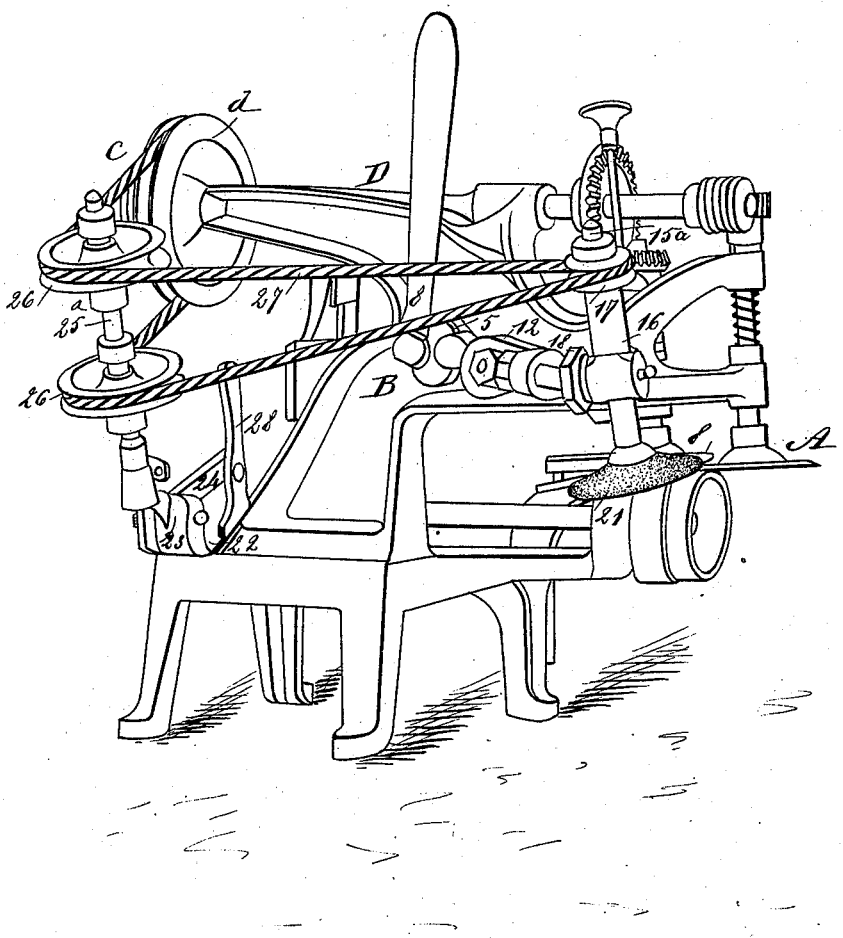
(No Model.) 2 Sheets—Sheet 1.

# P. B. CLARK & G. J. KLINGLER.

## KNIFE SHARPENING ATTACHMENT FOR SKIVING MACHINES.

No. 384,020. Patented June 5, 1888.

*Fig. 1*




WITNESSES:

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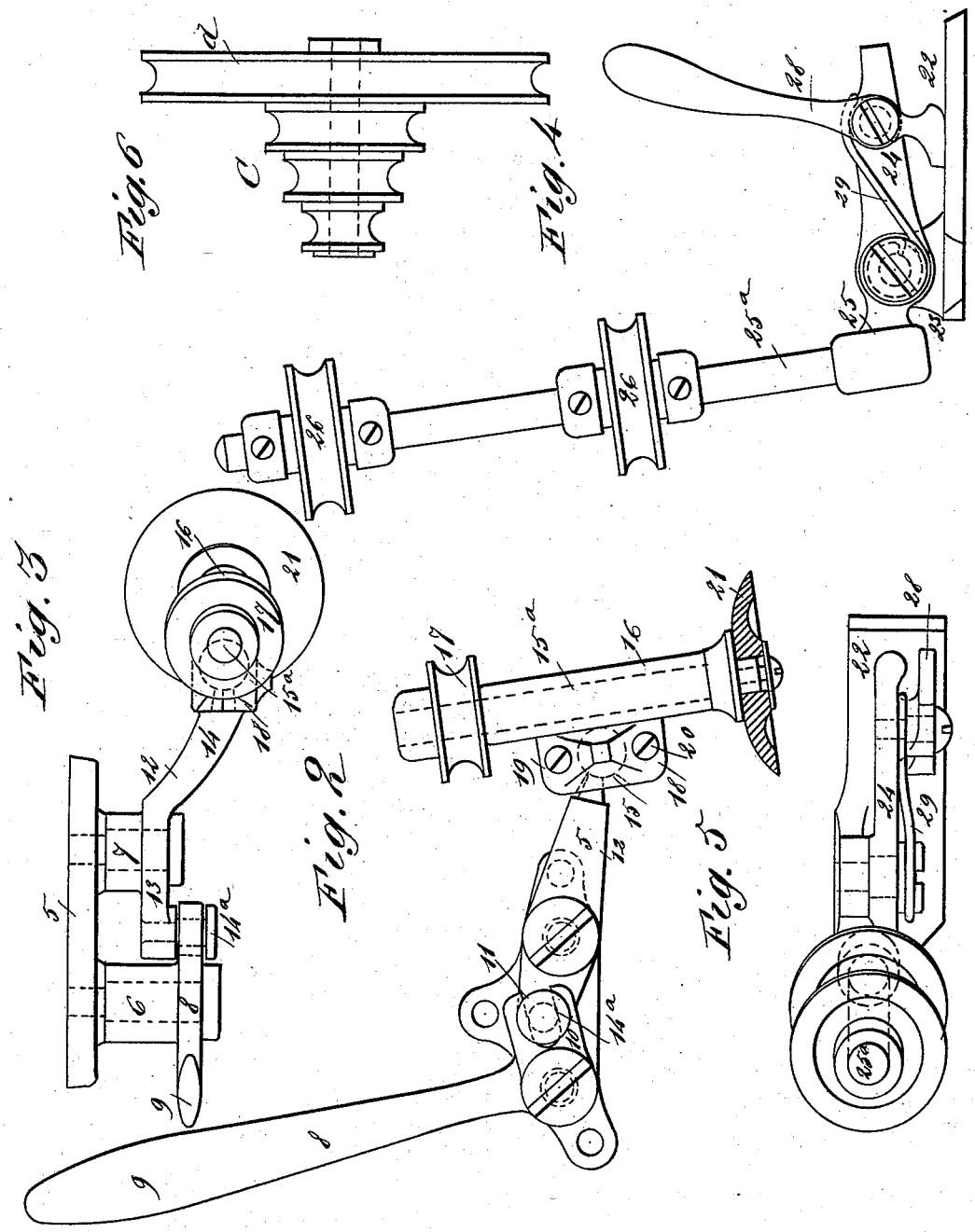


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# UNITED STATES PATENT OFFICE.

PHILO B. CLARK AND GEORGE J. KLINGLER, OF BROOKLYN, NEW YORK.

## KNIFE-SHARPENING ATTACHMENT FOR SKIVING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 384,020, dated June 5, 1888.

Application filed December 1, 1887. Serial No. 256,615. (No model.)

*To all whom it may concern:*

Be it known that we, PHILO B. CLARK and GEORGE J. KLINGLER, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Knife-Sharpening Attachment for Skiving-Machines, of which the following is a full, clear, and exact description.

Our invention relates to an improved knife-sharpening attachment to machines employed in skiving leather, specially adapted for use with the Amazeen machine, for which Letters Patent, No. 200,682, were granted February 26, 1878; No. 220,906, October 28, 1879; No. 241,178, May 10, 1881, and No. 273,931, March 13, 1883; and the object of the invention is to provide a device constantly attached to the machine, whereby the sharpening-disk may be revolved by power taken directly from the machine, and wherein the said disk may be accurately and conveniently and expeditiously adjusted to the knife, rapidly applied thereto, and as rapidly removed from contact with the knife.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 illustrates the attachment of the device to a machine. Fig. 2 is a front elevation of the device proper detached, and Fig. 3 is a plan view thereof. Fig. 4 is a side elevation of the idlers and shifting device, and Fig. 5 is a plan view of the same. Fig. 6 is a front elevation of the cone-driving pulleys.

In carrying out the invention we have illustrated our device as applied to the Amazeen skiving-machine, for which it is specially adapted, and upon which Letters Patent have been granted, as aforesaid.

With reference to the said machine, A represents the cutting-knives to be sharpened; B, the main arm carrying the knives, and C a series of conically-arranged pulleys upon the drive-shaft D, the inner or larger pulley, *d*, of which is adapted to communicate motion to our attachment.

Upon the main arm B of the machine at one side, a suitable distance to the rear of the knives A, a base-plate, 5, is securely attached, which plate at each side of the center is provided with lugs 6 and 7 upon the outer face, the lug 6 being longer than the aligning lug 7, as shown in Fig. 3.

Upon the lug 6 a substantially L-shaped lever, 8, is pivoted, the vertical member 9 constituting a handle, the horizontal member 10, which is much shorter, being provided with a longitudinal slot, 11, projecting inward from the end.

Upon the lug 7 a rocking lever, 12, is pivoted, the inner portion, 13, whereof over the plate being straight and parallel with the same, while the remaining portion 14 is curved laterally outward, terminating in the ball 15. (Shown in dotted lines, Fig. 2.)

Upon the straight end of the rocking lever and upon the outer face a pin, $14^a$, is provided, and made to project through the slot 11 of the lever 8, the said pin being preferably provided with a suitable head, as shown in Fig. 2.

The stone-carrying spindle $15^a$ is held to revolve in a cylindrical casing, 16, and extends above the casing to receive a pulley, 17, the said pulley being keyed or otherwise secured to the spindle. Integral with the casing on one side and about centrally the same one section of a box, 18, is produced, which section is provided with a semi-spherical recess adapted to receive the ball 15 of the rocking lever 12, and the said box is so formed as to accommodate that portion of said rocking lever next the ball, whereby the spindle-casing may be rotated upon a ball-and-socket joint.

To complete the ball-and-socket joint and also to provide a means whereby the spindle-casing and rocking lever may be held in rigid connection, the second section 19 of the box, which is detachable and similarly formed to the section integral with the casing 16, is attached to the fixed section by screws or bolts 20, as shown in Fig. 2, whereby the two sections may be drawn so tightly together as that the rocking lever and casing are held in as close a contact as though one were integral with the other. Upon the lower end of the spindle $15^a$ the grinding stone or disk 21 is secured by a screw passing through the latter into the former, or in any other approved manner.

The sharpening device thus constructed and

connected to the machine is so placed or attached to the main arm of the machine as that the grinding stone or disk will be contiguous to the cutting blades or knives, as illustrated in Fig. 1.

Beneath the driving-pulleys and to the base of the machine a bed-plate, 22, is horizontally secured in any approved manner, which base-plate is provided near one end with an ear, 23. Upon this ear 23 a comparatively-straight lever, 24, is fulcrumed, the outer end, 25, which is the shortest end, having attached thereto a vertical shaft, $25^a$, carrying two spaced idlers, 25, and a belt, 27, is passed over the pulley *d* upon the machine around the idlers, and also around the pulley 17 of the stone-carrying spindle 15, as illustrated in Fig. 1.

Near the inner end of the straight lever 24, which is horizontally located upon the machine, a second vertical lever, 28, is pivoted, the upper end of the said vertical lever serving as a handle, the lower end being made to bear and rock upon the bed-plate 22, as shown in Fig. 4. A spring, 29, is coiled around the pivot of the horizontal lever 24 at one end, having a bearing upon the pivotal connection of the vertical rocking lever 28 with the straight lever 24, whereby the spring exerts tension upon the levers.

In operation, the grinding-stone having been properly adjusted with relation to the knives, the lever 28 is carried outward, which, tightening the belt 27, causes the stone-carrying spindle to revolve by carrying the lever 8 to the rear, and the sharpening-stone is brought down in contact with the knives, which, revolving in an opposite direction, are speedily sharpened thereby, and when so sharpened by carrying the lever 8 toward the knives the stone is removed from contact therewith. The belt 27 may now be loosened by carrying the shifting-lever 28 inward, whereby the revolution of the stone is stopped.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a leather-skiving machine, a knife-sharpening attachment comprising a base-plate, a lever pivoted thereon, a casing or bearing, a universal joint connecting the sleeve and lever, a spindle mounted in said casing or bearing and provided with the grinding disk or wheel at one end, and a means of rotation, substantially as set forth.

2. In a leather-skiving machine, the combination, with the frame, the knife, and the operating mechanism, of the lever pivotally connected to the frame between its ends, the casing connected to the forward end of said lever by a universal joint, a spindle journaled in said casing, and provided with a grinding disk or wheel and an operating-pulley receiving motion from the main drive-shaft, and the elbow-lever engaging the inner end of said first-named lever, substantially as set forth.

3. The combination, with the knives of a leather-skiving machine, of a plate, 5, attached to said machine, an L-shaped lever, 8, pivoted to said plate, having a slot, 11, in its horizontal member, a rocking lever, 12, also pivoted to the plate 5, a pin, $14^a$, attached to said rocking lever entering the said slot 11, a spindle, $15^a$, united to said rocking lever by a ball-and-socket joint, a grinding-disk, 21, secured to the lower end of the spindle, a pulley, 17, attached to the upper end of the same, and a belt-connection between said pulley 17 and the driving-pulley of the machine, substantially as herein shown and described.

4. The combination, with the knives of a leather-skiving machine, of a plate, 5, attached to the machine, an L shaped lever, 8, pivoted to said plate, having a slot, 11, in its horizontal member, a rocking lever, 12, also pivoted to the plate 5, a pin, $14^a$, attached to said rocking lever, entering the said slot 11, a spindle, $15^a$, united to said rocking lever by a ball-and-socket joint, a grinding-disk, 21, secured to the lower end of the spindle, a pulley, 17, attached to the upper end of the same, a belt-connection between said pulley 17 and the driving-shaft of the machine, and a shifting mechanism, substantially as shown and described, interposing the said pulley 17 and the driving-pulley, as set forth.

5. In a leather-skiving machine, the combination, with the main shaft and the grinding-disk and its shaft, of a rocking lever having a vertical shaft at its outer end provided with two idle-pulleys, and a belt passing around pulleys on the main shaft and the disk-shaft and around said idlers, whereby by throwing said shaft outward the belt may be tightened, substantially as set forth.

6. The combination, with the main shaft and the grinding-disk shaft, of the rocking lever 24, having a vertical shaft at its outer end provided with pulleys, an upward-projecting hand-lever pivoted to the rocking lever, a spring, 29, the idlers 26, and the belt passing around pulleys on the main and grinder shafts, respectively, and around the pulleys on said vertical shaft, substantially as set forth.

7. The combination, with the skiving-knife and its operating-shaft, of the rocking lever, a casing connected with it by a universal joint, a spindle mounted in said casing and having a pulley at its upper end and a grinding-disk at its lower end, a second rocking-lever at right angles to the first-named rocking lever, a shaft projecting upward from the outer end thereof and carrying horizontal idle-pulleys, and a belt passing from the main shaft-pulley around the idlers and grinding-spindle pulley, whereby the idlers may be thrown inward and outward, according to the several adjustments of the grinding-spindle and its casing, substantially as set forth.

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