

(No Model.)

J. F. KRAYE.

HAND TOOL.

No. 341,664.

Patented May 11, 1886.

Fig. 1.

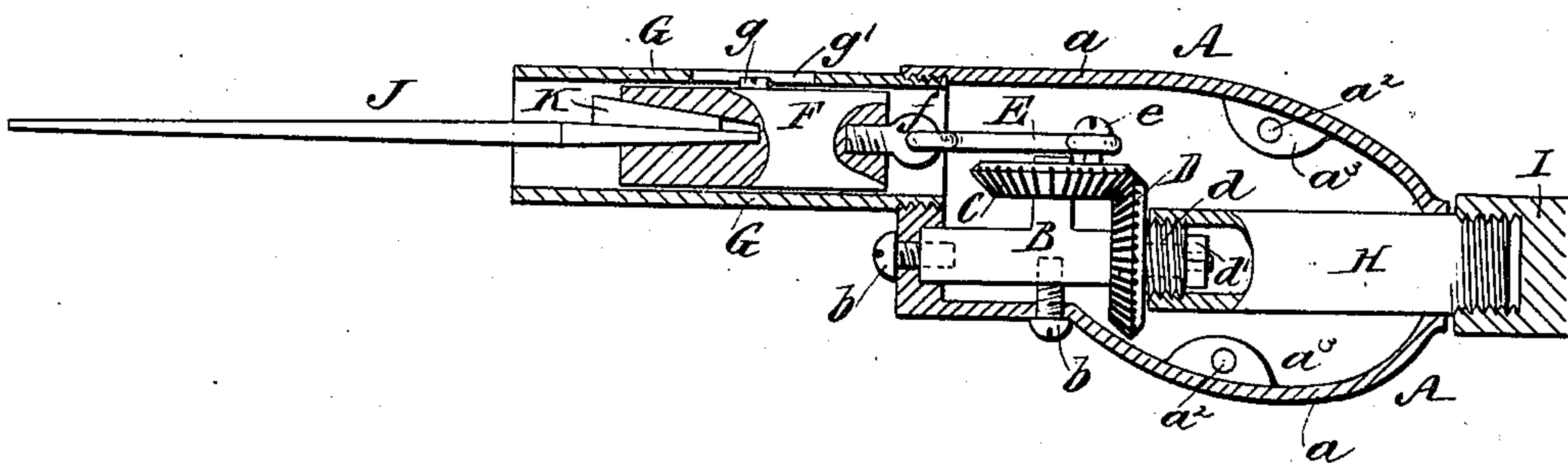
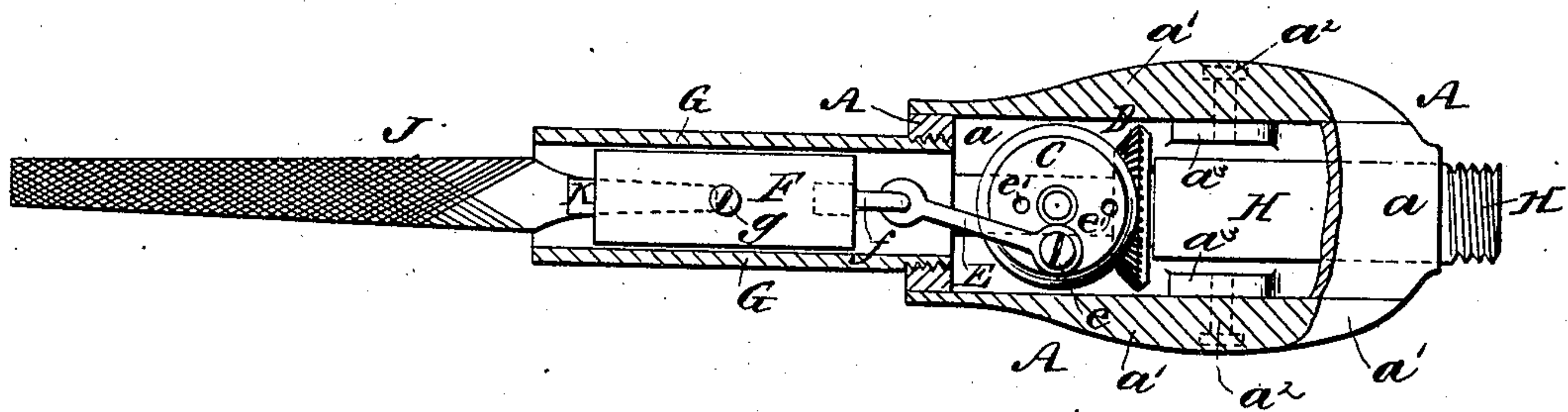


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

J. FREDERICK KRAYER, OF PHILADELPHIA, PENNSYLVANIA.

HAND-TOOL.

SPECIFICATION forming part of Letters Patent No. 341,664, dated May 11, 1886.

Application filed October 13, 1885. Serial No. 179,823. (No model.)

To all whom it may concern:

Be it known that I, J. FREDERICK KRAYER, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Reciprocating Hand-Tool, of which the following is a full, clear, and exact description.

My invention relates to that class of devices adapted to be held in the hand and to be operated by or from a flexible shaft for guiding the file, saw, or other reciprocating tool held by it to and over any part of the work, such as in file-finishing castings and in free-sawing, or in other work; and the invention has for its object to provide a simple, inexpensive, and durable hand-tool which may be operated easily and effectively in performing work of this nature.

The invention consists in certain novel features of construction and combinations of parts of the hand-tool, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a longitudinal sectional side elevation of my improved reciprocating hand-tool with a file held therein; and Fig. 2 is a plan view, with the stock or handle in section.

The letter A indicates the handle or stock of the tool, which consists of a central rib portion, *a*, having a squared front end and a rear part convexed vertically at the top and bottom, and the opposite side parts or plates, *a'*, which are secured to the rib portion *a*, so as to inclose the space within it, by means of screws *a''* (dotted in Fig. 2) passed through the sides *a'* into lugs *a'''*, cast on the part *a* of the stock.

To the part *a* of the stock A is held by screws *b b* the bearing B, in or to which the bevel-gears C D are journaled, so as to mesh into each other, and to the gear C is fitted eccentrically the screw *e*, forming a wrist-pin, to which is connected one end of the rod or pitman E, the other end of which is connected, preferably by a screw-eye, *f*, to the plunger F, which is fitted into the barrel or tube G, which is screwed into the forward end of the stock A, and in the plunger is fitted a screw-

pin, *g*, which works in a slot, *g'*, of the barrel, to prevent turning therein of the plunger as it is reciprocated by the driving-gearing.

At H is shown a shaft, which in this instance is made hollow or tubular, and is journaled in the back end of the handle A, and at its forward end is screwed to the collar *d* on the bevel-gear D, which gear is held on its shaft or stud by a nut, *d'*, as shown in Fig. 1.

Power may be applied in any approved way to the shaft H for rotating it; but I prefer to connect the shaft with a flexible rotating shaft, I, which will allow the stock A to be held in any required position for guiding the operating-tool.

Any tool which is to be operated by a reciprocating movement may be held to the plunger F in any approved way. The drawings represent a file, J, held to the plunger by any suitable clamping devices.

It is evident that when the shaft H is rotated by the driving-shaft I the plunger F will be reciprocated by the gearing C D and pitman E, and the file J or other tool held by the plunger may be guided to and over any part of the work being operated upon as the tool-stock A is held by one hand.

The bearing B may be cast with the part *a* of the stock A, instead of being held to the stock by screws, as shown.

The wrist pin or screw *e* may be set into any one of a series of holes, *e'*, in the gear C, to set it nearer to or farther from the axis of the gear to shorten or lengthen the stroke of the plunger and its operating-tool, as may be desired.

After unscrewing the pin *g* from the plunger F the barrel G may be unscrewed from the stock A, and the plunger may be unscrewed from the screw eye or pin *f*, to allow files, saws, or other tools to be more conveniently fixed to the plunger, and the parts may easily be connected again in operative relations, as shown in the drawings.

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

1. A reciprocating hand-tool consisting of the hollow handle A, having the bearing B, and provided with the tubular extension G, the gear-wheels C D, journaled on said bearing, the plunger F in the tubular extension G, the pit-

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man E, connected to the gear-wheel C and plunger F, and the tubular shaft H, substantially as herein shown and described.

2. In a reciprocating hand-tool, the combination, with the hollow handle A, having the bearing B, and provided with the slotted tubular extension G, of the gear-wheel provided with the wrist-pin e, the gear-wheel D, provided with the stud d, the plunger F, provided with the pin g, working in the slot of the tubular extension G, the pitman E, connected to the plunger and to the wrist-pin e, and the hollow shaft H, having its rear end journaled in the handle

and its forward end connected to the stud d of the gear-wheel D, substantially as herein shown and described.

3. In a reciprocating hand-tool, the combination, with the hollow handle A, of the bearing B, and the screws b, for securing the bearing-handle, substantially as herein shown and described.

J. FREDERICK KRAYEY.

Witnesses:

JOSEPH QUEIN,

HENRY D. S. QUEIN.