

No. 654,829.

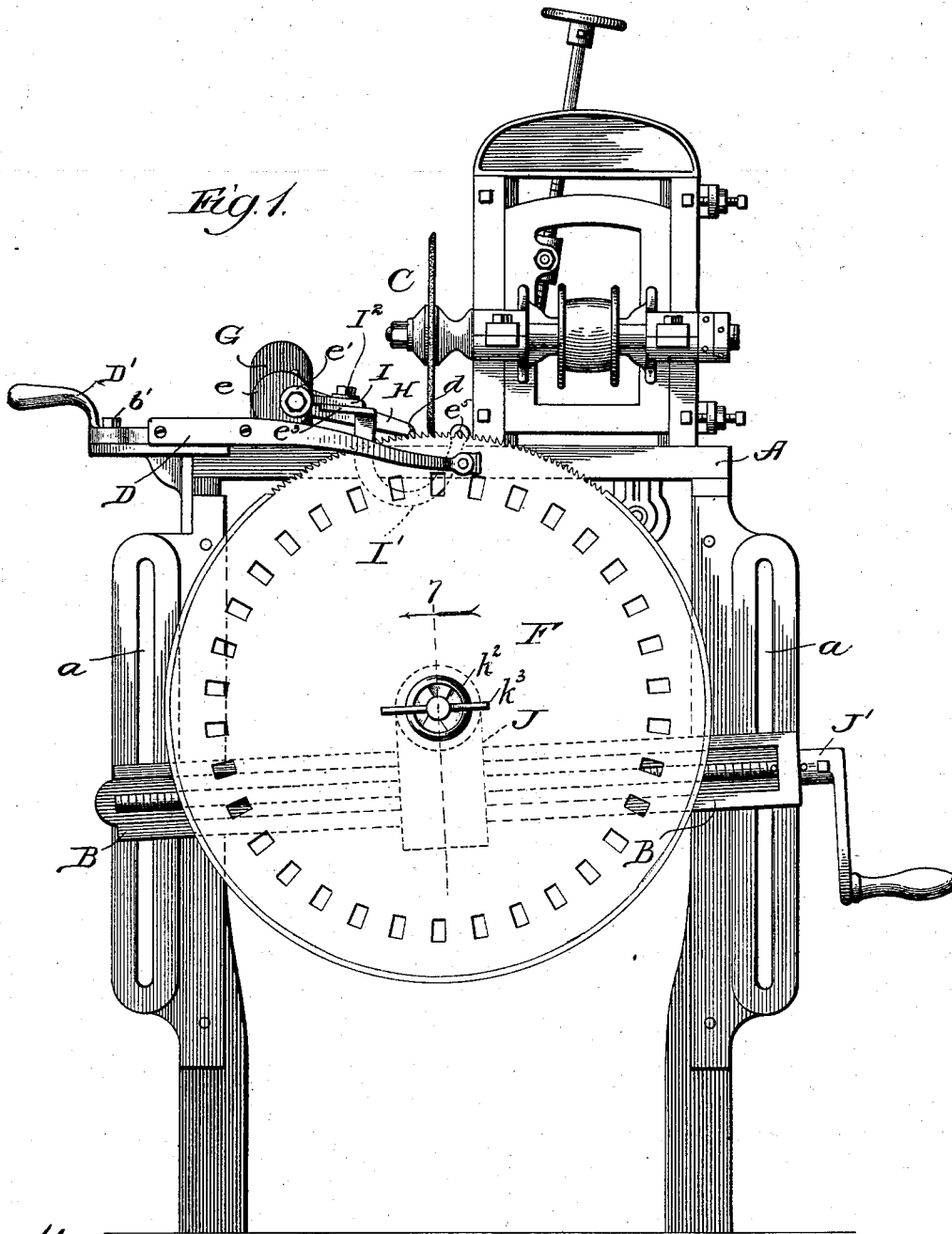
Patented July 31, 1900.

L. L. FILSTRUP.
SAW SHARPENING MACHINE.

(Application filed Mar. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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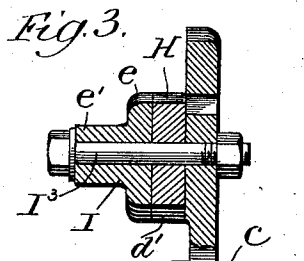
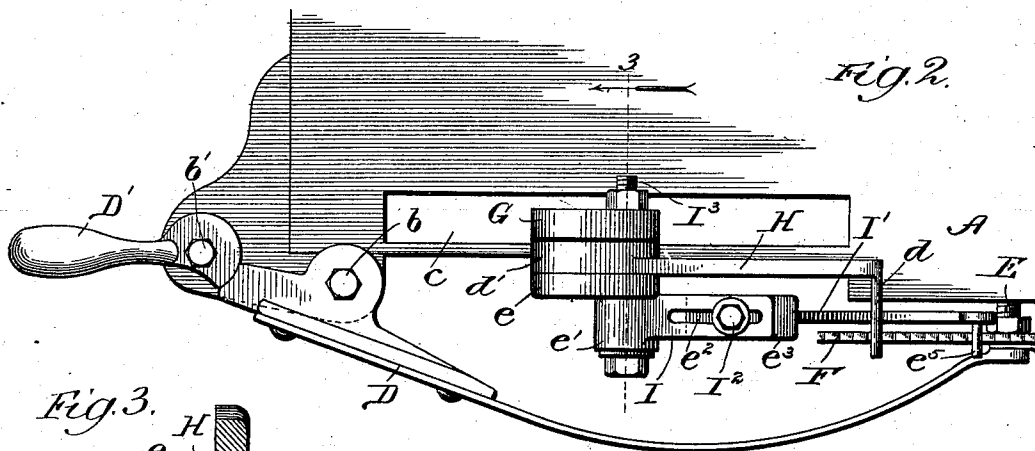


Fig. 3.

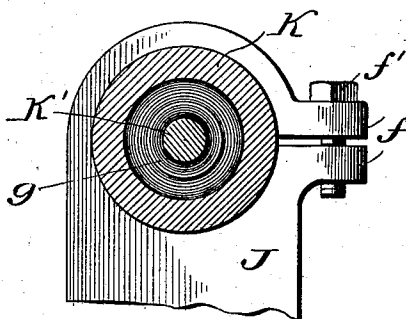


Fig. 4.

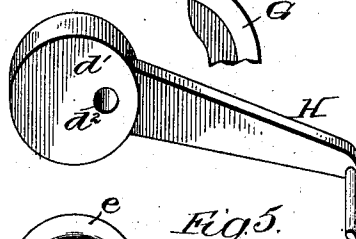


Fig. 5.

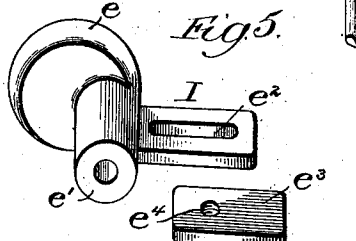


Fig. 6.

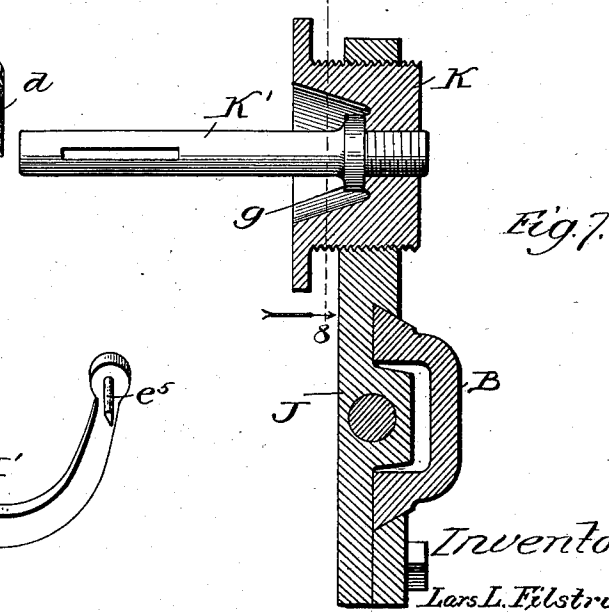


Fig. 7.

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UNITED STATES PATENT OFFICE.

LARS L. FILSTRUP, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
HENRY P. SCHOFIELD, OF SAME PLACE.

SAW-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 654,829, dated July 31, 1900.

Application filed March 24, 1900. Serial No. 9,984. (No model.)

To all whom it may concern:

Be it known that I, LARS L. FILSTRUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Saw-Sharpener Machines, of which the following is a specification:

My invention relates particularly to improvements in saw-sharpening machines for circular saws.

My object is to provide improved feed mechanism and improved arbor adjustment for machines of this character.

The accompanying drawings illustrate my improvements in connection with so much of a saw-sharpening machine as is necessary for a clear understanding.

In the drawings, Figure 1 is a view in front elevation of a saw-sharpening machine equipped with my improvements; Fig. 2, an enlarged fragmentary plan view of the front end of the machine; Fig. 3, a section on line 3 of Fig. 2; Fig. 4, a perspective view of the inner or shorter feed-arm; Figs. 5 and 6, perspective views showing in detail the outer or longer two-part feed-arm; Fig. 7, an enlarged broken section at line 7 of Fig. 1, showing the arbor adjustment; and Fig. 8 a section at line 8 of Fig. 7.

A represents a frame of ordinary construction having vertical guides *a* for the usual vertical adjustment of the arbor; B, a cross-guide of common construction adjustably connected with the guides *a*; C, a grinding-wheel mounted in the usual manner; D, a guide-piece or rest which is pivoted at *b* and bears on the margin of the saw at the outer face thereof; D', a cam or lock pivoted at *b'* and serving to lock the guide-piece D in the usual manner; E, an adjustable stud or bolt which projects from the upper part of the front end of the frame and forms a guide member coacting with the member D; F, a saw in position for grinding; G, a feed-arm-actuating lever which projects through a slot *c*, Fig. 3, in the frame and is reciprocated in the usual manner; H, an inner short feed-arm provided at one end with a feed-finger *d* and at the opposite end with a pivotal bearing-head *d'* and eccentrically-placed perforation *d''*; I I', an outer two-part curved feed-

arm, the part I being provided with a bearing-head *e*, eccentrically-placed perforated bolt-receiving lug *e'*, and length-adjusting slot *e''* and the part I' being provided at one end with an adjusting-head *e''*, having a perforation *e''*, and at the opposite end with a feed-finger *e''*; I², a bolt for adjustably fixing the parts I I' firmly together; I³, a pivotal bolt joining both feed-arms to the actuating-lever; J, a vertically-disposed cross-slide mounted on the guide B; J', a screw for adjusting said slide on the guide B in the usual manner; K, an arbor-socket connected with the slide J and affording a central inner-face guide or bearing; K', an arbor; K², Fig. 1, an arbor-washer affording a central outer-face guide or bearing, and K³ a cotter-pin.

The slide J is provided with an internally-threaded split ring to receive the externally-threaded arbor-socket, lugs *f*, connected by a screw-bolt *f'*, being provided for tightening the ring upon the socket. Said socket has a central threaded perforation for the threaded shank of the arbor and a recessed outer face to permit a shoulder *g* at the arbor-shank to be beneath the outer face of the socket. The arbor-washer is notched on its outer surface with recesses of different depth to present different thicknesses of metal between the saw and cotter-pin, according to the position of the washer, and thus to accommodate saws of different thickness in a well-understood manner.

The upper end of the actuating-lever G presents a flat elongated head, affording a bearing-face of considerable area for the adjacent head of the feed-arm H in either one of two positions, for which provision is made by supplying two perforations for the bolt I³ to vary the feed.

It will be noted that the curved form of the member I' permits it to pass and move beneath the grinding-wheel and that the feed-fingers of the two arms engage teeth on opposite sides of said wheel. By means of the bolt-and-slot connection between the two parts of the longer feed-arm the latter may be adjusted in length so that both feed-fingers engage teeth and press upon them simultaneously in feeding, or (less desirably) one feed-finger may be caused to fall slightly

short of contact, so that one arm shall ordinarily accomplish the feeding while the other works idly for the most part. In either case if one of the fingers should meet with a broken
 5 tooth and fail to feed properly the saw would, nevertheless, be advanced by the other finger working alone. Since it could rarely occur that the fingers should meet simultaneously with broken teeth, an uninterrupted feeding
 10 is practically assured.

It will of course be understood by those skilled in the art that the upper end of the lever G is moved back and forth intermittently in a plane parallel to the front of the
 15 machine by any suitable agency. Ordinarily the feed-arm-actuating lever is pivoted to the frame, though no pivotal connection is shown in the accompanying drawings. As the upper end of said lever moves toward the grinding-wheel the saw is advanced one tooth, and
 20 in the reverse movement each feed-finger slips over its next succeeding tooth. The reactive force exerted by the saw upon the feed-arms and the force acting at the pivotal connection of the arms produce a turning movement which the eccentric bearing-heads of
 25 said arms are adapted to meet. This is apparent when it is considered that these forces act in different planes, whence it follows that
 30 there is a tendency for the arms to turn out of their proper plane and toward the saw.

The grinding-wheel and its gate are moved in the ordinary or any suitable manner to automatically grind the teeth as they are presented one by one to said wheel.
 35

If found desirable in any case, the means shown for adjusting the length of the long feed-arm may be replaced by any suitable means for effecting a finer adjustment. I have
 40 thus far found the adjustment described quite sufficient for the purpose, notwithstanding it is important that the two feed-fingers shall bear with the same force, so that there shall be no noticeable inequality in feeding should
 45 either of the fingers meet with a broken tooth.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for sharpening circular saws, the combination with frame, arbor and

grinding mechanism, of feeding mechanism, 50 comprising a feed-arm-actuating device, a curved feed-arm connected with said actuating device and provided with a feed-finger for engaging the saw at the farther side of the grinding-wheel, and a shorter feed-arm con- 55 nected with said actuating device and provided with a feed-finger for engaging the saw on the near side of said wheel, substantially as and for the purpose set forth.

2. In a machine for sharpening circular 60 saws, the combination with frame, arbor and grinding mechanism, of feeding mechanism, comprising a feed-arm-actuating device, a feed-arm pivotally joined to said actuating 65 device and provided with a feed-finger for engaging the saw at the near side of the grinding-wheel, and a two-part feed-arm comprising a member I having a pivotal perforation and an eccentric bearing-surface and a curved 70 member I' adjustably connected at one end to the member I and provided at the opposite end with a feed-finger for engaging the saw on the farther side of the grinding-wheel, substantially as and for the purpose set forth.

3. In a machine for sharpening circular 75 saws, the combination with frame, arbor and sharpening mechanism including a grinding-wheel, of feed mechanism, comprising an actuating-lever G having a flat-faced bearing-head, a feed-arm having a flat bearing-head 80 bearing against the first-named head, a feed-arm having a flat-faced head bearing against said second-named head, and a pivotal bolt joining said heads, substantially as and for the purpose set forth. 85

4. In a machine for sharpening circular saws, the combination with frame, sharpening mechanism and feed mechanism, of an adjustable arbor-support, provided with a split internally-threaded ring, an arbor-socket 90 screwed into said support, and means for tightening said ring upon said socket, substantially as and for the purpose set forth.

LARS L. FILSTRUP.

In presence of—

D. W. LEE,

A. D. BACCI.