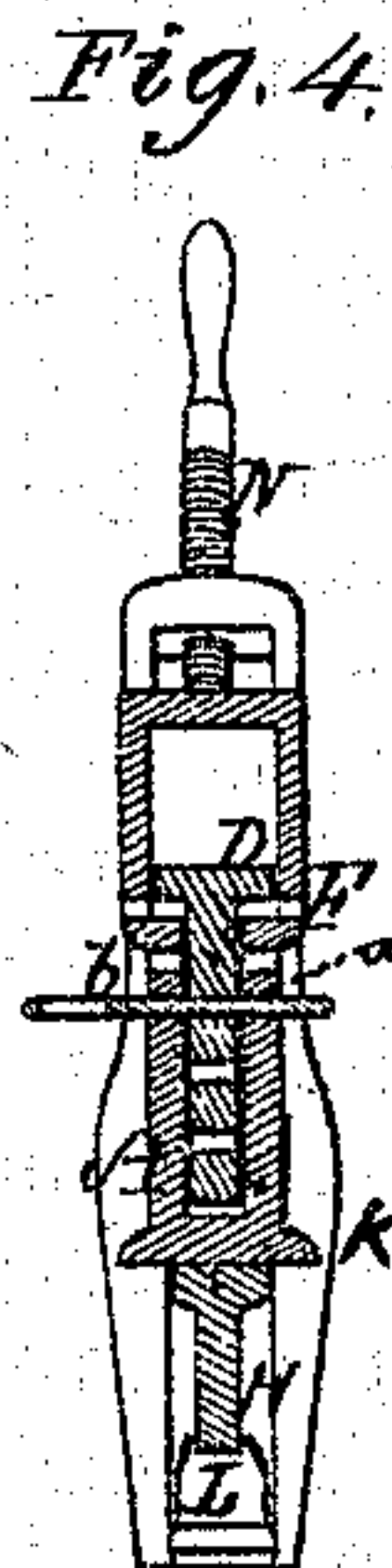
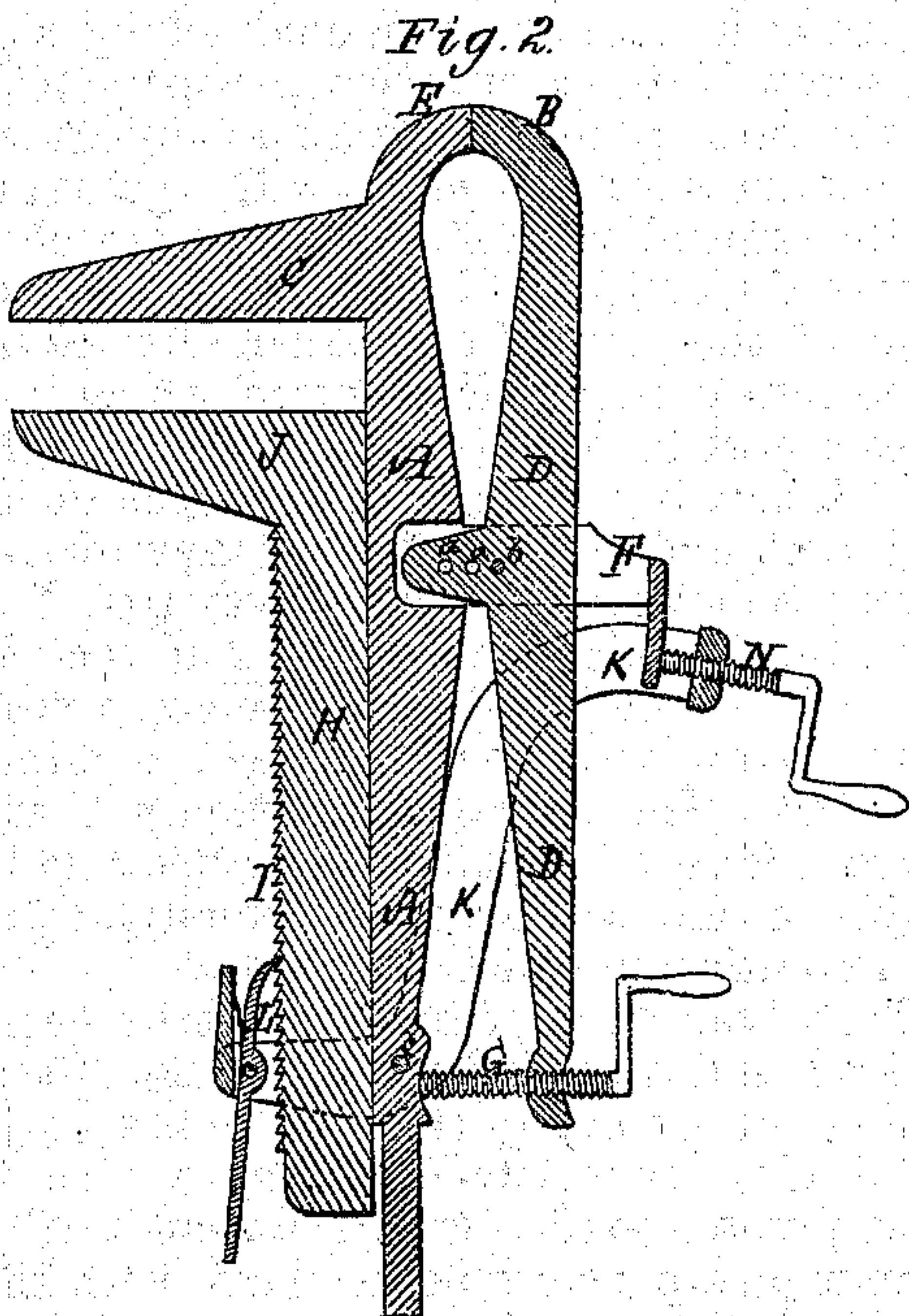
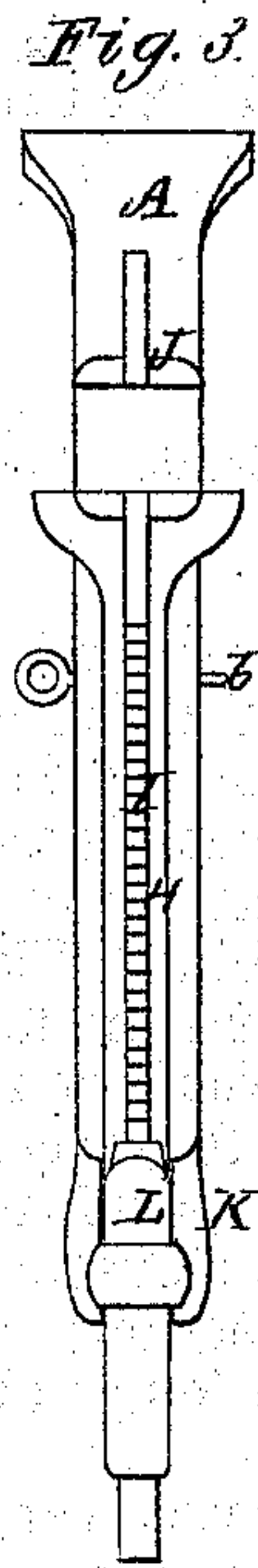
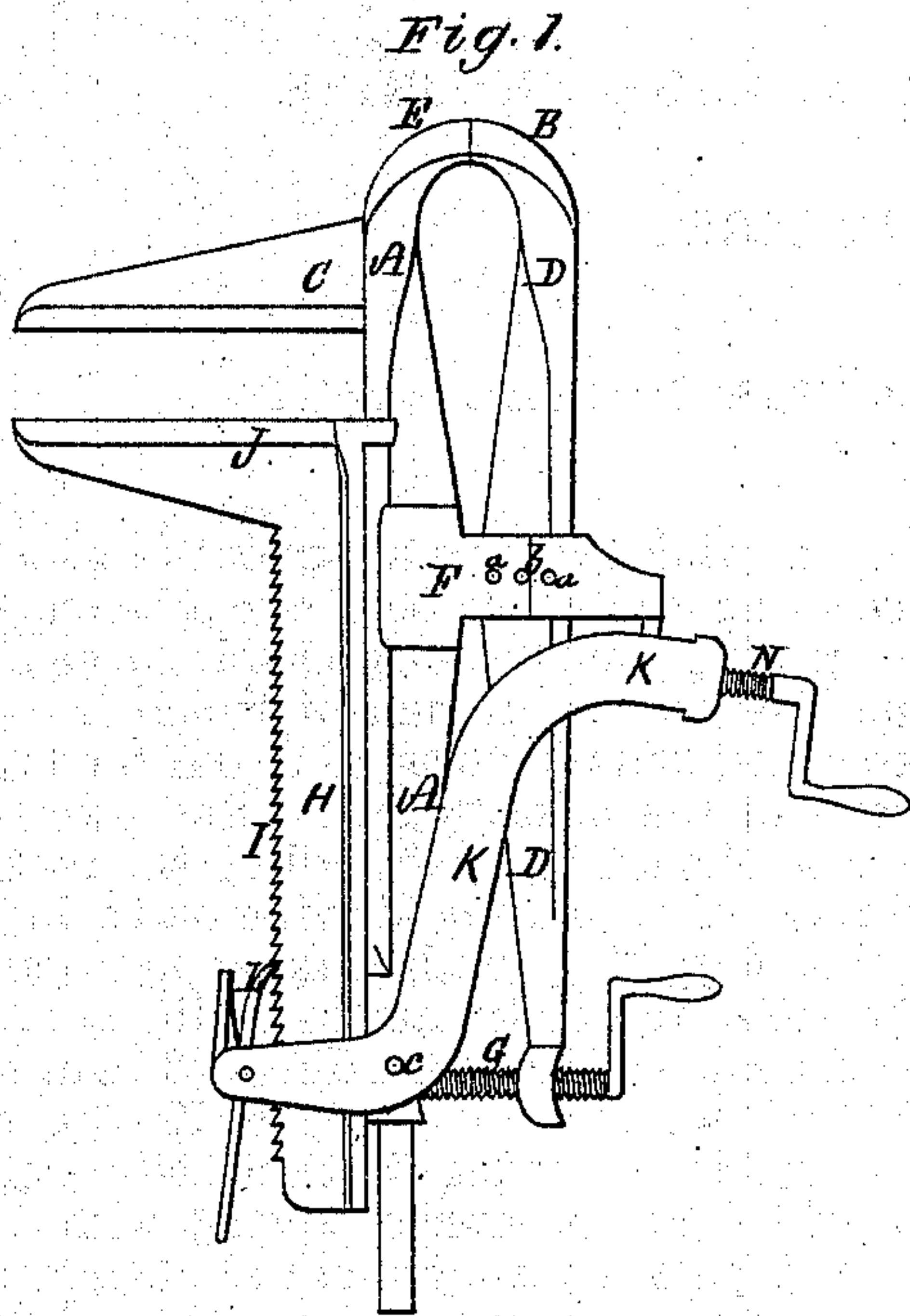


Russell Phillips' Combination Vise and Hand Screw

No. 119,280.

Patented Sep. 26, 1871.



Witnesses

Chas. B. Damon,
Edw. Griffiths.

Russell Phillips.

by his attorney,
Frederick Curtis.

UNITED STATES PATENT OFFICE.

RUSSELL PHILLIPS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN VISES.

Specification forming part of Letters Patent No. 119,280, dated September 26, 1871.

To all whom it may concern:

Be it known that I, RUSSELL PHILLIPS, of Boston, in the county of Suffolk and State of Massachusetts, have made an invention of a new and useful implement or tool which I denominate a Carpenters' Combined Vise and Hand-Saw; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawing making part of this specification, and in which—

Figure 1 is a side elevation; Fig. 2, a vertical and longitudinal section; Fig. 3, a rear-edge view; and Fig. 4, a longitudinal section of my invention.

The drawing represents at A one leg of a vise, the upper end or jaw of such leg being shown at B, while extending rearward from it is a horizontal shelf or abutment, C, for supporting, in connection with a sliding jaw, (hereinafter mentioned) the vise upon a bench, this construction of one portion or leg of a vise being substantially the same as in many now in use. The opposite and (when used as a bench-vise) outer leg is shown at D, and its jaw at E, such leg being fulcrumed to a bracket or arm, F, extending horizontally from the primary jaw at its center, or thereabout, this outer leg D and its jaw being operated by a screw, G, screwed through its lower end and abutting against the adjacent end of the former, by which great leverage is obtained to force the two jaws B and E together. In order to obtain wide variations in the distance intervening between the two jaws B and C in adapting objects of considerably different bulk thereto, a series of holes, *a a*, is formed in the offset or bracket F which supports the oscillating jaw D, the fulcrum *b* being changed from one to the other as occasion requires. H in the accompanying drawing represents a flat plate sliding upon the rear face of the leg A and confined thereto in a suitable manner, the outer edge of such plate being fashioned into a toothed rack, I, while its upper extremity is provided with a rearward right-angular extension or abutment, J, which, in conjunction with the abutment C of the leg A which surmounts it, produces a hand-screw or clamp for carpenters' use. This abutment or clamp-jaw J may be swiveled to the plate H in order to adapt the parts to irregular or tapering objects, and, in fact, should be so made; and, whether rigid or oscillating, serves,

in conjunction with the abutment C, as a means of securing the whole device to a bench. K in the drawing denotes a furcated, curved, or S-shaped lever, the fulcrum of which is a pin, *c*, passed horizontally through it and the lower extremity of the primary leg A, the lower end or the base of such lever straddling the rack I and carrying an oscillating driving-pawl, M, which is pivoted to it in such manner as to take into the teeth of the rack when ascending, and to slip over the same when descending. The upper and front end or handle of the lever K encompasses the movable jaw or leg D of the instrument, and is provided at its outer extremity with a screw, N, which passes through and abuts against the bracket F which supports the said movable jaw, the length of the lever K being sufficient for the purpose. Owing to the short distance between the base and fulcrum of the lever K and the length of its handle, I am enabled by the use of the screw N to exert a very powerful action upon the rack I, and to clamp an object between its jaw and the abutment C with a great pressure by the expenditure of very little power on the part of the artisan. To effect extended depressions of the plate H or its rack I for the purpose of adapting the hand-screw of which it constitutes a part to objects of varying capacity, the pawl L is to be disengaged from such rack, when both rack and jaw will drop of their own accord, or may be lowered or forced away from the abutment C as occasion requires. The rack and its jaw may be elevated or advanced toward the movable jaw without regard to or manipulating the pawl. The above description will, it is believed, afford an explanation sufficiently lucid to enable mechanics to make, understand, and use the invention to which it relates.

The advantages of my present invention are several and manifest: First, when used as a hand-screw or clamp the abutments or jaws C and J adapt themselves (especially when the latter is pivoted to the plate H) automatically to irregular or tapering objects, while with the ordinary hand-screw on the contrary, much time is occupied and annoyance experienced in adapting its jaws to any object. In addition to this ease of adaptation to irregular objects, I obtain more rapid and extended movement of the jaw when necessary, together with a much greater application of power, with less exertion than is

possible with the present hand-screw, so called. Second, my improved combination instrument may be used at pleasure either as a hand or bench-vise. Third, while I am enabled to obtain an extended and rapid movement of the leg D, I am enabled, by the mode herein adopted of pivoting and operating it, to force it toward the primary jaw B with a very great increase of power over that possible to be attained by pivoting it at its lower end and operating it by direct and sole action of a screw. Fourth, as hereinbefore alluded to, I obtain in one instrument, the functions of a hand-screw or clamp, and a vise—either a hand or bench-vise. Fifth, I am enabled to produce the above combined instrument in cast-iron at an expense not exceeding that of an ordinary hand-vise and much below that of a bench-vise. Sixth, the form and arrangement of the

jaws C and J constitute a wrench which serves a very useful purpose, as they may often-times be inserted within localities inaccessible to the jaws of an ordinary wrench.

I claim—

1. The combination, with the leg A of a vise provided with the jaw C, of the movable jaw J with its rack and plate sliding upon said leg and operated by the lever K and pawl L, as herein shown and described.

2. A bench-vise and hand-screw or clamp, composed of the parts herein specified, constructed and arranged to operate as shown and set forth.

RUSSELL PHILLIPS.

Witnesses:

FRED. CURTIS,
ED. GRIFFITH.

(21)