

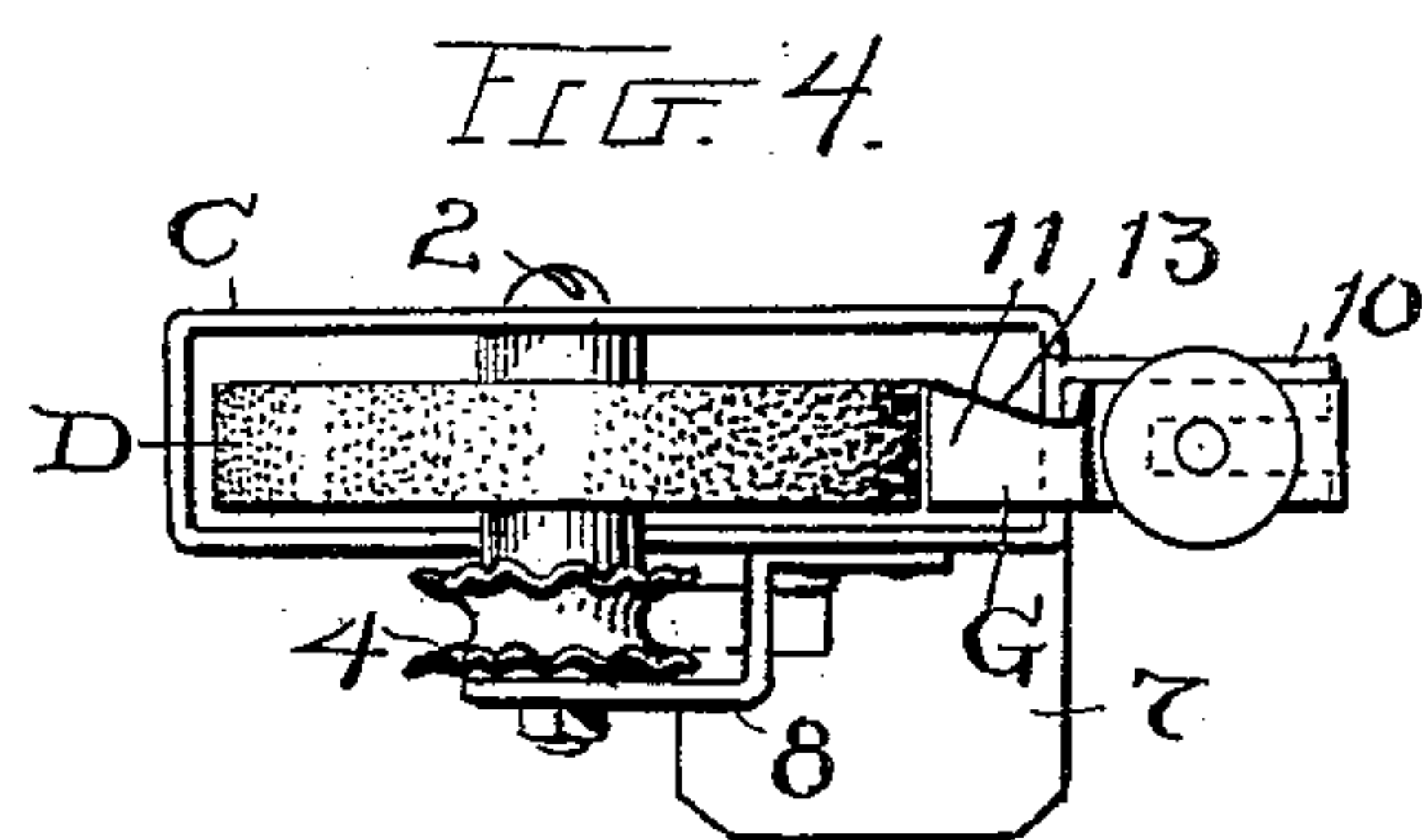
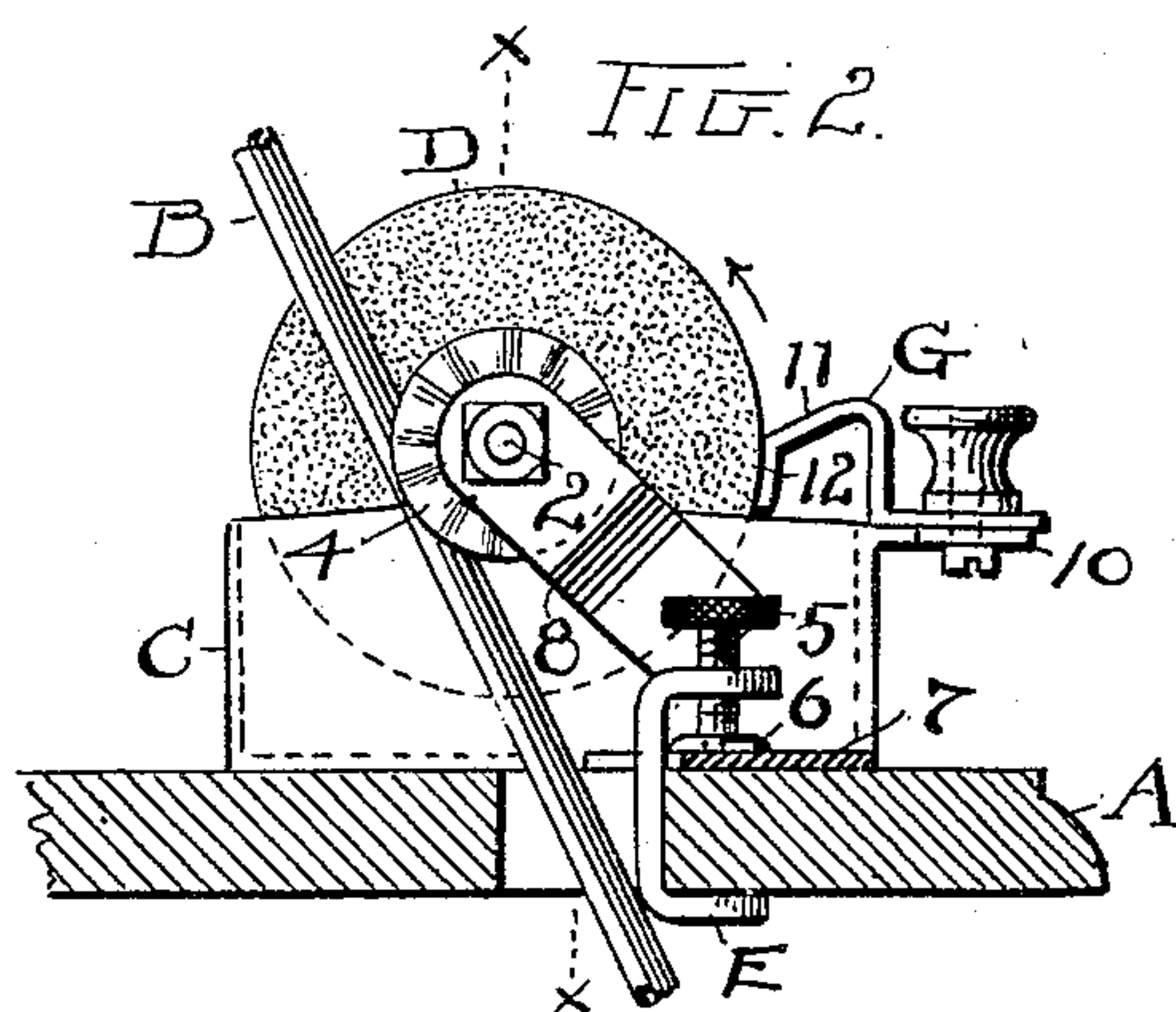
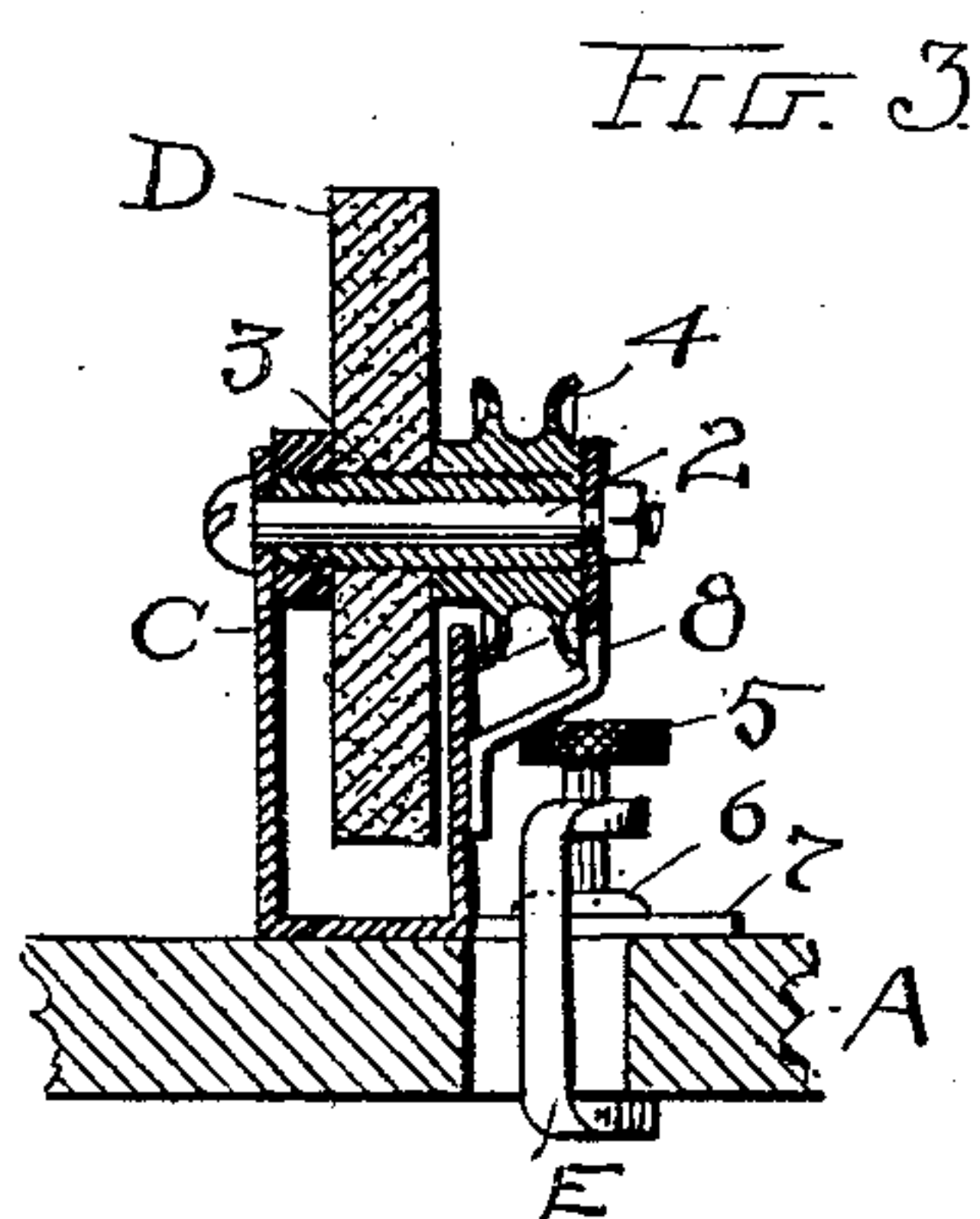
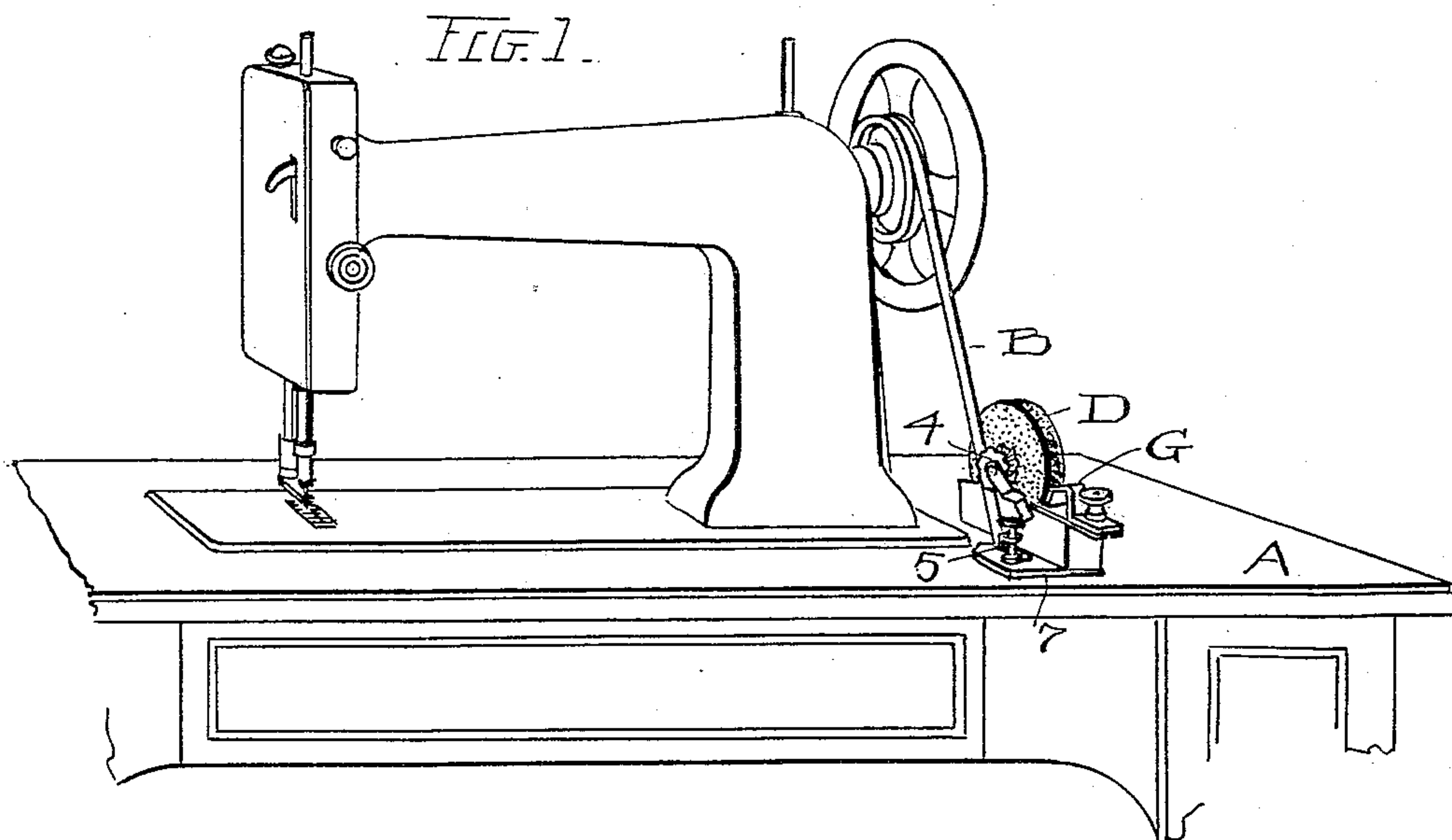
No. 704,324.

Patented July 8, 1902.

S. P. HASTINGS.  
GRINDING DEVICE.

(Application filed Aug. 31, 1901.)

(No Model.)



ATTEST

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# UNITED STATES PATENT OFFICE.

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## GRINDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 704,324, dated July 8, 1902.

Application filed August 31, 1901. Serial No. 73,964. (No model.)

*To all whom it may concern:*

Be it known that I, SETH P. HASTINGS, a citizen of the United States, residing at Wellington, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Grinding Devices; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to grinding devices adapted to being attached to or operatively connected with sewing-machines; and the invention specifically consists in an attachment comprising a grinding or sharpening wheel and means for its attachment and operation and for supporting and fixing the relation of the article to be ground in respect to the grinding-wheel, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the top of the sewing-machine, showing my new attachment in operative relation thereon. Fig. 2 is an enlarged side elevation of the attachment itself and a cross-section of the table or top of the machine on the line of the hole for the belt or line which runs the machine and showing the means for fastening the attachment to said table, as hereinafter more fully described. Fig. 3 is a sectional elevation on line X X, Fig. 2, disclosing particularly the means for supporting and rotating the grinder. Fig. 4 is a plan view of the grinding attachment alone.

In the invention as thus shown and described, A represents the top or table of the sewing-machine stand with the usual line or belt B for operating the same, and this machine may be any one of the many different kinds that are now being manufactured and used, provided it have a belt arranged with ledge to effect operative connection with my attachment.

As here shown the attachment comprises several parts, including, first, its own containing and supporting box C, which is relatively small, as the proportion it sustains to the top of the sewing-machine as seen in Fig. 1 clearly shows, and the said box is preferably

made of a light sheet metal, such as aluminum, so that it will be convenient for transportation in the mails and at the same time serve as a firm and sufficient support for the other mechanism. It will be seen that the said part is strictly box-shaped and narrow in cross-section, so as to be as small as practicable for this use.

D represents the "grinder," so called. This is a comparatively small disk of carborundum, preferably; but it may be of emery or other composite of natural stone, the kind of material not being specially particular, although carborundum is preferred because of its high efficiency as a grinder, because it does not glaze by work.

Several ways might be suggested for supporting grinder-wheel D; but the preferred and better way is the one shown, which comprises a short spindle 2, supported on box C, over which I place a sleeve 3, which has wheel D fastened thereon, so as to rotate therewith, and upon this sleeve I also fix a pulley or sheave 4, which preferably is fluted radially, so as to promote positive frictional engagement with belt B. Of course this pulley might have a plain surface, but one that will make more effective contact with the belt is deemed the best.

In operation the adjustment is placed in such relation upon the sewing-machine table that the belt retains its normal working position and the pulley 4 is brought up to the belt, so as to make frictional contact therewith, and thus drive the grinder. Therefore the attachment in no wise interferes with the regular operation of the machine and simply needs to be released and removed and the machine remains ready for use, as before.

A simple means for securing the attachment to the machine-table is the double-armed or right yoke E, which is adapted to be inserted through the hole in the table for the belt B and to engage against the under side of the table by its lower arm. A thumb-screw 5 through the upper arm of the yoke has a foot 6, which is swiveled and adapted to bear down upon a side projection 7 on the bottom and side of said box C and rigid therewith, so as to firmly fasten said box upon table A. I preferably place a soft lin-



ing on the under side of said projection 7, so as to prevent marring the finished surface of the machine-table.

The pulley or sheave 4 is shown here as being outside of box C, and a bracket or arm 8, fixed to said box, supports one end of the spindle, and the said arm is set at an inclination, as seen in Fig. 3, to take it away from belt B.

G represents a support and guide for the tool to be sharpened. It is preferably fashioned from a piece of sheet metal cut and shaped substantially as seen in Figs. 2 and 4 especially and is fastened by means of a thumb-screw to a rearwardly-projecting slotted arm 10 at the top of box C, adapted to afford adjustment back and forth of said support. Said part G has two guiding-surfaces 11 and 12, respectively. The surface 11 inclines toward the stone D just sufficiently to present the beveled edge of a pair of shears to the stone in the right relation for sharpening, while the down projection 12 lies in such relation to the stone that if a knife-blade be inserted from above the said portion 12 will serve as a guide and backing for the blade and help to hold it in proper relation to the stone for sharpening; but if a knife be sharpened the stone must revolve therefrom in the direction of the arrow; otherwise the knife would wedge into the space and stop the stone. Likewise in sharpening a pair of shears the better way is to have the stone travel in the direction of the arrow, so that only a light or delicate touch of the blade may be effected and whereby the best results are obtained. Needles are also supported against part G for sharpening. It should be understood that when the sewing-machine is running at the ordinary rate of speed the wheel D will have probably three thousand

revolutions a minute, and hence be capable of doing very rapid work on the edge of any tool even if the tool be brought into very light bearing contact.

In Fig. 4 it will be noticed that the support G has an inclined edge 13 at one side of its portion 11, which enables the member of the shears which is not being ground to be drawn in well opposite the center of stone D, and thus enable sharpening to begin on the other member up to its shoulder near its pivot.

What I claim is—

1. As a new article of manufacture, a grinding attachment for sewing-machines comprising the rectangular sheet-metal box C, having a side projection 7 at its side and bottom to secure it in place and a side projection 8 to support one end of the grinder-spindle, in combination with a spindle 2 fixed at one end in said projection 7 and at its other end to the opposite side of box C, a rotatable sleeve on said spindle and grinding-stone D thereon, and a sheave 4 fixed on said sleeve outside of box C, whereby the sheave and sleeve and grinder rotate together, substantially as described.

2. A grinder attachment for sewing-machines comprising a grinding-wheel and a supporting-box provided with a rearward projection 10 at its top rigid with the box, in combination with a rigid blade-support G fixed adjustably to said projection and having inclined portion 11 and down portion 12 next to said stone, substantially as described.

Witness my hand to the foregoing specification this 19th day of August, 1901.

SETH P. HASTINGS.

Witnesses:

R. B. MOSER,  
H. E. MUDRA.