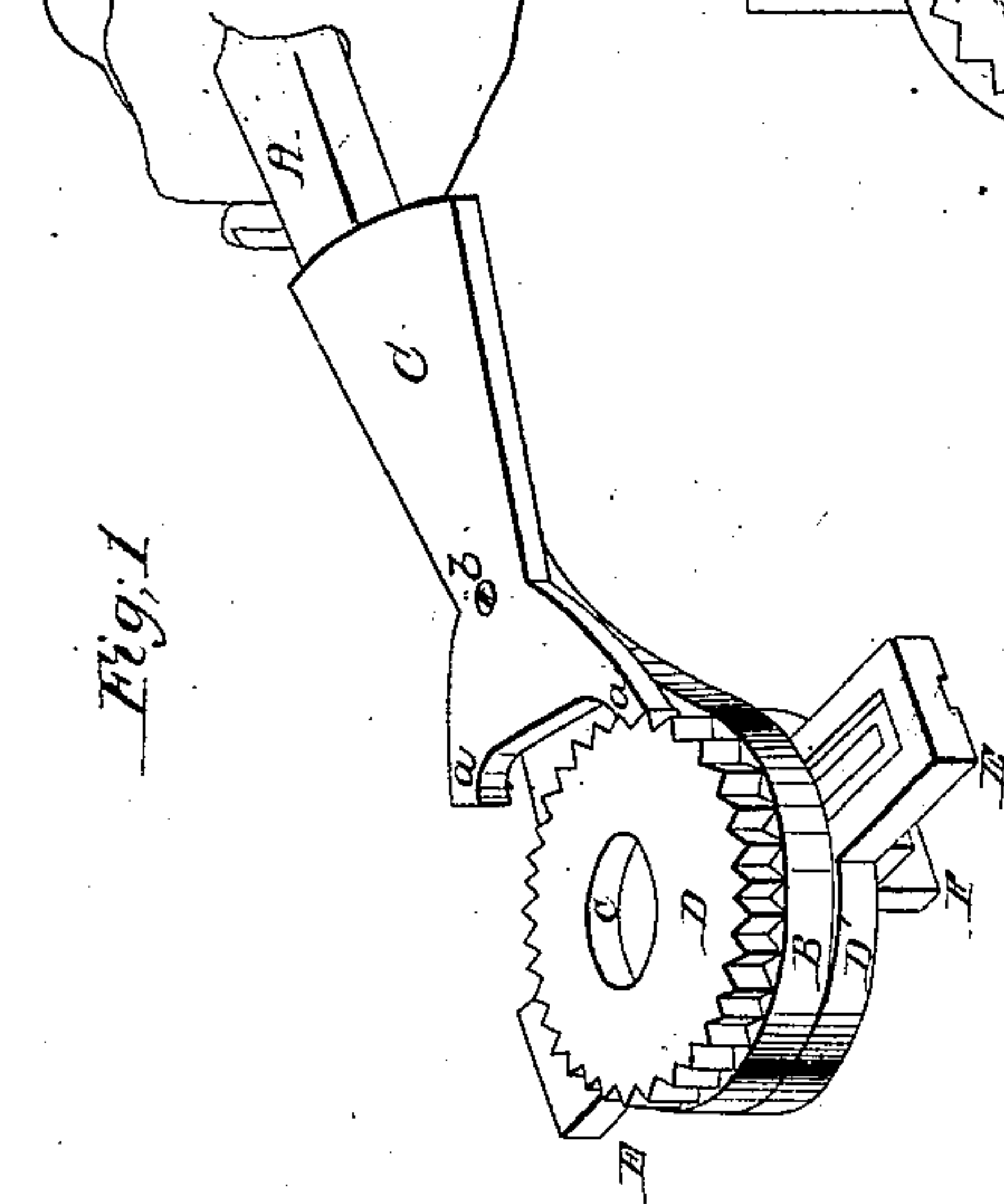


Fig. 1.

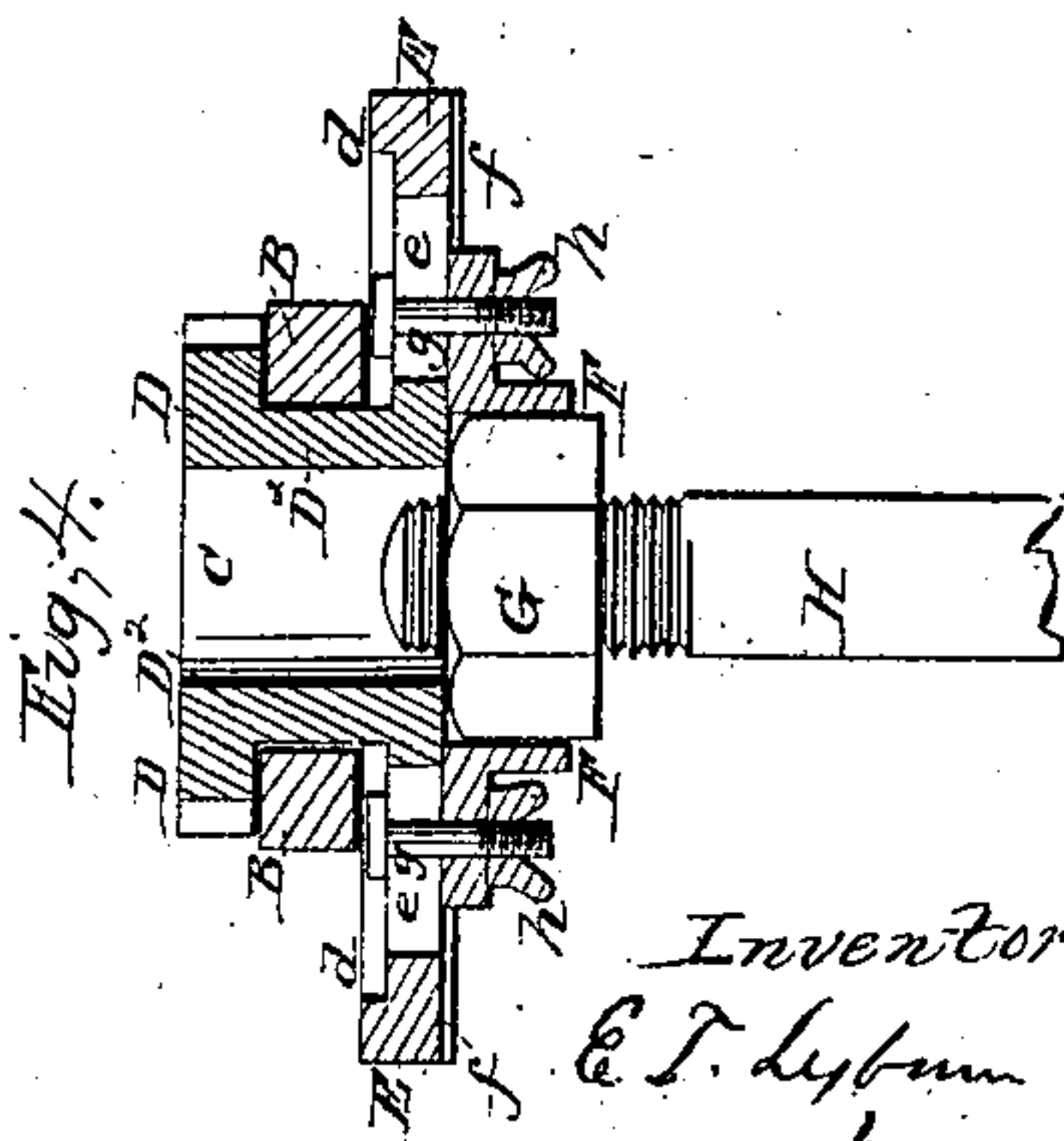


Fig. 4.

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E. J. LEYBURN, OF LEXINGTON, VIRGINIA.

Letters Patent No. 82,962, dated October 13, 1868.

IMPROVEMENT IN WRENCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, E. J. LEYBURN, of Lexington, in the county of Rockbridge, and State of Virginia, have invented a new and improved Wrench; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the improved wrench, complete.

Figure 2 is a top view of the wrench.

Figure 3 is a bottom view of the same.

Figure 4 is a cross-section through the wrench.

Figure 5 is a bottom view of the improved wrench, having its jaws provided with a right and left screw-rod for adjusting them.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to construct a nut-wrench with jaws, that can be adjusted and set at different distances apart for nuts of various sizes, and to so apply these jaws to the handle of the wrench, that they can be turned with their handle either to the right or left, or the handle turned independently of them, thereby admitting a nut to be turned any number of times without detaching said jaws from it, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The handle A of the wrench is constructed with a circular eye-piece or collar, B, on one end, and also with a depression, *i*, in one side. The said eye-portion B receives a tubular hub, D², on one end of which a right and left ratchet-wheel, D, is formed or secured, and on the opposite end, an enlargement, D¹, is secured, from which latter two arms E E extend, as shown in the several figures of the accompanying drawings.

Upon the depressed portion *i* of handle A, and pivoted to this handle at *b*, is a right and left pawl-lever, C, having two arresting-portions *a a* formed on that end next the wheel D, and having its opposite end made sufficiently wide to allow it to be moved either to the right or left by a thumb and finger of the hand that grasps the handle A.

By pressing the pawl C to one side, one of the teeth *a* will engage with the teeth of ratchet-wheel D, and lock this wheel to the handle, so that it will be turned with the handle in one direction, and by pressing pawl C to the opposite side, the other tooth, *a*, will lock wheel D to its handle, so as to turn therewith in an opposite direction to that above mentioned. By holding pawl C so that neither one of its teeth *a* will engage with wheel D, this wheel can be turned freely in its circular eye-piece B.

The nut-gripping jaws F F, shown in figs. 1, 3, and

4, are secured to the arms E E, by means of bolts *g g* and thumb-nuts *h*. The bolts pass through slots *e*, made through the said arms, and allow the jaws F to be adjusted when nuts *h* are loosened and set at different distances apart.

The heads of the bolts work in depressions *d*, formed in the upper sides of the arms E, and the foot-portion of each jaw F has a tenon formed on it, which fits into a groove, *f*, made in its arm E, and thus prevents each jaw from turning around its bolt.

In fig. 5, the nut-gripping jaws F F are represented as being made much longer than the jaws shown in the other figures, so as to gripe a nut by their extended ends, or by those portions opposite the holder D¹. These jaws, F F, of fig. 5, have holes made through them, so as to receive the arms E E, and slide on these arms toward and from the central hole *c*. To adjust and set these jaws of fig. 5 at different distances apart, I use a right and left screw, J, with a cylindrical serrated finger-portion, J', seated into the holder D¹. By means of this right and left screw J, the two nut-gripping jaws can be adjusted simultaneously, and with greater facility than by the bolts and nuts shown in figs. 3 and 4. I therefore prefer to adopt the device shown in fig. 5, but do not confine myself thereto.

To use the improved wrench, the handle A is grasped in the hand, and the jaws F F are adjusted at the required distance apart, at equal distances from the axis of the hole *c*, and placed upon a nut, G, as shown in fig. 4, with the axis of the bolt H coinciding with the axis of the hole *c*, or, if the wrench-jaws are constructed with extended ends, as shown in fig. 5, the nut may be confined between such ends. The pawl C is then properly adjusted in place against the toothed wheel D, so as to cause this wheel and the jaw-carrying portion D¹ to turn with the handle A in the direction which it is required to screw up or unscrew the nut. While turning a nut, the pawl C is held in place by the pressure of the finger, and while turning backward, to commence a new movement of the nut, the pressure on pawl C is relieved, so that this pawl allows the handle to swing freely about the hub-portion D² without moving the jaw-holding portions and nut.

I am aware that wrenches have been made and used before my invention, wherein a nut-receiving socket-portion was applied to a handle, so as to allow the screwing up or unscrewing nuts of a given size by giving a vibrating movement to the handle, and without removing said socket-portion from the nut being acted upon, and therefore I do not lay claim to the broad principle of having the nut-jaws or socket of a wrench so applied to a handle that a rotary motion in one direction can be given to such jaws by vibrating the handle thereof.

I do not claim a ring-ratchet with the wrench-jaws

anged within and circumscribed by it. Nor do I claim a spring-pawl, which is adjustable to the right or left of the centre of such a ring-ratchet, as such a wrench would be very cumbersome and heavy if constructed for use upon large nuts, it being necessary to make the ring in proportion as the space between the jaws is desired to be increased; and besides this, such a wrench was patented by L. D. Gilman, August 5, 1856.

Neither do I claim a ratchet which has one portion of its circle or periphery cut away in order to admit the application of the wrench-jaws to it, as such a wrench will not admit of an unbroken or a continuous movement around a circle, nor will it serve as a right or left wrench; and beside this, such a wrench was patented by George Meader, January 17, 1865; but what I do claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the arms E E and jaws F F, in relation to the unbroken ratchet, (which ratchet is capable of being turned through a complete circle,) so that said jaws are adjustable for large and small nuts, within the capacity of the wrench, without a corresponding enlargement of the ratchet-wheel being necessary, substantially as described.

2. The combination of the pivoted right and left pawl a a with the arms E E and adjustable jaws F F, substantially as and for the purpose described.

3. The jaw-holding portion D¹, E E, hub D², ratchet-wheel D, adjustable jaws F F, handle A, and pawl C, a a, all combined and arranged substantially as described.

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Witnesses:

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