

3 Sheets—Sheet 1.

No. 542,548.

Patented July 9, 1895.

Fig. 1.

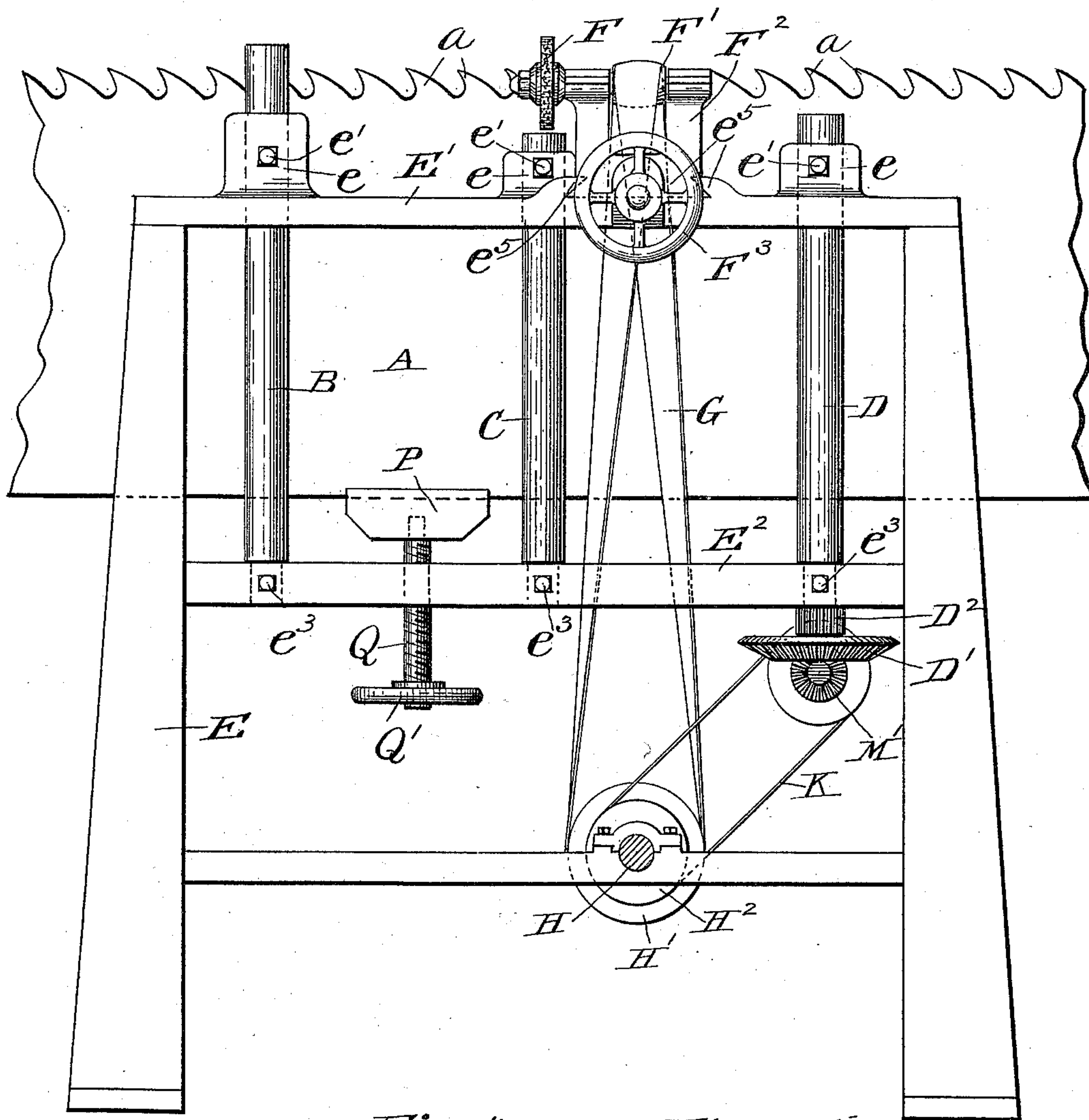
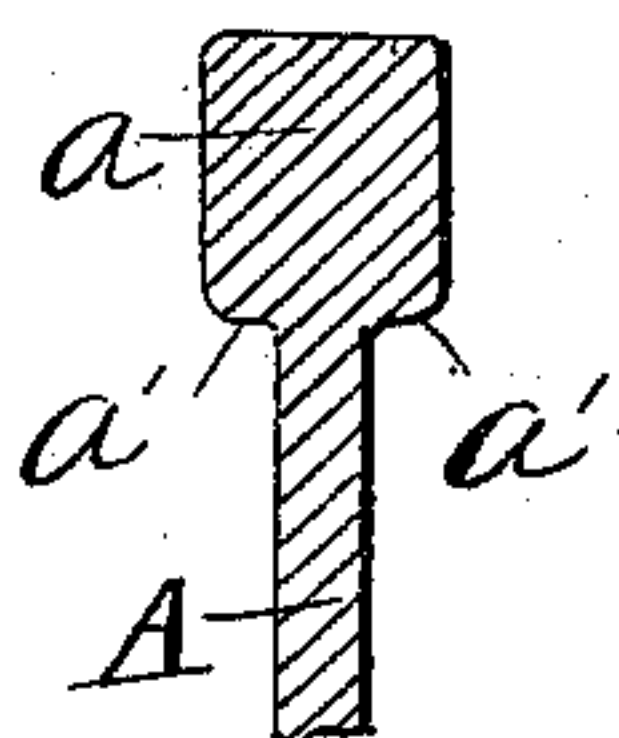


Fig. 4.



Witnesses:


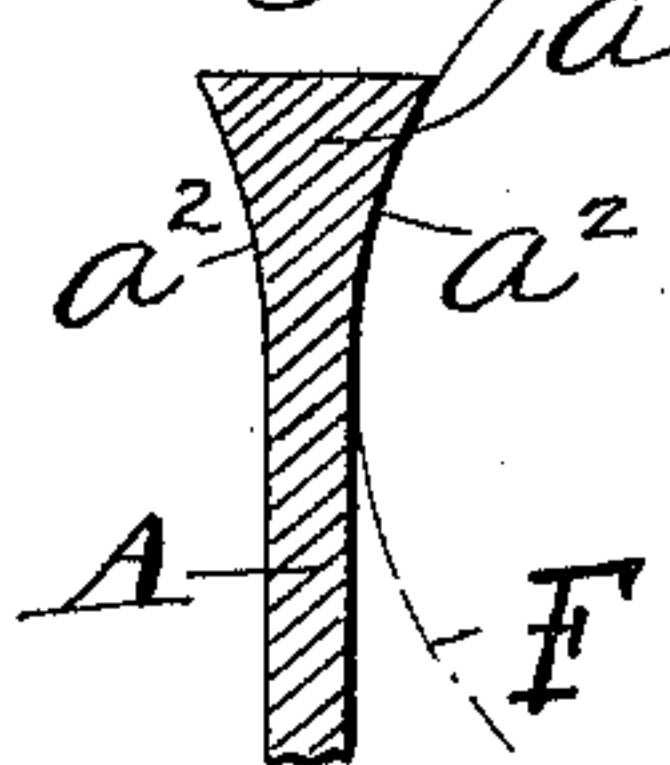

 Jos. H. Blackwood
 Albert B. Blackwood.

Fig. 5.



Inventor.

C. F. Barker,
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(No Model.)

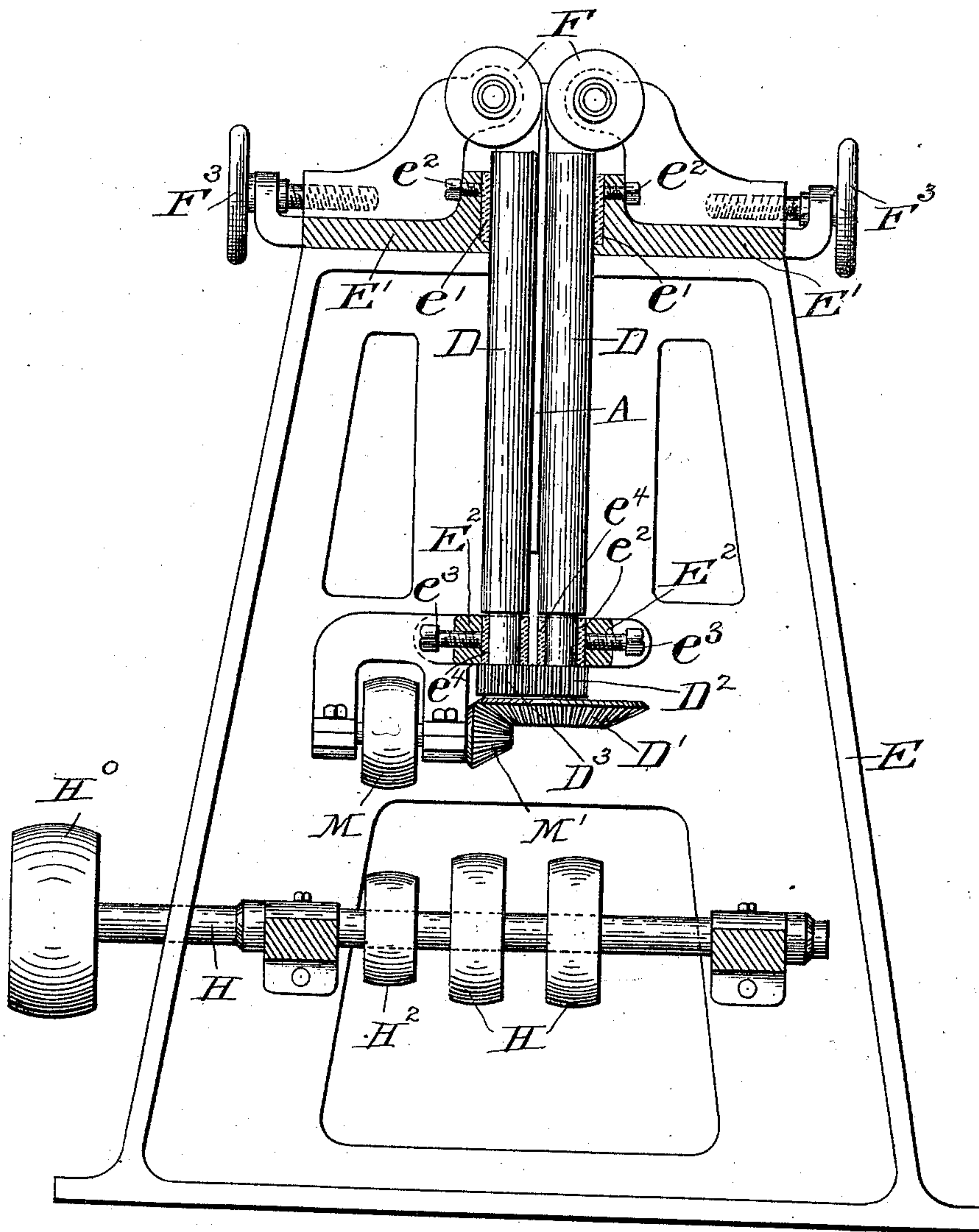
3 Sheets—Sheet 2.

R. F. BARKER.
SAW SHARPENING MACHINE.

No. 542,548.

Patented July 9, 1895.

Fig. 2.



Witnesses:

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(No Model.)

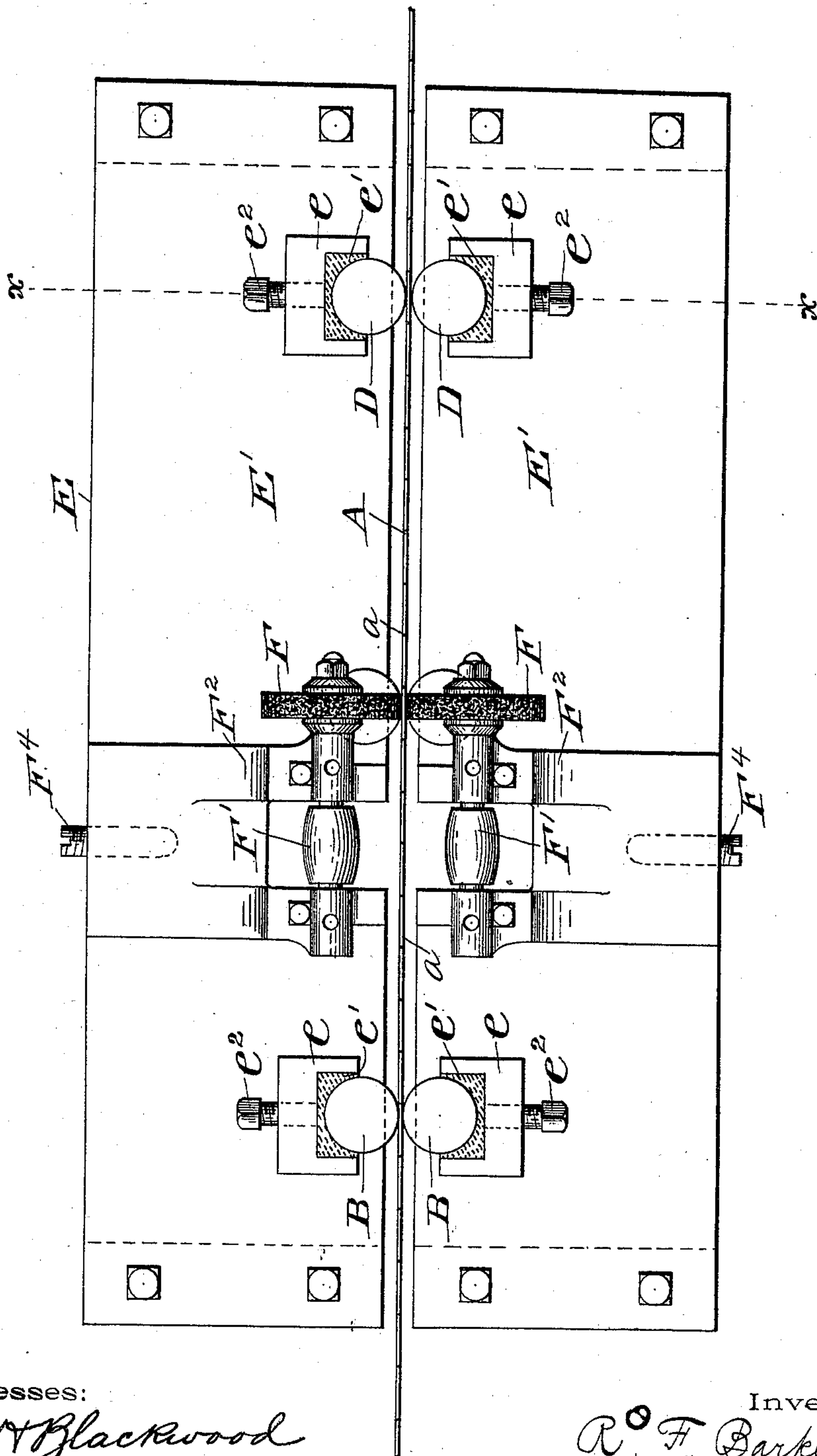
3 Sheets—Sheet 3.

R. F. BARKER.
SAW SHARPENING MACHINE.

No. 542,548.

Patented July 9, 1895.

Fig. 3.



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Albert B. Blackwood.

Inventor.

R. F. Barker

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UNITED STATES PATENT OFFICE.

RUBEN F. BARKER, OF MARINETTE, WISCONSIN.

SAW-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 542,548, dated July 9, 1895.

Application filed February 4, 1895. Serial No. 537,292. (No model.)

To all whom it may concern:

Be it known that I, RUBEN F. BARKER, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented certain new and useful Improvements in Saw-Sharp-
5 nening Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same.

My invention relates to improvements for sharpening saw-teeth, and more especially the teeth of band-saws; and the said invention
15 consists of the certain novel combinations, constructions, and arrangements of parts, hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated
20 by the same letters throughout the several views.

Figure 1 represents a side elevation of my improved saw-sharpening machine in operation on a band-saw. Fig. 2 represents an end
25 view of the said machine, partly in section, along the line $x x$ of Fig. 3 and looking to the left in the said figure. Fig. 3 represents a plan view of the machine shown in Figs. 1 and 2. Fig. 4 represents an enlarged sectional view
30 of one of the teeth of a band-saw after it has been swaged down before being sharpened, and Fig. 5 represents a view of the same tooth after it has been sharpened by my improved machine.

35 The devices shown in Figs. 4 and 5 are somewhat exaggerated, but represent the operation of my improved machine.

In the drawings, A represents the saw-blade provided with teeth a , which teeth are ordinarily swaged down, forming shoulders a' ,
40 which shoulders are ground away, as at a^2 , by my machine, leaving angular cutting-edges, as shown most clearly in Figs. 2 and 5.

B, C, and D represent three pairs of guide-rollers between which the saw-blade passes
45 and by which it is held firmly in position. These guide-rollers are mounted in a frame E and rotate in adjustable bearings e' , held in the sliding blocks e , which are adjusted by
50 means of the screws e^2 , and thus the pairs of rollers may be made to bear firmly against a saw-blade of any thickness. The lower ends

of these rollers are mounted in the strip E^2 and are adjusted by means of the screws e^3 which bear on the sleeves e^4 , as shown most
55 clearly in Fig. 2.

Above the rollers C, which hold the saw-blade rigidly between them, emery-wheels F are provided, with axes parallel to the saw-blade, which wheels are adjusted by means
60 of the hand-wheel F^3 and sliding block F^2 to bear upon the base of the saw-tooth, as shown by the dotted lines in Fig. 5. This block F^2 is dovetailed beneath the guide e^5 , as shown most clearly in Fig. 1. Instead of the hand-
65 wheel F^3 , adjusting-screws F^4 , as shown in Fig. 3, may be provided, if desired. Each of these emery-wheels F is mounted on the same shaft with the pulley F' , which is driven by the
70 belt G, passing over the pulley H' on the driving-shaft H, which shaft is driven by means of the pulley H^0 or by any other suitable mechanism. Another pulley H^2 is mounted
75 on the driving-shaft, which is connected by means of the belt K with the pulley M, which pulley M drives the beveled pinion M' , meshing in the beveled gear D' , which is fast to
80 the lower end of one of the rollers D, which roller carries the gear-wheel D^2 , meshing in the gear-wheel D^3 on the other roller of the pair. Thus, by means of the belt K and the
85 gearing just described, the rollers D are caused to push the saw-blade ahead, feeding the same to the emery-wheels F, which sharpen the teeth *seriatim*.

In order to adjust the saw-blade to the proper height relative to the emery-wheels F, a block P is provided, which is moved
90 vertically by means of the screw Q and hand-wheel Q' , as shown in Fig. 1.

The operation of the device is as follows: The saw-blade is inserted between the rollers B, C, and D, and the said rollers are adjusted to hold the same firmly in position, while the
95 rollers D are screwed close against the saw-blade, so as to feed the same to the emery-wheels. The position of the saw is in the meantime vertically adjusted by means of the screw Q. The saw-teeth having been previously swaged down in the usual way, after
100 the saw is in position the machine is started and the emery-wheels F hollow-grind the saw-teeth while the saw is fed forward by means of the rollers D. Thus it will be seen that the

saw-teeth are sharpened mechanically while the saw is also fed forward mechanically, which is a great saving of time and manual labor. Again, the saw-teeth being hollow-ground present a sharp cutting-edge, which is better adapted to wear down sharp than the filed edges ordinarily found in saws which have been sharpened by hand. These and the various other advantages of the herein described construction will readily suggest themselves to any one skilled in the art.

It will be obvious that various modifications of the herein-described apparatus might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for sharpening saw teeth, the combination with an upright frame and vertical guide rollers horizontally adjustable therein and adapted to hold the saw blade between each pair; of a pair of abrading wheels arranged one on either side of the saw blade, with their axes parallel with the longitudinal axis of the saw blade, and adapted to cut into the sides of the saw teeth near the base thereof; means for advancing and retiring said abrading wheels, and means for rotating said abrading wheels simultaneously, and means also for rotating one pair of said guide rollers, substantially as described.

2. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof adjustable horizontally, and adapted to cause the saw blade to move past the abrading wheels; pairs of vertical guide rollers, also mounted in said frame and adjustable horizontally, each pair being adapted to hold and guide the saw blade; of a pair of abrading wheels arranged one on either side of the saw blade with their axes parallel with the longitudinal axis of the saw blade and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; means for advancing and retiring said abrading wheels, and means for rotating said abrading wheels and said pair of feed rollers at a different speed, substantially as described.

3. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof, adjustable horizontally and adapted to cause the saw blade to move past the abrading wheels; pairs of vertical guide rollers also mounted in said frame and adjustable horizontally, each pair being adapted to hold and guide the saw blade; of a pair of abrading wheels each mounted upon a shaft journaled in a sliding block on either side of said saw blade, having their axes parallel with the longitudinal axis of the saw blade, and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; a hand wheel and screw

mounted on either side of said frame for advancing and retiring said abrading wheels, and means for rotating said abrading wheels and said pair of feed rollers, substantially as described.

4. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted in said frame near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends; the said rollers being adapted to cause the saw blade to move past the abrading wheels when adjusted upon the saw and rotated; pairs of vertical guide rollers, also mounted in said frame and adjustable horizontally, and adapted to hold and guide the saw blade; of a pair of abrading wheels arranged one on either side of the saw blade with their axes parallel with the longitudinal axis of the saw blade and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; and means for advancing and retiring said abrading wheels, substantially as described.

5. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends, the said rollers being adapted to cause the saw blade to move past the abrading wheels when adjusted upon the saw and rotated; pairs of vertical guide rollers also mounted in said frame and adjustable horizontally, and adapted to hold and guide the saw blade; of a pair of abrading wheels each mounted upon a shaft journaled in a sliding block on either side of said saw blade, having their axes parallel with the longitudinal axis of the saw blade, and being adapted to cut into the sides of the saw teeth near the base thereof on both sides simultaneously; a hand wheel and screw mounted on either side of said frame for advancing and retiring said abrading wheels, and means for rotating said abrading wheels, substantially as described.

6. In a machine for sharpening saw teeth, the combination with an upright frame, a pair of vertical feed rollers mounted therein near one end thereof and adjustable horizontally; a bevel gear on the lower end of one of said rollers meshing with a bevel pinion mounted upon a shaft journaled in the lower part of said frame; a pulley on said shaft, means for driving said pulley; gearing between said feed rollers at their lower ends for causing said rollers to rotate simultaneously but in opposite

directions; pairs of vertical guide rollers also
mounted in said frame and adjustable hori-
zontally; a hand wheel and screw carrying a
vertically adjustable block, mounted in the
5 lower part of said frame, and adapted to sup-
port the lower edge of the saw blade; a pair
of abrading wheels each mounted upon a
shaft journaled in a sliding block on either
side of said saw blade, having their axes par-
10 allel with the longitudinal axis of the saw
blade, and being adapted to cut into the sides
of the saw teeth near the base thereof on
either side of the saw blade; a hand wheel

and screw mounted on either side of said frame
for advancing and retiring said abrading 15
wheels independent of each other; and a pul-
ley fixed on the same shaft with each of said
abrading wheels, and means for driving said
pulleys, substantially as described.

In testimony whereof I affix my signature 20
in presence of two witnesses.

RUBEN F. BARKER.

Witnesses:

E. C. EASTMAN,
CHAS. H. DAVIS.