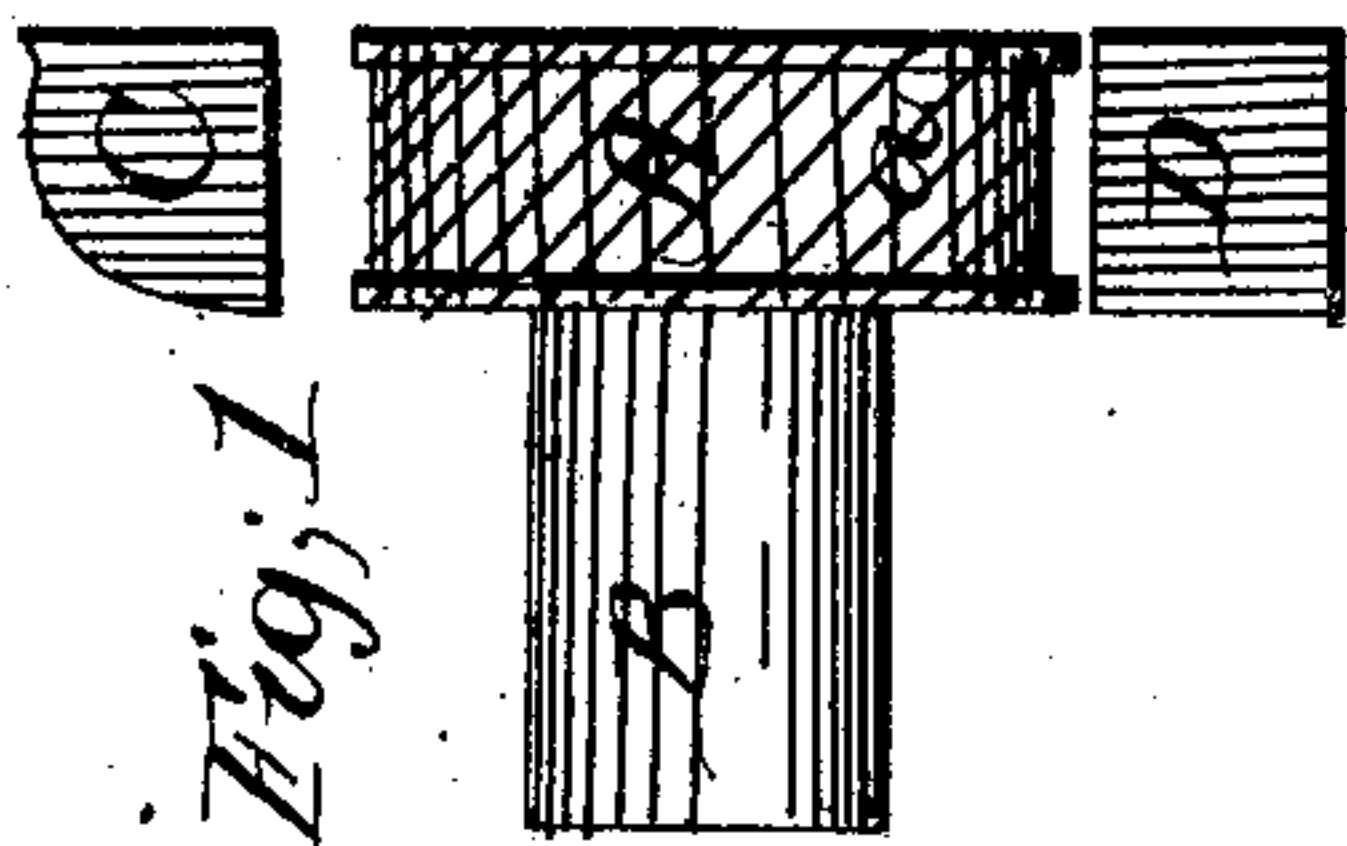
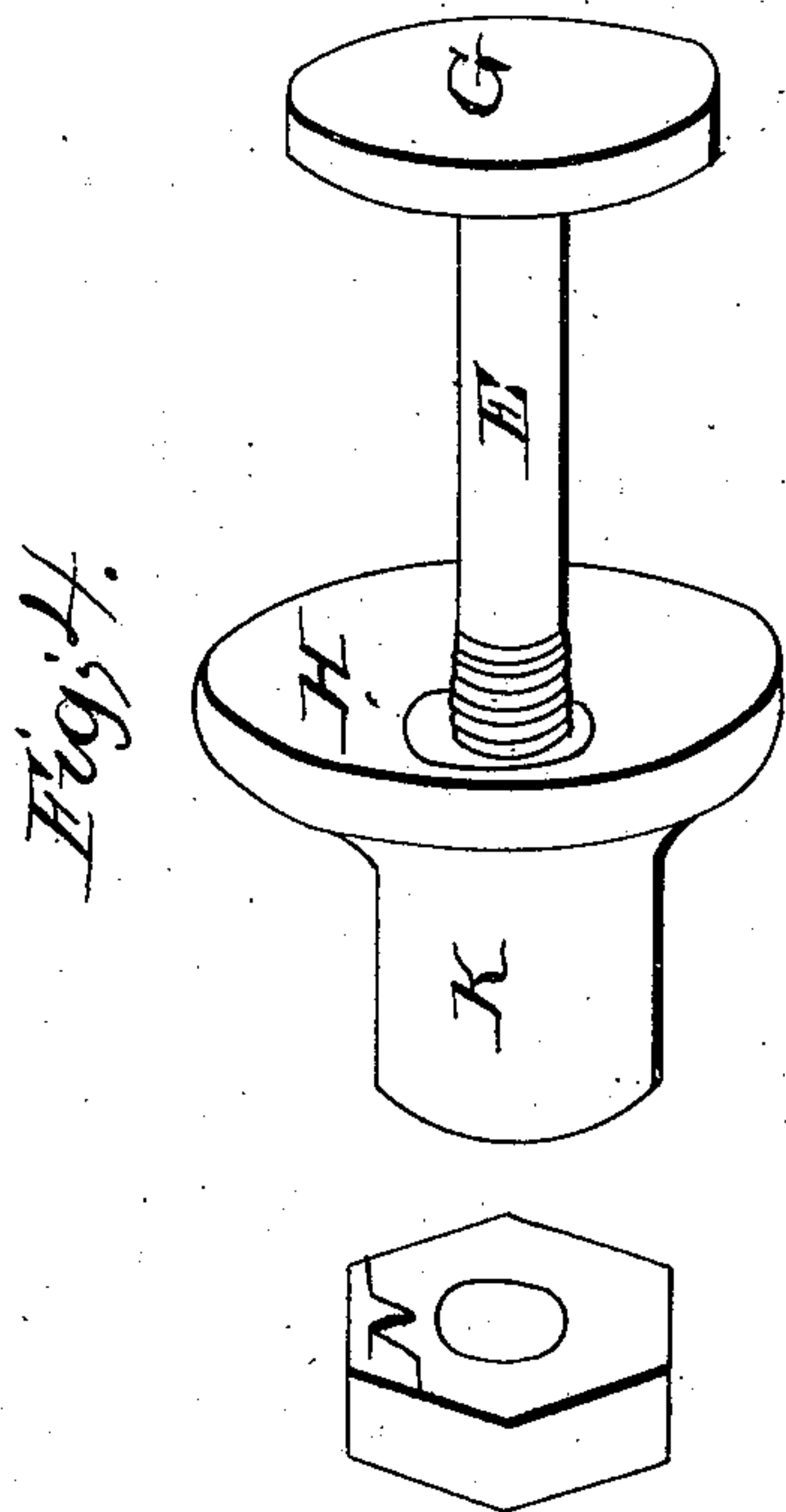
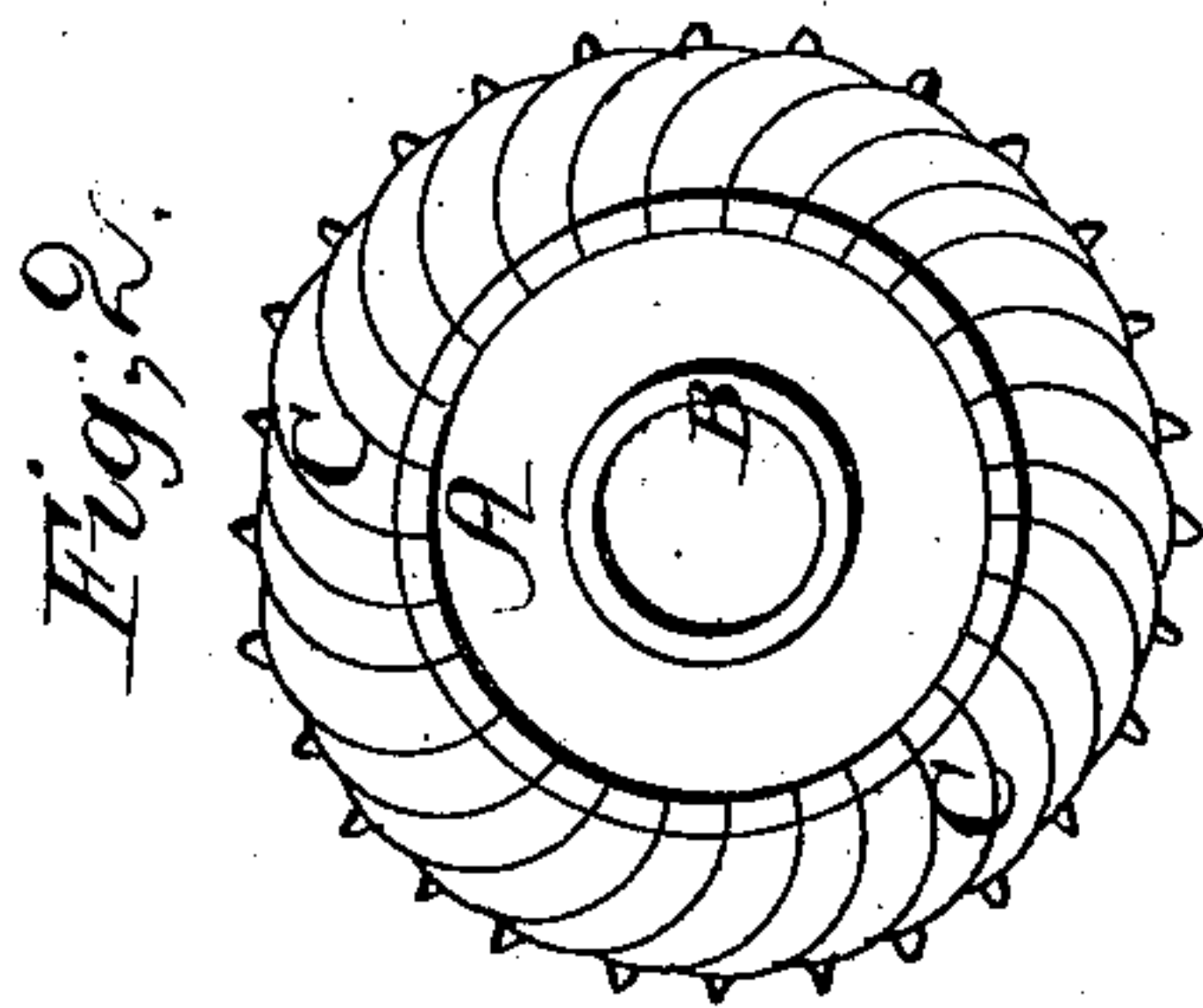
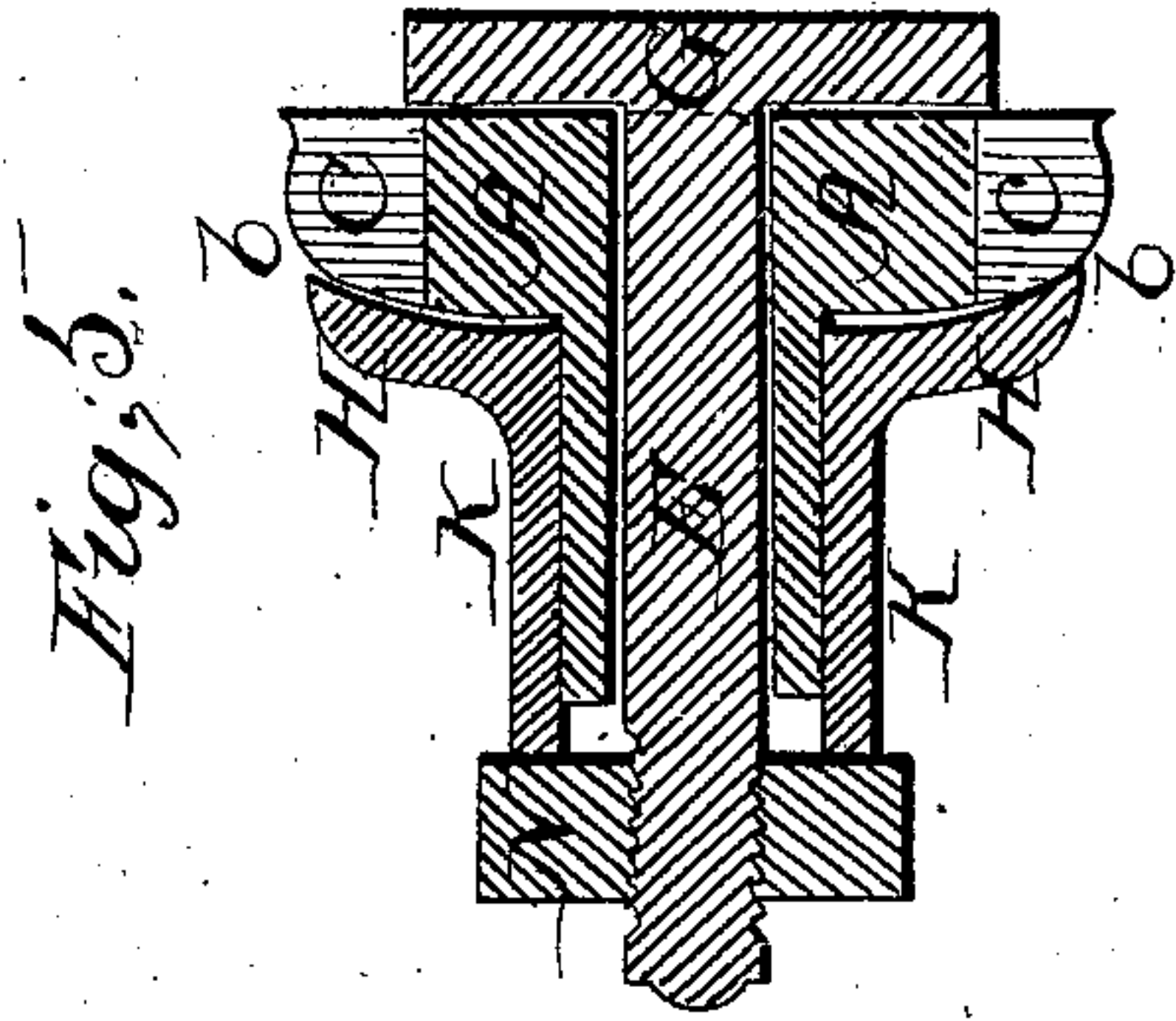
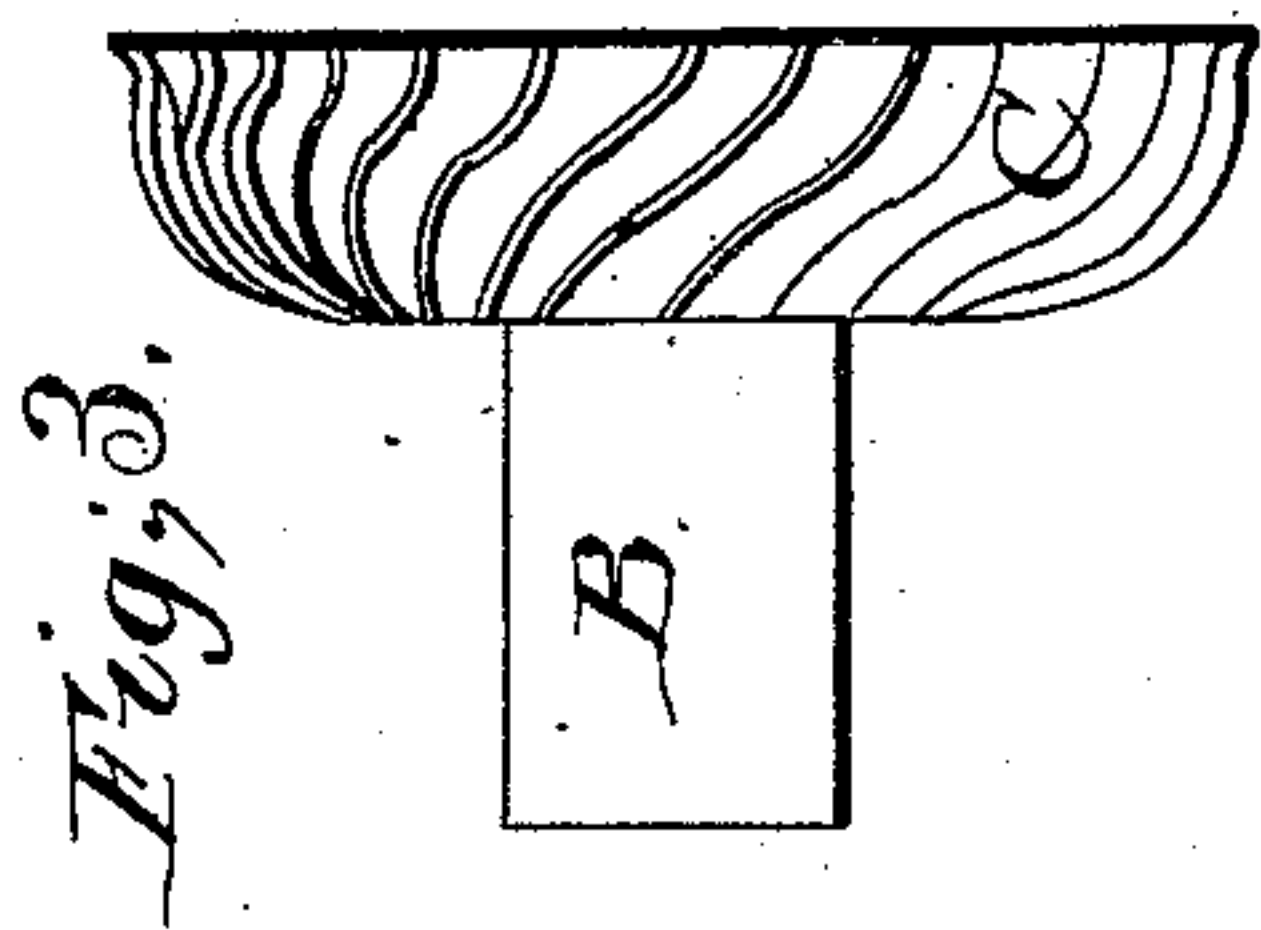


H. Fisher.

Making Knitting Burrs.

N^o 40,587.

Patented Nov. 10, 1863.



Witnesses;

*James
P. Van Hook*

UNITED STATES PATENT OFFICE.

HORACE FISHER, OF WATERFORD, ASSIGNOR TO HIMSELF AND FULLER
& SAFELY, OF COHOES, NEW YORK.

IMPROVEMENT IN TOOLS FOR MANUFACTURING KNITTING-BURS.

Specification forming part of Letters Patent No. **40,587**, dated November 10, 1863.

To all whom it may concern:

Be it known that I, HORACE FISHER, of the town of Waterford, Saratoga county, State of New York, have invented a new and useful Tool to be Employed in Manufacturing Knitting-Burs; and I declare the following specification, with the drawings forming part of it, to be a full and complete description of my invention.

Figures 1, 2, and 3 represent the form and construction of a knitting-bur; Fig. 4, the tool for making the bur, and Fig. 5, a sectional view showing the construction and operation of the tool.

Similar letters in the different figures denote the same parts of the apparatus.

The knitting-bur is a well-known part of the machinery of knitting-loom, employed in the formation of the stitch, and is constituted, as shown in Fig. 1, of a small metal cylinder, A, prolonged into a neck, B, with an orifice through its axis, through which, when on the machine, a fixed axle runs, upon which it revolves. It has a portion of its periphery turned down into a groove, so as to leave a low flange on both edges of the cylinder. Across the cylinder's face oblique slots *a a* are cut through the flanges and also just dipping into the surface of the face between them. Into these slots are set wings of thin steel, which, when completed, are shaped like C, but in the process of forming the bur are oblong, as shown at D. These pieces are slipped into the slots, and are then fixed permanently therein by soldering. Then the apparatus is put into a lathe, and the edges of the wings turned down from the form shown at D to that shown at C, the bur, when completed, appearing in profile as shown in Fig. 2, and edgewise as in Fig. 3. In doing this, as the metal is left soft to allow of this turning down, the wings will of necessity be bent more or less out of shape, so as to require after the turning a careful adjustment of them, in order to preserve their intervals true and surfaces flat and regular, an operation requiring very considerable expense of labor and time.

The object of my improvement is to save this expense, and consists, first, in the employment of wings punched out of thin steel, and hardened, (instead of using soft metal,) of the proper form when complete, like C.

The wings are inserted into the slots *a*, to be soldered to the cylinder. Now, it is necessary that these wings should be placed in their relative positions with the greatest accuracy, for, being of hard metal, they cannot be rectified by turning or filing. My tool, the subject of this invention, is intended to perform this service, and is constructed as shown in Figs. 4 and 5. E is a metal spindle having at one end a head or button, G, a trifle larger in diameter than the cylinder A, and on the other a screw-thread. A follower or collar is fitted to slide upon the neck B of the cylinder, being a cylinder, K, expanded at one end into a cup or flange, H, large enough in diameter to project beyond A, and by its concave or curved rim at *b* to fit accurately against the edges of the wings. The follower, when in place, projects beyond the neck B, so that a nut, N, being screwed upon the end of E, by pressing upon the end of K, will force H firmly against the wings G, and press them home to their proper position upon the surface of A. It is manifest that being held firmly between the button G and the curved and fitting rim at *b*, the wings, if accurately made, must be held exactly in their true positions. It becomes then only necessary to slip the wings into their slots upon the cylinder, and then applying the tool to screw up the nut, which at one operation will bring every wing to its true position in reference to the others without requiring a separate adjustment of each one. This done, the solder is applied and the bur is completed.

This tool, by performing at one prompt operation the placing of the wings accurately and holding them in their places, dispenses with the process of turning down the wings to shape and the adjustment of each wing separately, and thus permits the use of hardened steel for the wings, instead of soft metal, combining the saving of time and labor in constructing the bur, with the use of a much more durable metal for the wings.

The tool can be used without the follower by drawing up the button G against A, by screwing the nut N against the end of neck B. The wings after insertion can then be driven up with a hammer against G, and so adjusted to their places, and may remain there during the process of soldering, provided each wing fits

its groove tightly; but this process, although a saving as compared with the old process, does not complete the work as advantageously as does the use of the complete apparatus.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of a spindle, E, and its

button G, screw and nut N, with a follower, K, and collar H, substantially as described, and for the purposes set forth.

HORACE FISHER.

Witnesses:

E. J. MILLER,

RICHD. VARICK DE WITT.