

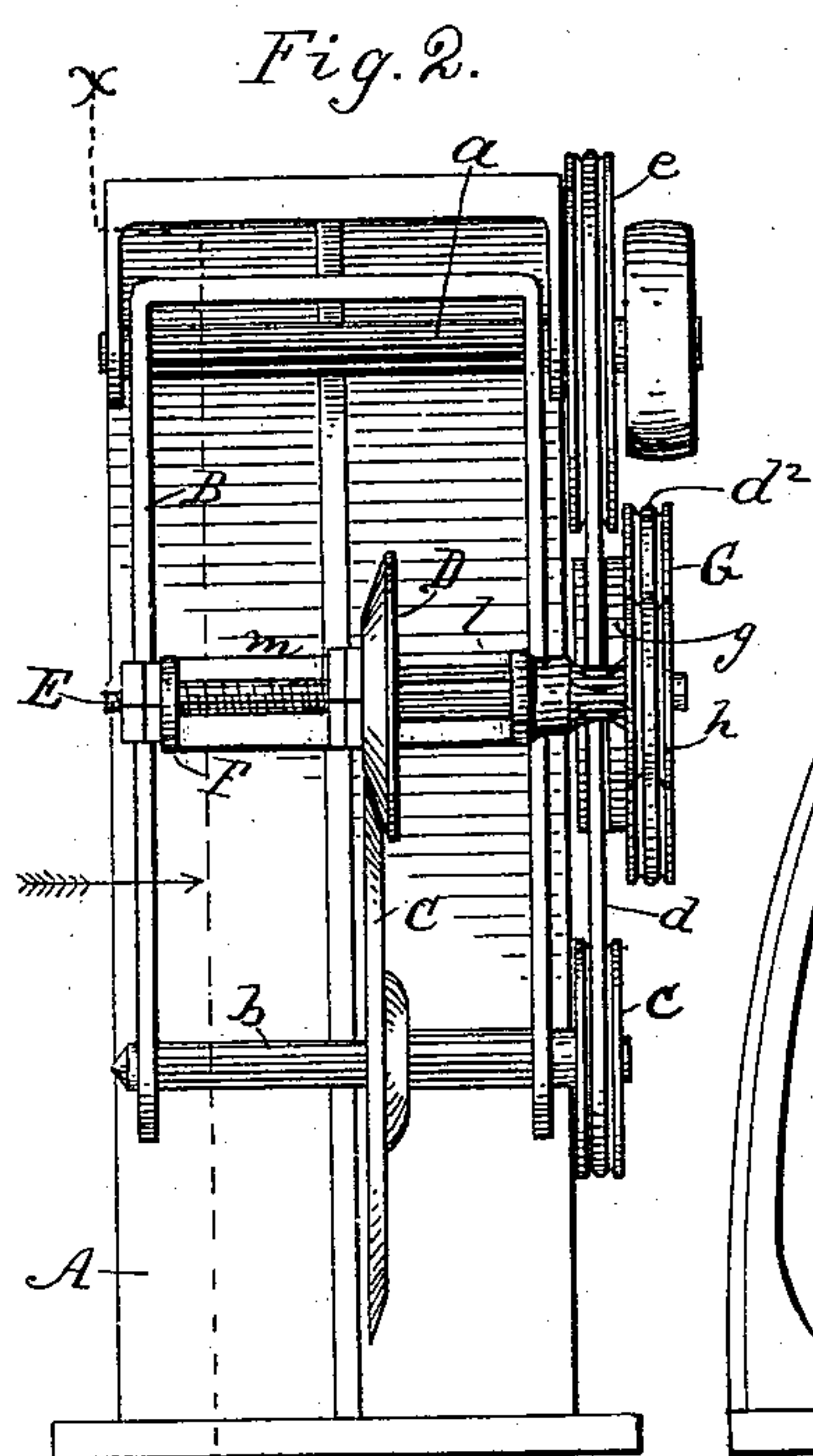
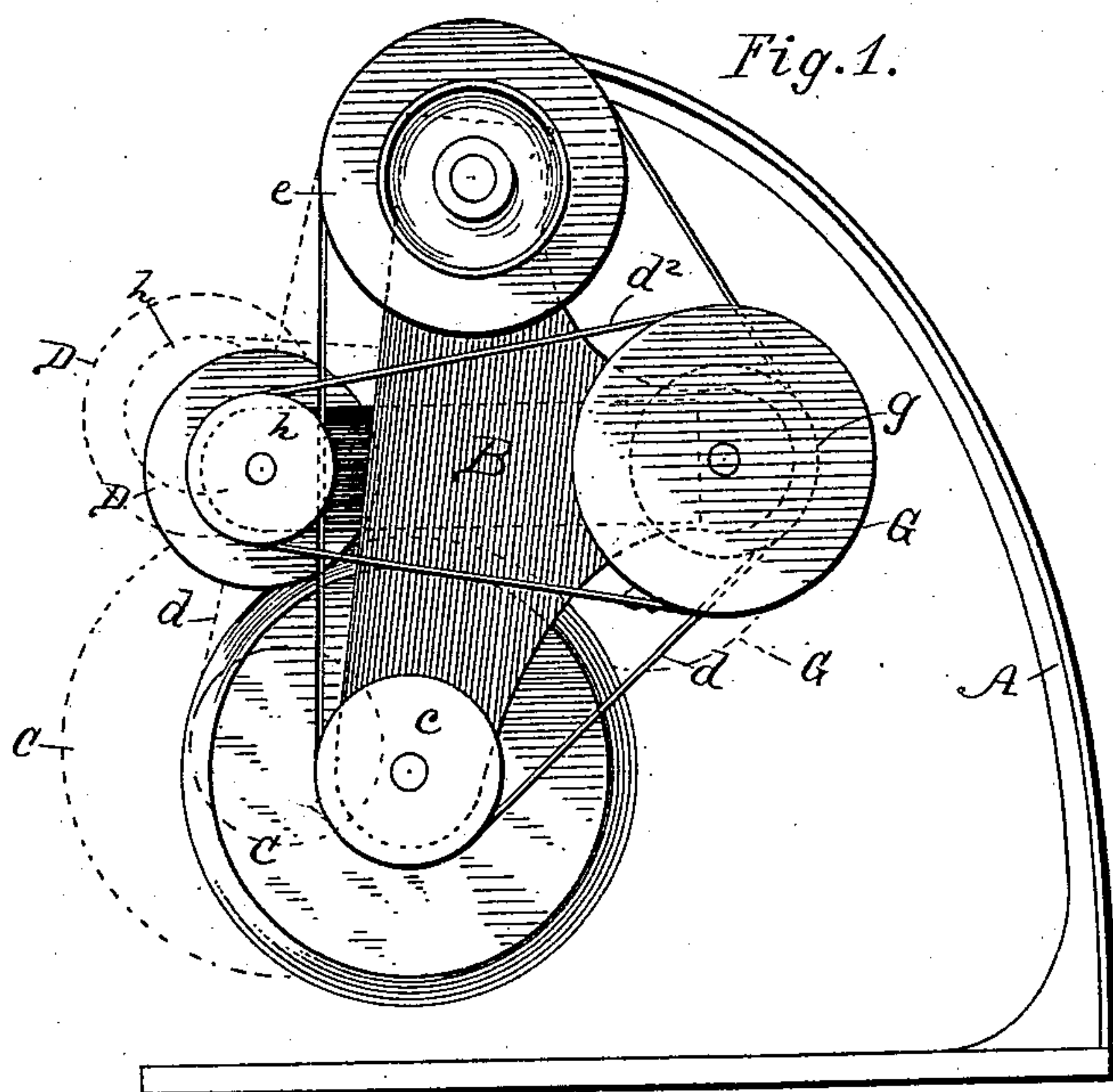
(No Model.)

R. O. OWEN.

DEVICE FOR SHARPENING MACHINE KNIVES.

No. 308,092.

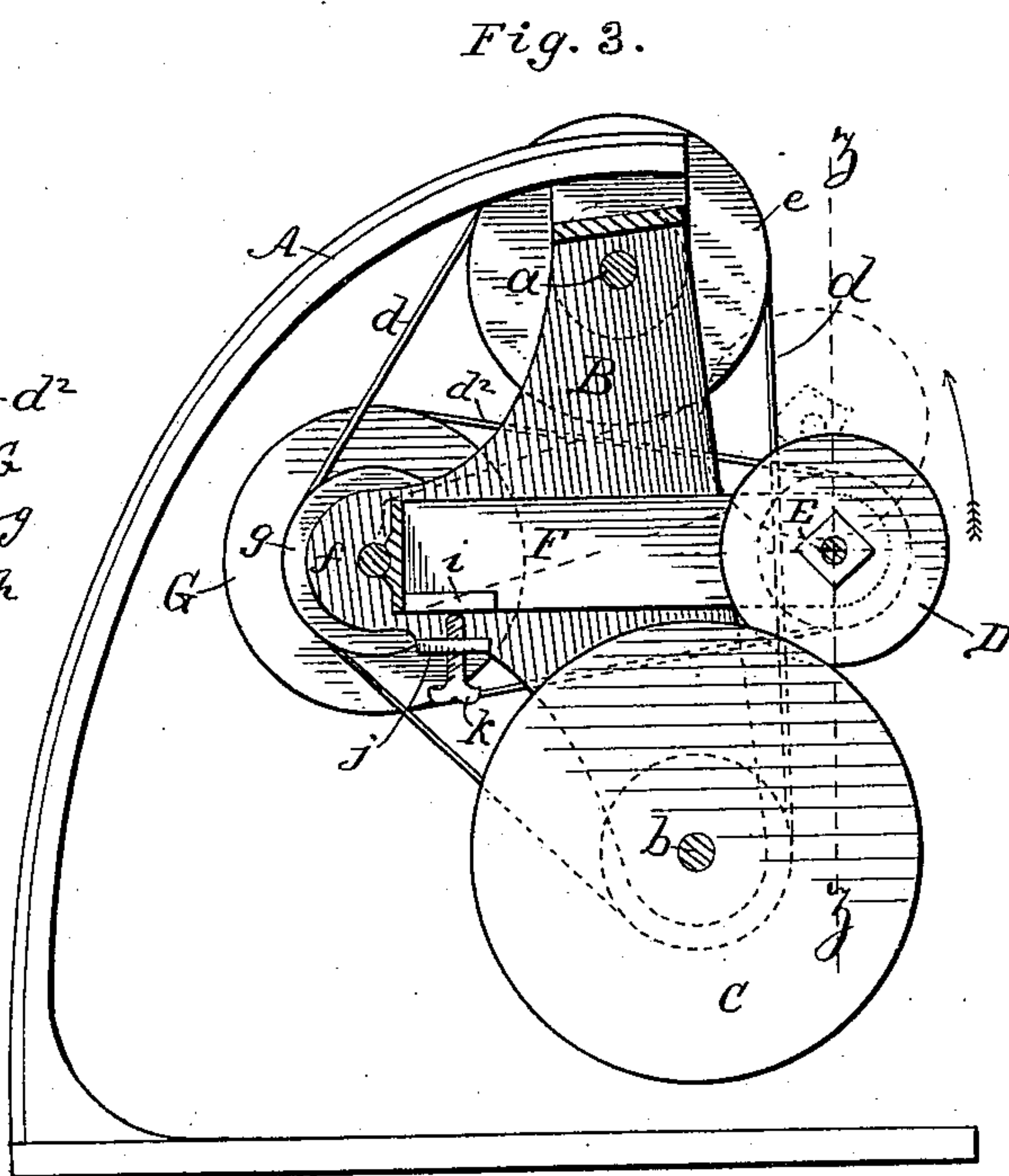
Patented Nov. 18, 1884.



WITNESSES:

Thos Houghton.

Edw. L. Byrne

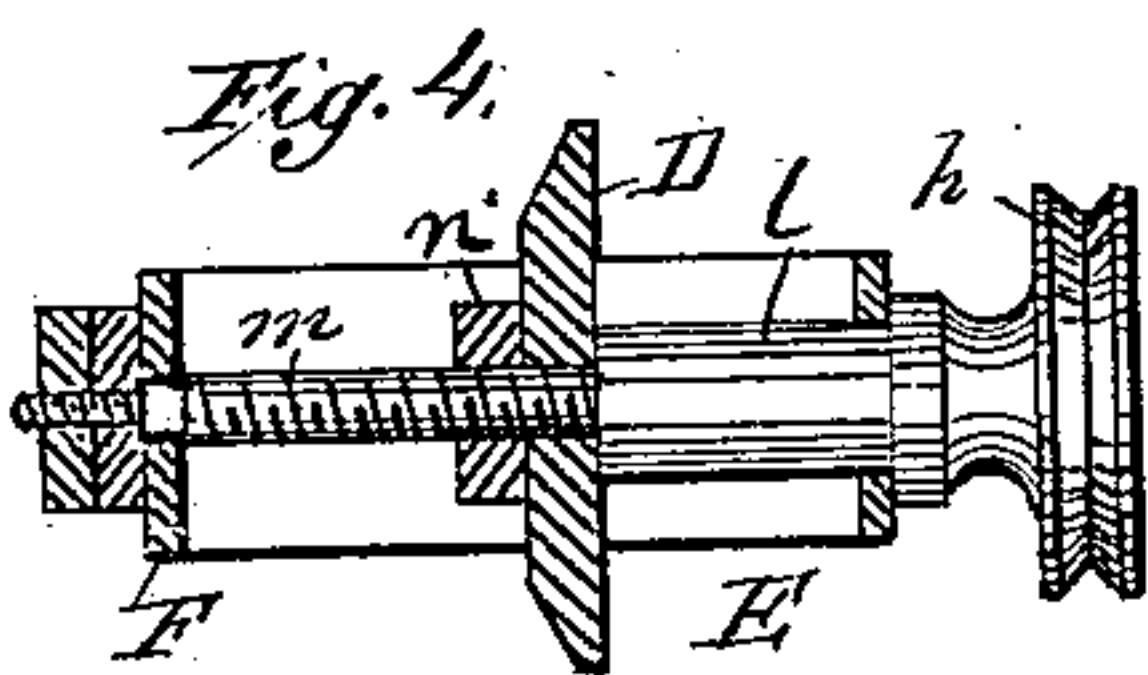


INVENTOR:

Robert C. Owen

BY

ATTORNEYS.



UNITED STATES PATENT OFFICE.

ROBERT O. OWEN, OF LYNCHBURG, VIRGINIA.

DEVICE FOR SHARPENING MACHINE-KNIVES.

SPECIFICATION forming part of Letters Patent No. 308,092, dated November 18, 1884.

Application filed March 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT O. OWEN, a citizen of the United States, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented certain new and useful Improvements in Devices for Sharpening Machine-Knives, of which the following is a description.

Figure 1 is a side elevation. Fig. 2 is a front elevation; and Fig. 3 is a vertical section through the line *xx* of Fig. 2, looking in the direction of the arrow. Fig. 4 is a sectional view on the line *zz* of Fig. 3, showing the connection of the grinder to its shaft and the shaft to its supporting-frame.

The object of my invention is to provide a device for sharpening all kinds of knives, whether rotary or reciprocating, which are incorporated in and form a part of an organized machine, so as to sharpen them while the machine is in motion, and thus avoid the loss of time incident to stopping the machine and removing the knife.

My invention consists in the peculiar construction and arrangement of sharpening disk or wheel mounted in a frame and arranged in relation to the machine-knife, so as to be adjusted to or from the same while the latter is in motion, as hereinafter fully described.

In the drawings, A represents any supporting bracket or frame which is attached to or forms a part of the machine. From this bracket is suspended, by means of shaft *a*, the knife-frame B, which at its lower end carries in bearings the knife-shaft *b* and rigidly-attached disk-knife C. The knife-shaft *b* has at one end, outside of the frame B, a grooved pulley, *c*, which is driven by a belt, *d*, from a grooved pulley, *e*, on the upper shaft, *a*, which derives its motion from the other parts of the machine in which it is incorporated.

D is a grinding-disk of emery-stone or hardened steel, which is detachably fixed to a shaft, E, just above the rotary knife, and which shaft is journaled in the ends of the U-shaped frame F, located within the frame B of the knife, and journaled in bearings at its back end, formed in rear offsets, *f*, of the

knife-frame B. On one end of journal of this frame F is arranged a double pulley, G *g*, the smaller periphery, *g*, of which is operated upon by the belt *d*, and the larger periphery, G, of which is connected by a belt, *d*², with a small pulley, *h*, keyed on the end of the shaft E of the grinding-disk, by which mechanism a higher speed is given to the grinding-disk than to the knife. Near the pivotal point of the U-shaped frame there is formed on said frame an offset, *i*, and just below it is another offset, *j*, attached to the knife-frame B. Through this latter offset is tapped a set-screw, *k*, which bears against the offset *i* of the frame of the grinding-disk. By turning this screw up or down it will be seen that the U-shaped frame carrying the grinding-disk is raised or lowered and the said disk is brought into contact with or taken away from the periphery of the knife, as shown in dotted lines in Fig. 3, and this adjustment may be made while the knife is operating. The shaft E, bearing the grinding-disk, is made of a large diameter, *l*, on one side of said disk and of a smaller diameter, *m*, on the other side, which smaller diameter is screw-threaded, and upon which smaller screw-threaded section the grinding-disk is placed and clamped by a nut, *n*, against the shoulder of the larger section, *l*. This construction enables me to place two grinding-disks on the same shaft, which disks are beveled in reverse directions to sharpen both sides of the knife, or it permits the same grinding-disk to be removed and its bevel side reversed to sharpen the knife upon the opposite side, the plane of the grinding-disk being easily adapted to this change by washers or filling-nuts.

I do not limit my invention to a rotary knife, as a reciprocating blade could be operated upon by the grinding-disk equally as well.

Having thus described my invention, what I claim as new is—

1. The combination, with the hinged frame B, bearing a rotary shaft with a rigidly-attached disk-knife, of a grinding-disk frame hinged to said knife-frame and provided with a grinding-disk, and means for adjusting the latter to the knife, substantially as described.

2. The combination of the hinged frame B, with extension *f*, the U-shaped frame F, a set-screw for adjusting the relation of the two, the rotary knife C, with shaft *b*, and pulley *c*, the grinding-disk D, with shaft E, and 5 pulley *h*, the double pulley G *g*, and the belts *d* and *d*², substantially as and for the purpose described.

The above specification of my invention signed by me in the presence of two subscribing witnesses.

RO. O. OWEN.

Witnesses:

SOLON C. KEMON,
JESSE MIDDLETON.