

N. Steadman,

Key for Shaping.

No. 110,510.

Patented Dec. 27. 1870.

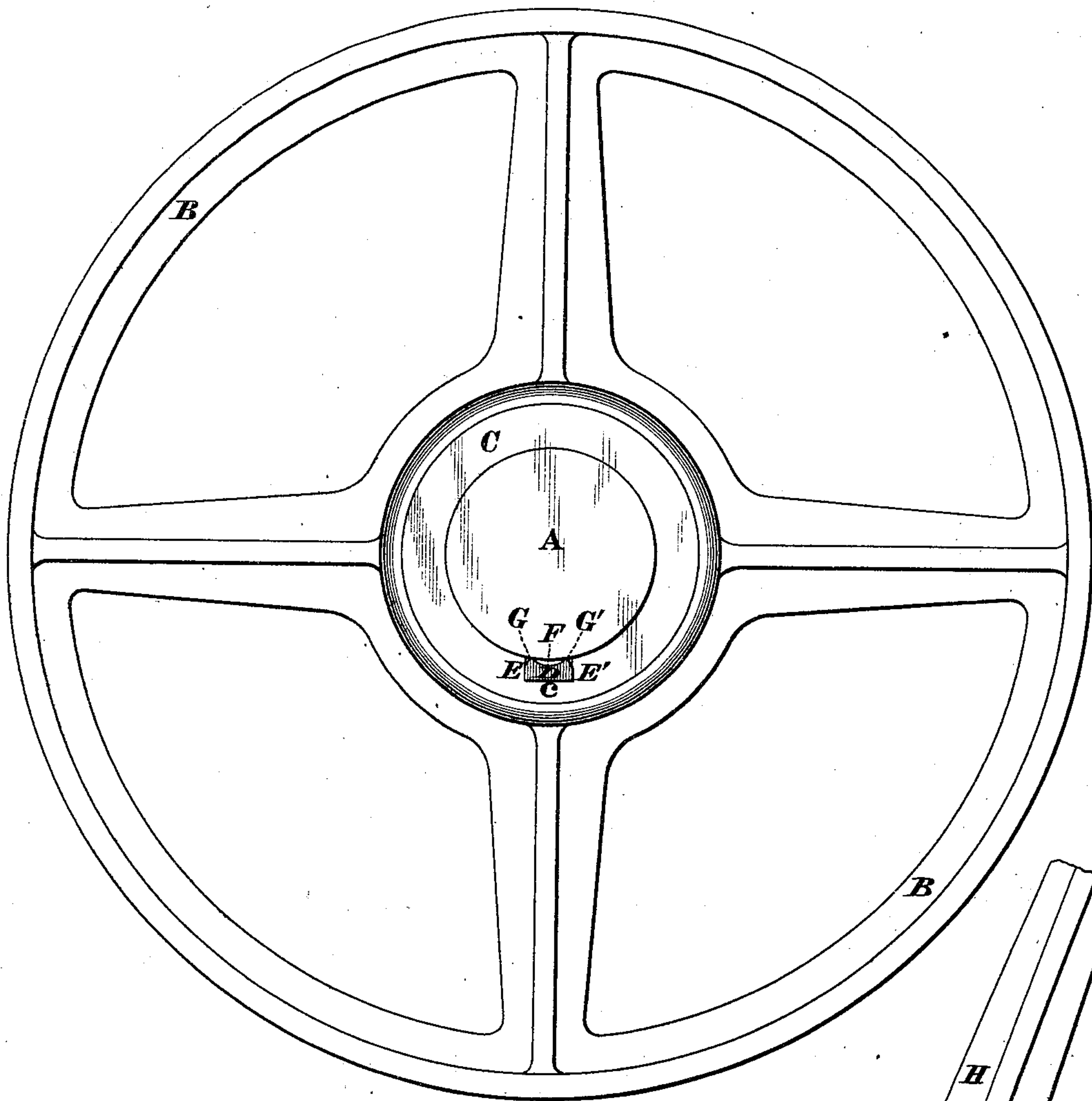


Fig. 2.

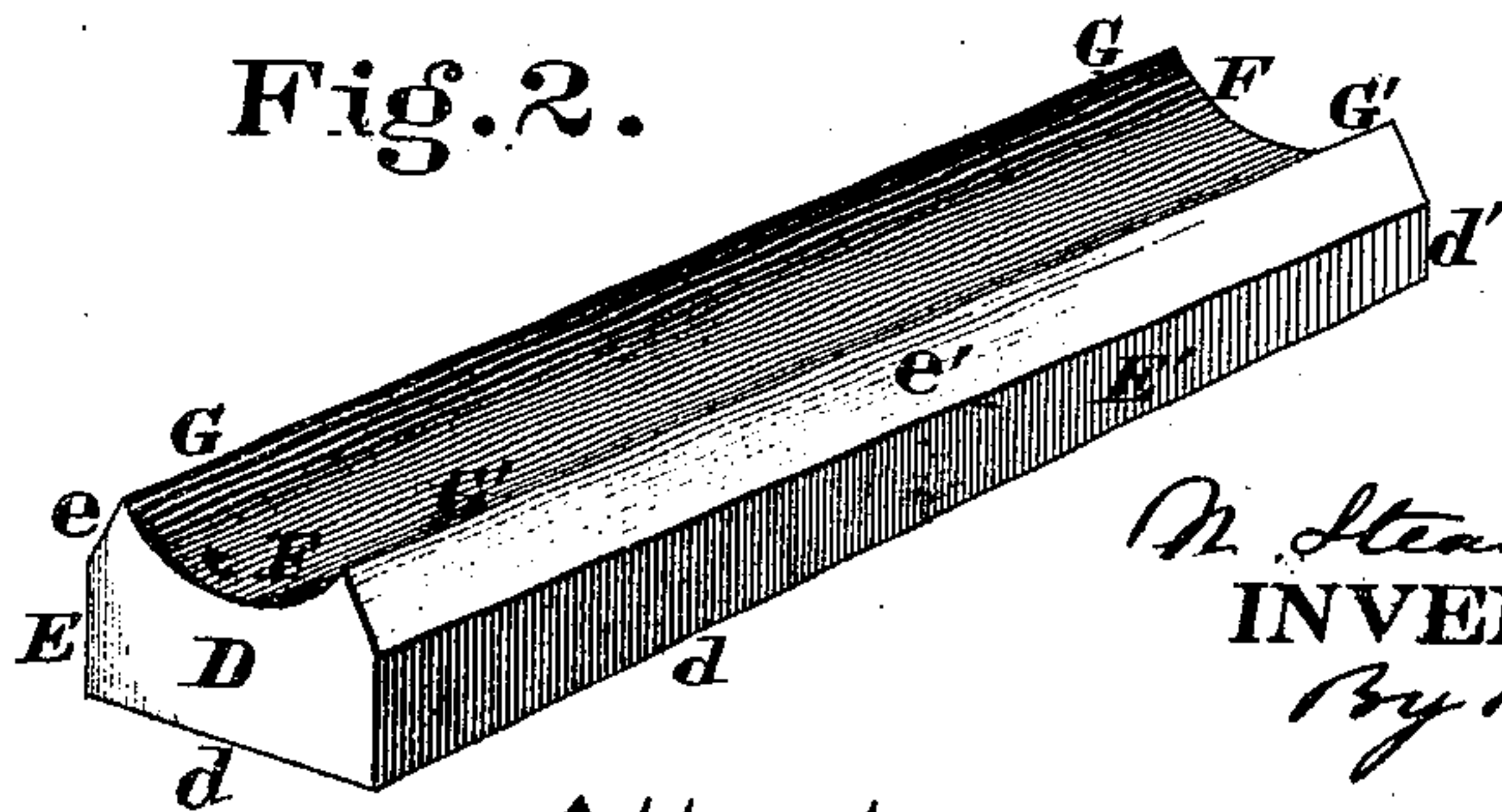
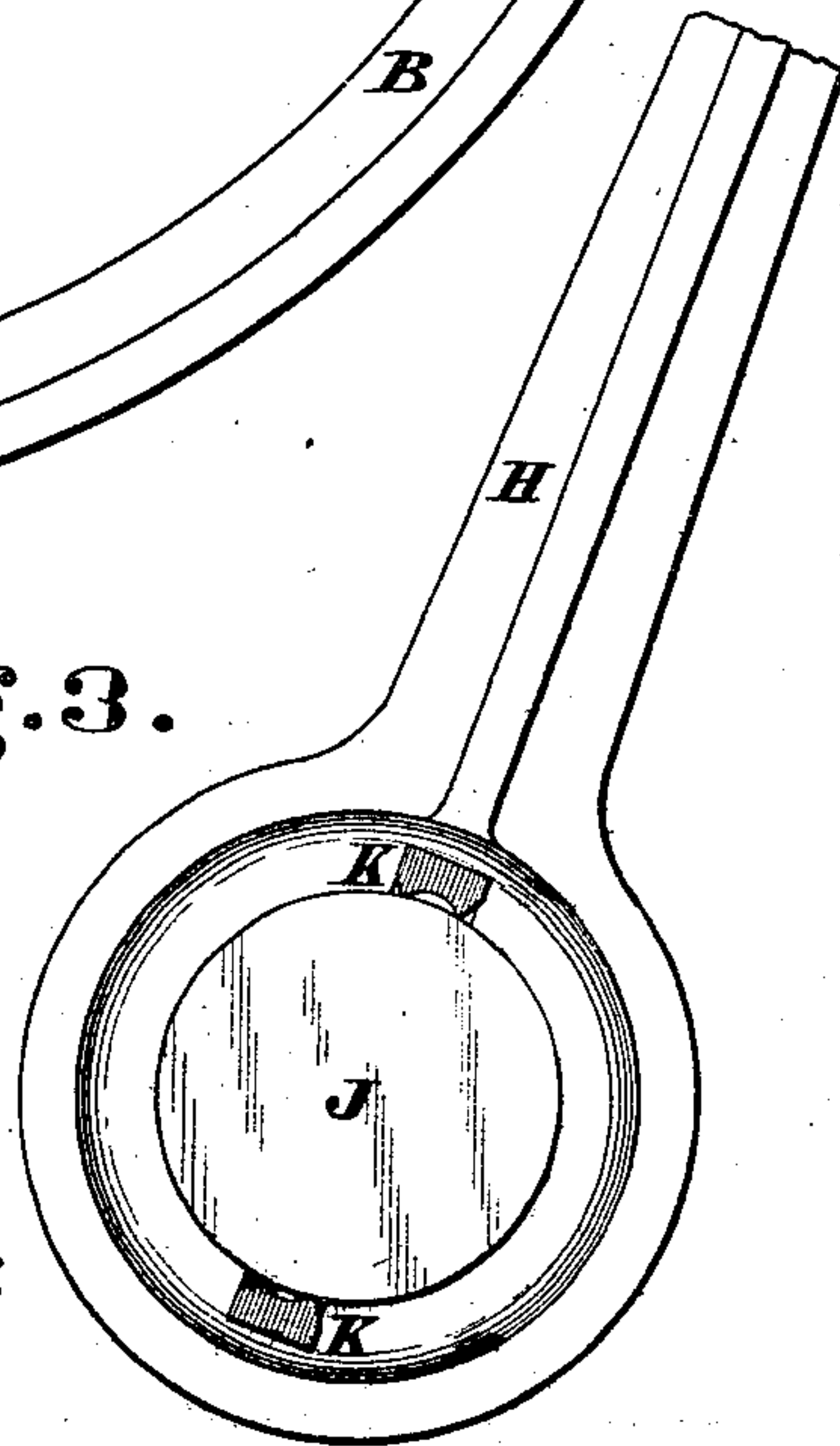


Fig. 3.



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NATHAN STEDMAN, OF AURORA, INDIANA.

Letters Patent No. 110,510, dated December 27, 1870.

IMPROVEMENT IN KEYS FOR SHAFTINGS.

The Schedule referred to in these Letters Patent and making part of the same.

I, NATHAN STEDMAN, of Aurora, Dearborn county, Indiana, have invented a new and useful Key for Shafting, of which the following is a specification.

Nature and Objects of the Invention.

This invention relates to that class of retaining devices commonly known among mechanics as "keys," which are employed for securing pulleys, gear-wheels, &c., to shafts, my form of key being such as to wholly dispense with the objectionable excavation known as a "key-seat" in the shaft or other object of attachment.

General Description with Reference to the Drawing.

Figure 1 is an end elevation of a shaft and key with pulley in position.

Figure 2 is a perspective view of a key on an enlarged scale.

Figure 3 shows my preferred method of securing an arm to a rock-shaft.

A represents a shaft;

B, a pulley; and

C, the hub of the same, having a slot, *c*, for the key.

The key D is formed with a flat back, *d*, two vertical or nearly vertical sides, E E', and a concave gutter or channel, F, which extends along its front surface.

This concave is struck with a radius somewhat less than that of the shaft to which the pulley is to be secured, so as to form knife-edged bearings G G' at the points where the terminations of said concave meet the chamfered or inclined portions *e e'* of the sides E E'.

The entering end *d* is slightly thinner than the other end.

This key is inserted in its seat in the customary way and then driven home, which act brings its knife-edges G G' to bear against the periphery of the shaft, very slightly penetrating the latter, causing a very secure grip and attachment without weakening or

bowing the shaft, as is apt to be the case where a portion of one side is removed to form the "seat."

The chamfered edges *e e'* prevent the key having the action of a turning tool to strip the shaft, to which they might be subject if the sides E E' were carried up to meet the shaft without the described chamfered portions.

By using this key I dispense with the customary seat, which, besides rendering the shaft weaker, is liable to bend the same out of line in the act of driving the key.

While better than the ordinary key, for the reasons given, my device is far superior to a set-screw in the much more effective grasp of the shaft, longer than the hub even, if necessary, and because it is not liable to cut a circumferential groove or crease in the shaft, as the set-screw is.

Whenever it is desired to attach an arm, H, to a rock-shaft, J, I prefer the employment of two diametrically-opposite keys, *k*, as shown in fig. 3.

This device may also be employed as a shaft-coupler, or wherever it is desired to unite two rotating bodies.

While preferring the form shown for ordinary purposes, partly because easily made of bar-steel, it is manifest that an elliptical, trapezoidal, circular, or other form may be given to the back and sides of the key, providing that the concave bearing-surface with chamfered-sided knife-edges be retained.

Claim.

I claim as new and of my invention—

The improved key for shafting, having the concave face with chamfered-sided knife-edges, as explained.

In testimony of which invention I hereunto set my hand.

NATHAN STEDMAN.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.