

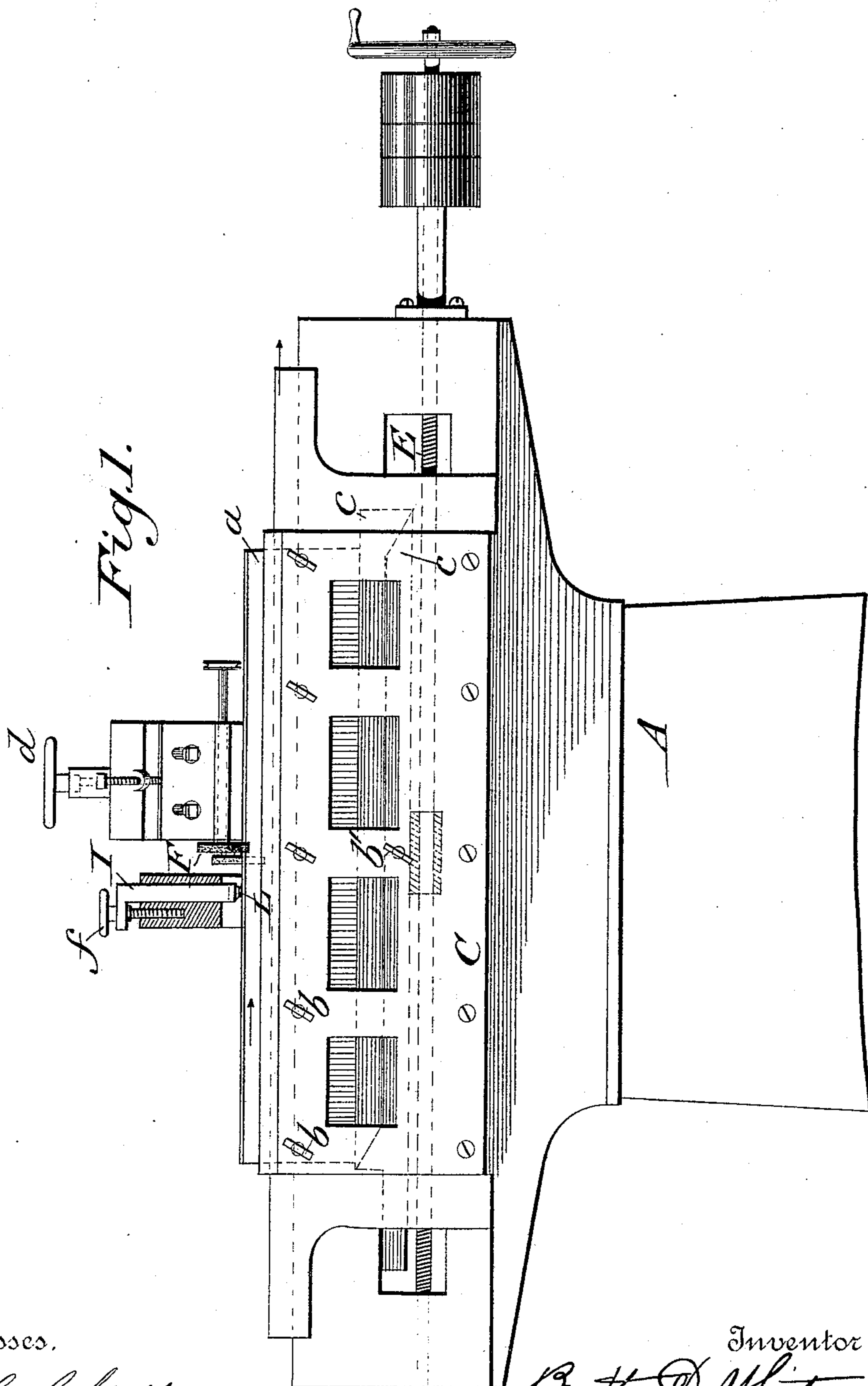
(No Model.)

2 Sheets—Sheet 1.

B. D. WHITNEY.
SHARPENING MACHINE.

No. 390,931.

Patented Oct. 9, 1888.



Witnesses.

H. H. Schott.
Fred E. Tasker.

Inventor.

Barton D. Whitney.
By *his Attorney John C. Parker.*

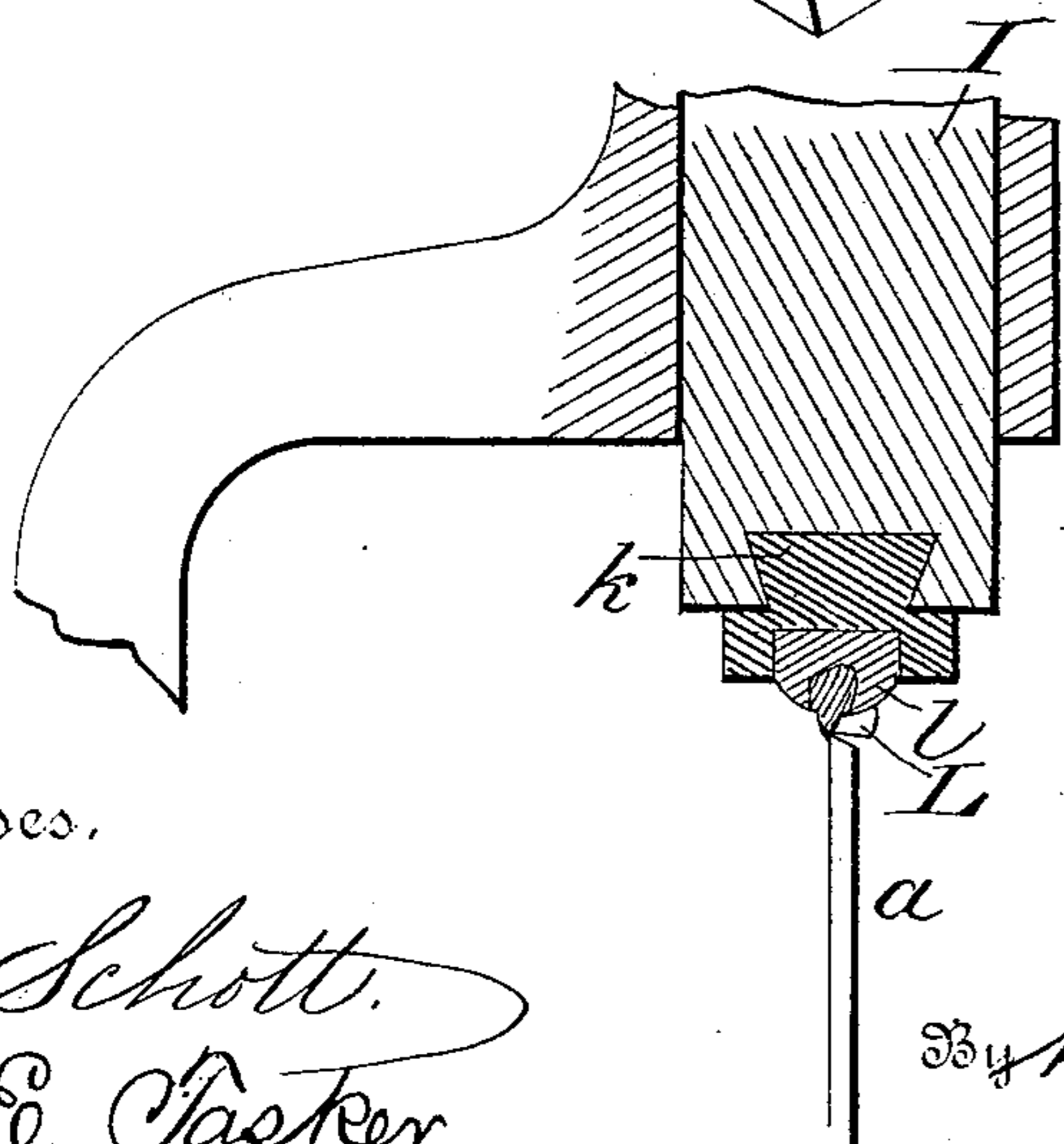
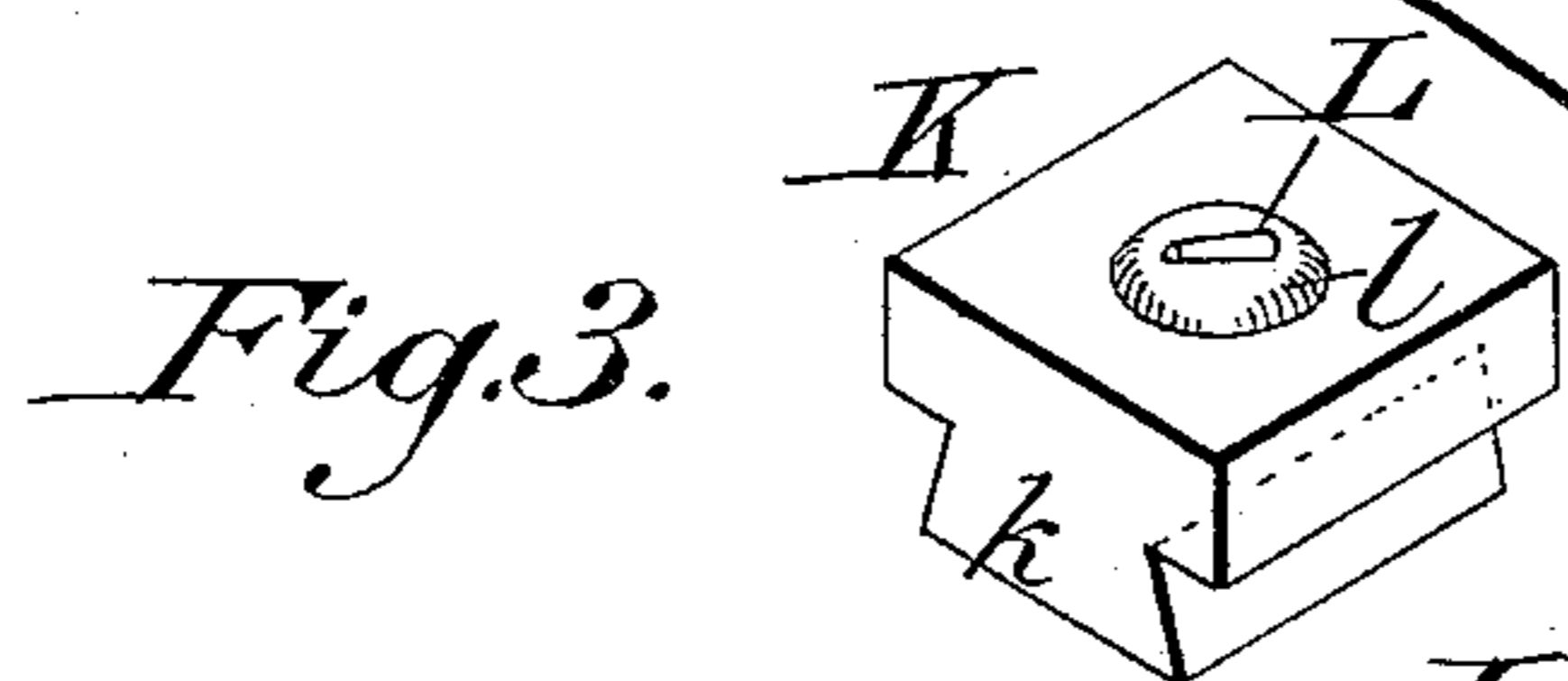
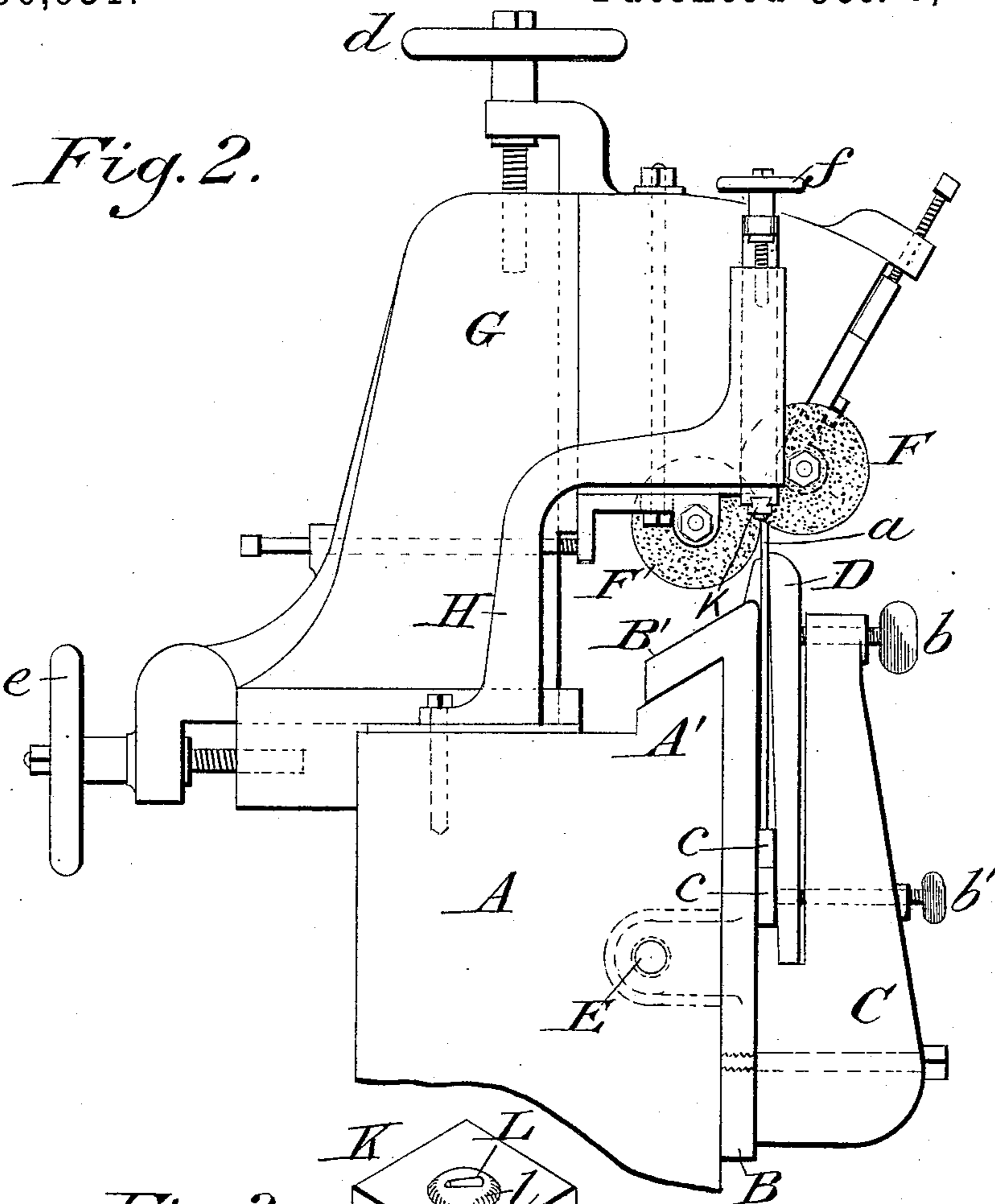
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UNITED STATES PATENT OFFICE.

BAXTER D. WHITNEY, OF WINCHENDON, MASSACHUSETTS.

SHARPENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 390,931, dated October 9, 1888.

Application filed November 9, 1887. Serial No. 254,685. (No model.)

To all whom it may concern:

Be it known that I, BAXTER D. WHITNEY, a citizen of the United States, residing at Winchendon, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Sharpening-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in sharpening-machines used for the purpose of producing a more perfect scraper-edge than can be produced by hand, and is an improvement on the machine for which Letters Patent No. 147,536 were granted to me on the 17th day of February, 1874.

It consists, essentially, in a diamond burnisher, with which the ground edge of the scraper-blade is brought into contact, and thereby turned uniformly and perfectly, the object of the invention being to find a material that will withstand and overcome the resistance of the hardened steel edge of the scraper-blade and successfully produce good turned and burnished scraper-edges, there being no means heretofore known of making steel hard enough to successfully perform that duty; and it consists, also, in certain peculiarities in the construction, arrangement, and combination of the parts of the machine with which the burnisher is used, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of my improved machine for grinding and turning a scraper-edge. Fig. 2 is an enlarged left-end elevation of the same. Fig. 3 is an enlarged detail perspective of the diamond burnisher. Fig. 4 is a cross-sectional view of the diamond burnisher with means for supporting it, and shows the manner in which it operates upon the scraper-edge. It also shows in enlarged outline the manner of contact between the diamond and the edge for turning the latter.

Like letters of reference designate like parts throughout all the figures.

A denotes the bed or main supporting-frame of my improved sharpening-machine. It is constructed in any suitable and desirable man-

ner and of any shape and size that will best adapt it for the purposes in view. Upon one side of this bed, near the top, are arranged the longitudinally-movable devices which carry the knives to be sharpened. These devices consist of a vertical plate, B, having an inclined flange, B', along its top edge, which is seated upon an inclined face, A', on the top of the bed A. It will thus be seen that the plate B may be easily made to reciprocate back and forth, its flange B' sliding upon the face A'. Securely bolted to the plate B is a frame, C. Between the frame C and the plate B is an intervening space, in which is located a clamping-jaw, D. Between the clamping-jaw D and the plate B is placed the scraper-blade *a*, and held in the proper position for grinding and also for turning the scraper-edge. The clamping-jaw D is adjusted toward the plate B and away from the frame C by set-screws *b b'*. By means of these screws the jaw D may be set firmly against the blade, so as to hold it immovably in position, or the pressure may be relaxed, so as to permit the easy removal of the blade. Longitudinally between the clamping-jaws D and plate B are placed bars *c c*, (shown best in dotted lines in Fig. 1,) said bars being formed with inclined portions, as shown, so that by moving them longitudinally the height of the upper edge of the upper bar, upon which the blade *a* rests, may be accurately adjusted so as to bring said blade into the proper position relatively to the grinding-wheels or the burnishing-tool.

The reciprocation of the blade-carrying frame-work is effected by any suitable and desirable mechanical means. In the drawings I have shown one way of accomplishing this movement by means of a longitudinal screw, E, which passes through a bearing projecting from the plate B into a slot formed in the bed A for its reception, and which also contains the screw. The outer end of the screw is provided with a hand-wheel for its manipulation. By turning the hand-wheel the blade-carrying devices are moved back and forth, and the blade is consequently passed beneath the grinding and burnishing tools. Upon the shaft of the screw is also placed a pulley, so that power may be applied for the purpose of reciprocating the scraper-plate when it is found inconvenient to do this by

hand. The grinding-wheels F F are supported in an elevated transverse frame, G, so that they may be adjusted laterally and vertically to give any form to the scraper-edge required, which will be perfectly straight and true from one end to the other.

In Fig. 2 it is clearly shown how the scraper-edge and the grinding-wheels are relatively located. It is unnecessary to particularize here concerning the exact structure and arrangement of the transverse frame G. It will be sufficient to state that it is mounted upon the bed-plate and is adjusted vertically by means of a hand-wheel, *d*, and laterally by means of a hand-wheel, *e*. Upon the main bed is also mounted another transverse frame, H, which is intended to carry the burnishing tool. One form of the frame is shown in Fig. 2. In this frame is arranged a bar, I, which slides vertically directly above the edge of the blade, said vertical adjustment being accomplished and regulated by any suitable device, such as the hand-wheel *f*. In the lower end of this bar is carried my improved burnishing-tool. Thus, by a manipulation of the hand-wheel *f*, the burnishing-tool may be brought into proper contact with the edge of the scraper. The burnishing-tool, which forms the essence of my present invention, is clearly shown in perspective in Fig. 3. It consists of a metallic block, K, having a dovetail, *k*, on one side, said dovetail being preferably tapered, so that when it has been inserted into the dovetailed groove in the lower end of the sliding bar I it will be firmly held therein in a manner to be removable from one side, but not from the other. The wedging form of the dovetail is such that when the scraper is being passed beneath the burnisher the tendency of the pressure upon the burnisher will be to seat the dovetail more firmly in its socket. Obviously, however, the burnisher can easily be removed when pushed from the opposite direction.

The diamond L is set into the face of the metallic block K. In order to make a firm setting, I preferably place a piece of copper, *l*, in the block K, within which copper the diamond is firmly embedded. The diamond is of an elongated shape, its direction of greatest length lying in one of the lines joining two of the corners of the metallic block K. Hence the diamond has an oblique line of contact with the scraper-edge. Further, the edge of the diamond is slightly inclined from one end to the other, so that it does not lie in a plane truly parallel to the surface of the part K, but meets the scraper inclined in two directions. It will therefore be seen that in order to secure the best results in the use of my improved diamond burnisher I preferably impose upon the diamond two conditions as regard its position: first, that it shall be oblique to the direction of the scraper-edge, and, second, that it shall be slightly inclined from the plane of movement of said edge. As regards its inclination from the plane of movement, it

may be said that the inclination is approximately in the same direction as that of the ground edge of the scraper, only not so abrupt; hence, when the ground edge of the scraper meets it, it is turned as shown in Fig. 4. After the grinding of the scraper-edge by means of the grinding-wheels F F has been accomplished, the hand-wheel *f* or other device which governs the diamond burnisher will be manipulated so as to bring said burnisher into contact with the ground edge of the scraper, so as to enable said edge to be properly turned to give it the characteristics of a scraper-edge. The blade is then passed beneath the burnisher and in contact with the diamond. The scraper-edge thus produced is uniform and perfect. The manner in which the burnisher turns the edge is shown clearly in the outline diagram of Fig. 4.

I do not intend to confine my invention to the exact arrangement of the diamond hereinabove described; but I claim the right to vary the position and arrangement of the several parts and to locate the diamond in different ways for the purpose of accomplishing the same object.

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

1. In a machine for grinding and turning a scraper-edge, a burnishing-tool consisting of a diamond arranged to act upon the blade, substantially as described.
2. In a machine for sharpening and turning the edge of scraper-blades, the grinding-wheels and the diamond burnisher, arranged and operating as set forth.
3. In a machine for grinding and turning the edges of scraper-blades, a firmly-set diamond having an elongated shape and arranged to act upon the blade, for the purpose specified.
4. In a machine for turning the edges of scraper-blades, a diamond burnisher consisting of a diamond having an elongated shape and arranged to meet the scraper-blade obliquely thereto, substantially as described.
5. In a machine for turning the edges of scraper-blades, the diamond burnisher consisting of a diamond having an elongated shape and arranged to meet the scraper-blade obliquely thereto and inclined from the plane of movement of the edge of said scraper-blade, substantially as described.
6. In a machine for grinding and turning the edges of scraper-blades, the grinding-wheels and diamond burnisher consisting of an elongated diamond whose edge is oblique to the edge of the scraper and inclined from the plane of movement of said scraper, substantially as described.

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

BAXTER D. WHITNEY.

Witnesses:

SAML. A. PARKER,
WM. M. WHITNEY.