

H. T. Field,
Knife Scourer.
N^o 20,340. Patented May 25, 1858.

Fig: 3.

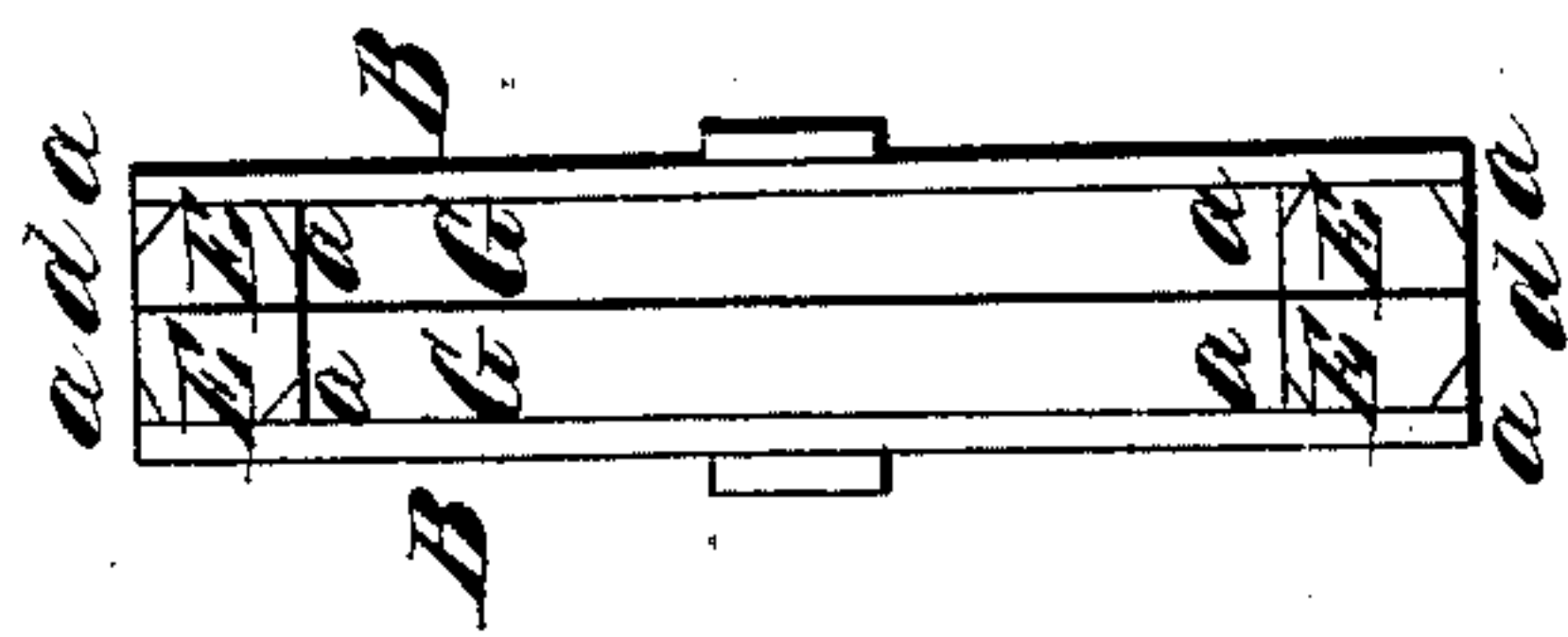


Fig: 2.

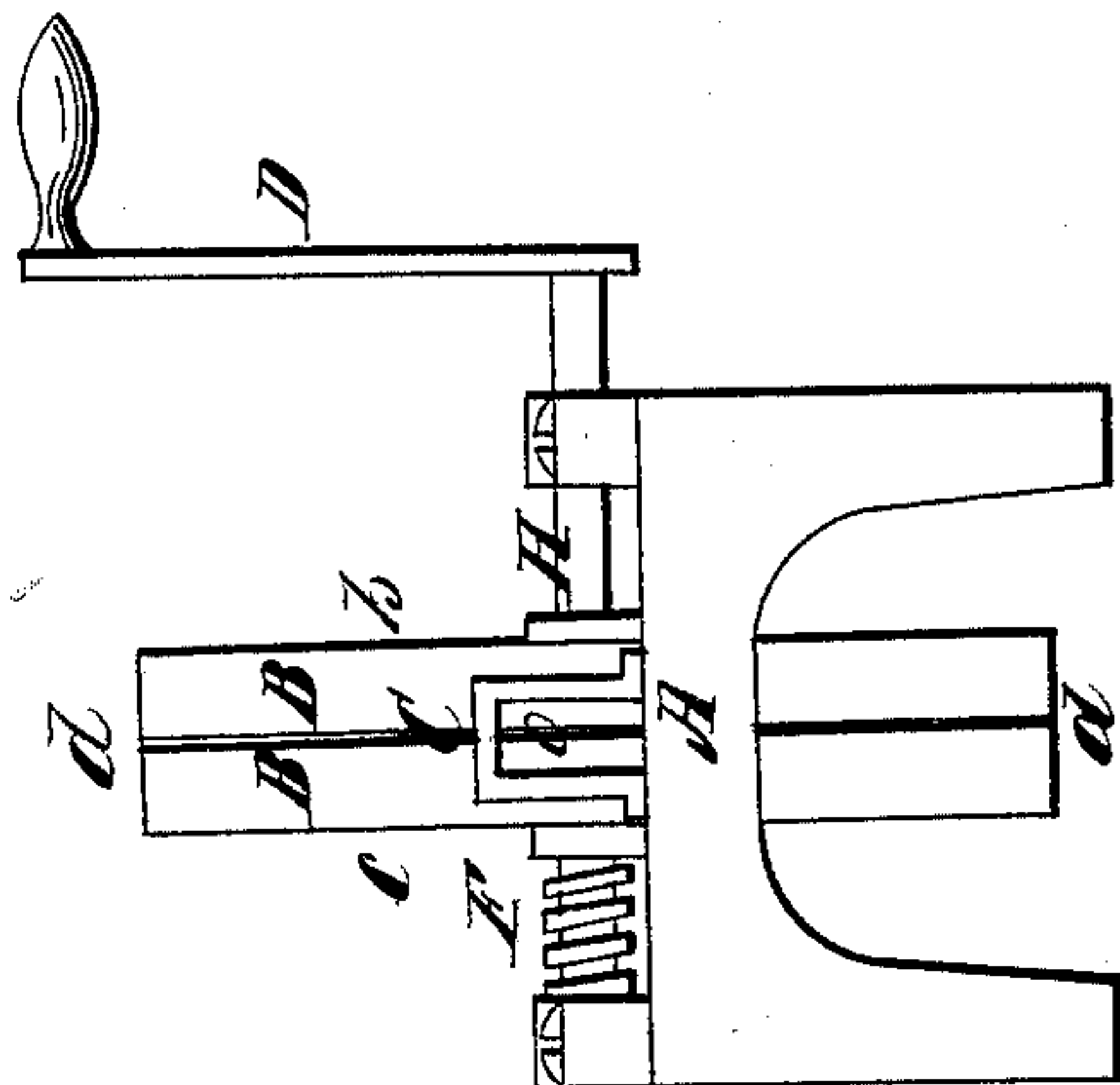
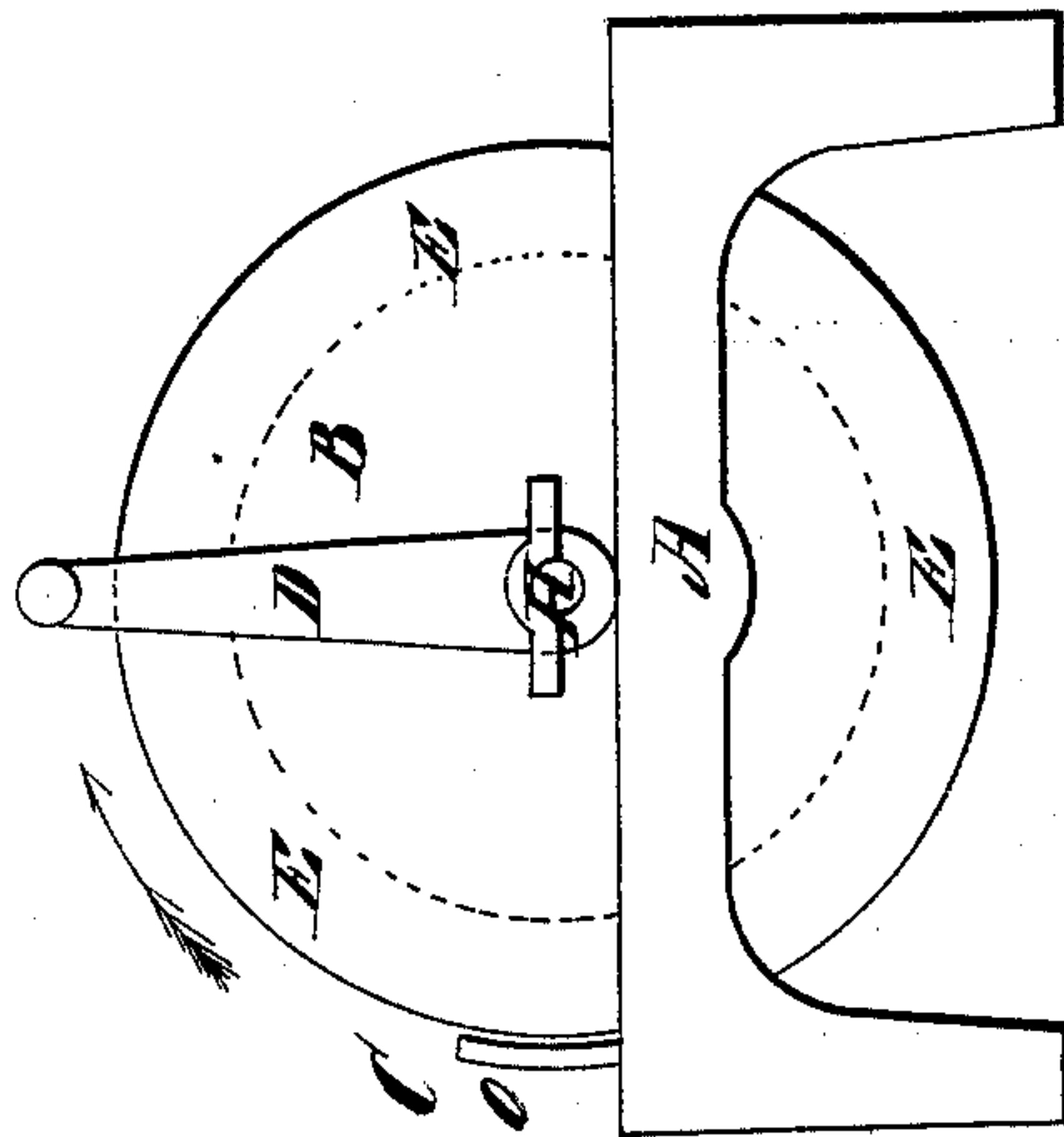


Fig: 1.



UNITED STATES PATENT OFFICE.

H. T. FIELD, OF NEW BRAINTREE, MASSACHUSETTS.

KNIFE-POLISHER.

Specification of Letters Patent No. 20,340, dated May 25, 1858.

To all whom it may concern:

Be it known that I, H. T. FIELD, of New Braintree, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Cleaning and Polishing Knives; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, represents a side elevation of a knife polisher embracing my improvements. Fig. 2, represents an end elevation of the same; and Fig. 3, represents a vertical section on the line *xx* of Fig. 1.

My improvements in knife polishers relate more especially to the rotary disk polisher which generally consists of two parallel circular disks mounted on the same shaft, one of which is fixed to the shaft, and the other moves longitudinally, and is held against the fixed disk by a spring which allows it to yield and admit the blade of a knife between. The adjacent faces of the disk are covered with a soft or yielding material (generally leather) which extends from the periphery to the center, and forms a polishing face that receives and retains the polishing dust used. The knife blade is inserted between the pads up to the hilt, and a rotary motion being given to the disk, the knife is polished by the action of the rubbers on the side of the blade. In most machines the rubbers rotate toward the back of the knife, while in some the attempt has been made to polish the knife by rotating the disk in the direction of the edge, in which case a smooth and straight surface is given to the pad which is made of a slightly elastic material to diminish the liability of its being cut by the edge of the knife. The objections to all the polishers of this description is that the knife is polished in concentric curved lines, the radius of the curves diminishing from the hilt which is at the periphery, to the point which is near the center of the disks. Toward the points of the knife the direction of these lines approach nearly the direction of the fibers of the steel which in a knife run longitudinally; so that the blade toward the point is cut into grooves by the polishing material as the soft fibers of the steel wear away when polished in the direction of the fiber, more rapidly than the hard; whereas, when the polish is

given transversely to the fiber, the hard fibers protect the soft from being cut away more rapidly than they are themselves. The unyielding material from which the pads heretofore have necessarily been made to prevent their being cut by the edge of the knife when the motion of the polishing disk is in that direction, does not admit of their closing around the blade, being kept from the edge by the superior thickness of the back, which prevents them from polishing the knife close to the edge.

The object of my improvement is to overcome the before mentioned defects in the disk knife polishers, and my invention for effecting these objects consists in the application of a narrow annular elastic buffer to the adjacent faces of the disks, leaving an open space between the inner edge of the annular buffer and the center of the disks, by which means a transverse polish is given to the knife nearly perpendicular to the fiber of the steel. A more elastic pad may be used without increasing the liability of its being cut when the disk is rotated in the direction of its edge, so that the knife is not only polished close to the edge, but also, at the same time, sharpened.

In the accompanying drawing is represented a knife polisher embracing my improvements, and it consists of a frame (A) on which is mounted a shaft (H) carrying two circular disks (B, B'). The disk (B) is fast to the shaft, while the one (B') can move laterally. To the adjacent faces of the disks is attached a narrow elastic annular buffer (E) of the same diameter at its outer edge as the disk, which leaves a chamber (G) between the inner edges of the buffers to hold the polishing powder, which may be supplied by an opening in the side of one of the disks. The buffers in this case are made of vulcanized rubber, covered with leather, but I prefer the vulcanized rubber alone, coated with emery, as it is less liable to be cut or otherwise injured by the edge of the knife.

A spiral spring (F) on the shaft retains the buffers in contact with each other, and presses the blade into them, and surrounds it from the back to the edge. A rest (C) is attached to the frame to steady the knife and hold it against the action of the buffers.

The machine is rotated by a crank (D) attached to the end of the shaft and in the direction of the edge of the knife which is

inserted between the buffers beneath the rest with the edge downward, the back bearing against the under side of the rest.

5 As the buffers rotate with the knife between them, the polishing powder in the chamber works between the buffers and gives to the knife as it is drawn backward and forward a fine transverse polish.

10 It will be seen that as the polishing buffers only occupy that portion of the disk near its periphery, the polish is given nearly perpendicular (although slightly curved) to the fiber of the steel, so that the soft fibers are not worn away more rapidly than the
15 hard as is the case when the buffers extend to the center of the disk.

The comparatively small portions of the surface of the pads in contact with the blades of the knife, as well as their distance from
20 the center of the disks admit of their being

pressed close to the blade, both at the back and edge, by which means, not only is the knife polished close to the edge, but also sharpened at the same time, while from their arrangement they open more readily to the
25 edge of the knife than when they extend to the center, and their liability of being cut is greatly diminished.

Having thus described my improvements in knife polishers, what I claim therein as
30 new and desire to secure by Letters Patent, is:

The combination of the annular buffers with the disks, when arranged on the adjacent faces of both disks as described, for
35 the purpose set forth.

HORACE T. FIELD. [L. s.]

Witnesses:

JOHN N. FIELD,

STEPHEN P. TWISS.