

No. 669,251.

Patented Mar. 5, 1901.

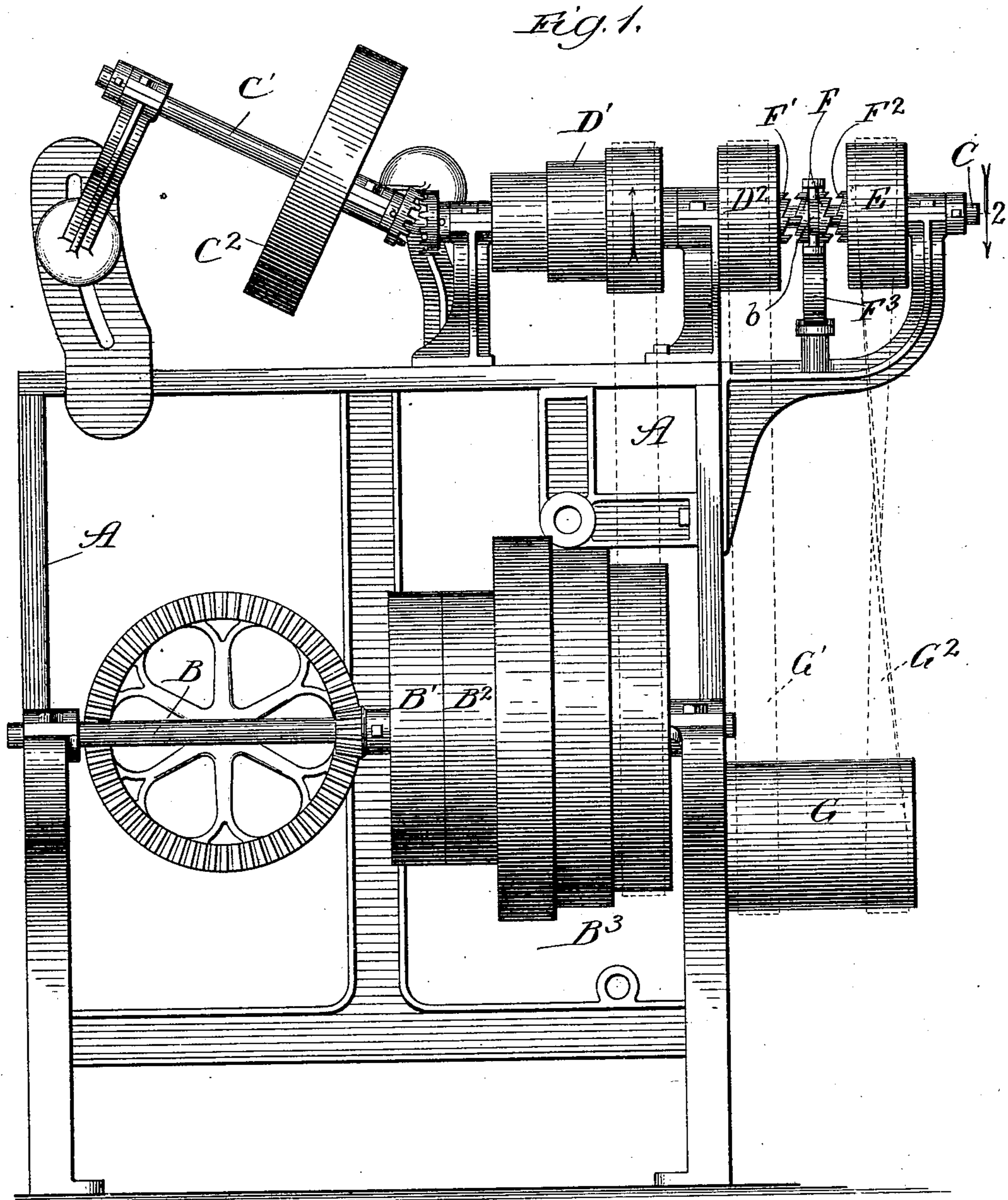
L. L. FILSTRUP & H. P. SCHOFIELD.

SAW SHARPENING MACHINE.

(Application filed Dec. 3, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
E. S. Gaylord,
John Enders &

Inventors
(Lars L. Filstrup,
Henry P. Schofield,
By *[Signature]* *[Signature]* *[Signature]*

No. 669,251.

Patented Mar. 5, 1901.

L. L. FILSTRUP & H. P. SCHOFIELD.

SAW SHARPENING MACHINE.

(Application filed Dec. 3, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

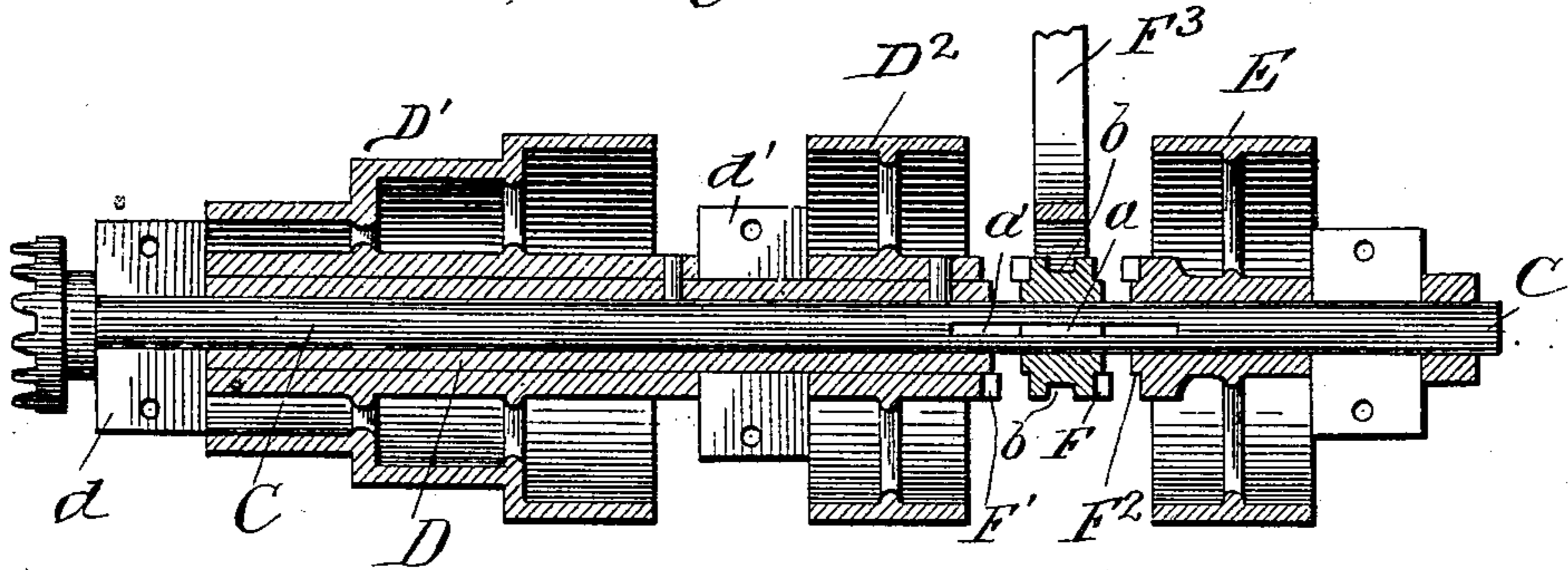


Fig. 3.

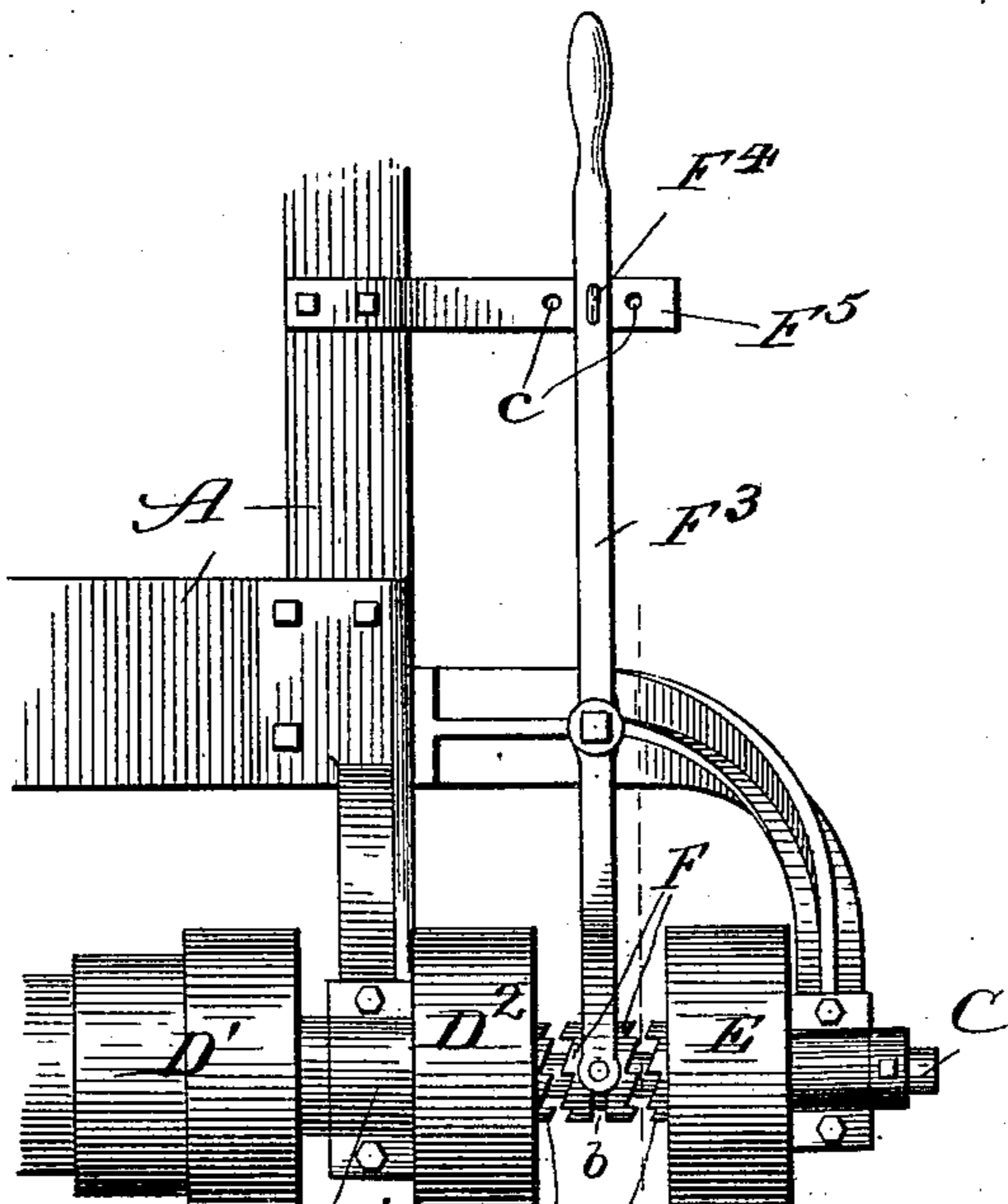
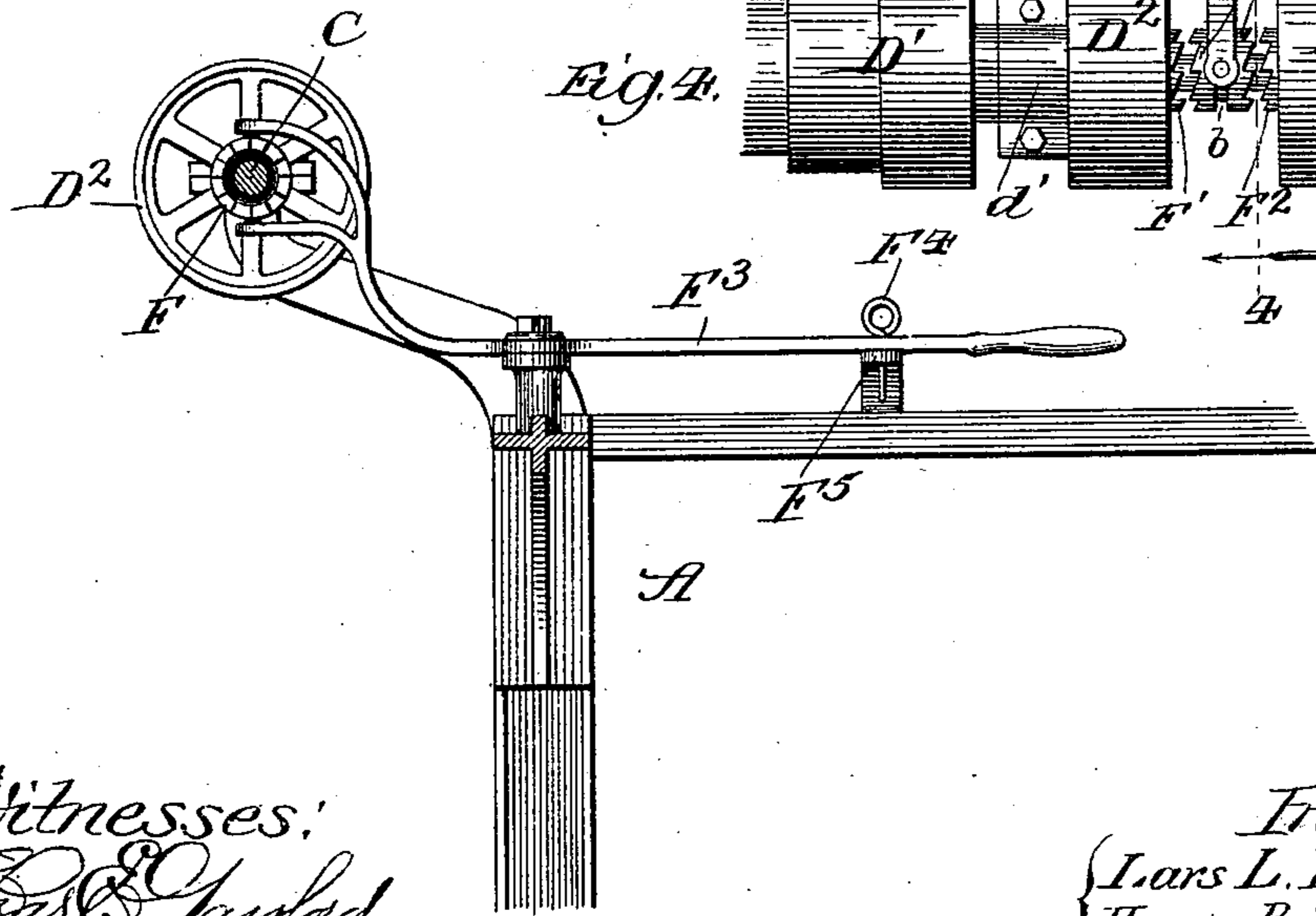


Fig. 4.



Witnesses:
Eas. Gaylad,
John Enders Jr.

Inventors
Lars L. Filstrup,
Henry P. Schofield,
By *Wm. H. Dyer* Attorney

UNITED STATES PATENT OFFICE.

LARS L. FILSTRUP AND HENRY P. SCHOFIELD, OF CHICAGO, ILLINOIS.

SAW-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 669,251, dated March 5, 1901.

Application filed December 3, 1900. Serial No. 38,497. (No model.)

To all whom it may concern:

Be it known that we, LARS L. FILSTRUP and HENRY P. SCHOFIELD, citizens 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-Sharp-
5 ening Machines, of which the following is a specification.

Our invention relates particularly to saw-sharpening machines employing a single grinding-wheel; and our object is to provide simple means for effecting a reversal of motion of the grinding-wheel to adapt the machine to the purpose of sharpening saws having teeth at both edges.

It may be stated preliminarily that in grinding a saw burs are necessarily produced on the side of the teeth away from the grinding-wheel. It follows that when a double-toothed
20 saw is ground on a machine having a single grinding-wheel which is incapable of reversal the burs produced at the two sets of teeth are on opposite sides of the saw. The effect is to cause an untrue operation of the saw, the tendency of the saw being to warp from its true plane.

The accompanying drawings illustrate our invention applied to a machine of the kind described in Letters Patent No. 628,655, granted
30 to Lars L. Filstrup July 11, 1899. The drawings show only so much of the machine described in said patent as is necessary for an understanding of the present invention.

In the drawings, Figure 1 represents a view in rear elevation of a saw-sharpening machine equipped with our improvements; Fig. 2, a broken section taken as indicated at line 2 of Fig. 1; Fig. 3, a broken plan view of a portion of the rear end of the machine, and Fig.
40 4 a broken vertical section taken as indicated at line 4 of Fig. 3.

It is common in machines of this character to employ an inclined grinding-wheel at the front end of the machine and an inclined shaft at the rear end of the machine, which is parallel to the grinding-wheel arbor and serves to communicate motion to said arbor. In the drawings the shaft which serves to communicate motion to the driving-wheel
50 arbor is shown, and the reversing means is shown applied to said shaft.

A represents a machine-frame; B, the main

shaft of the machine, the same being provided with tight and loose pulleys B' B² and a cone-pulley B³; C, a horizontally-disposed shaft; C', an inclined shaft which receives motion from the shaft C, as described in said patent; C², a pulley on the shaft C', from whence motion is communicated to the grinding-wheel arbor; D, a hollow shaft or sleeve
60 journaled on the shaft C; D', a cone-pulley fixed to the sleeve D and having constant direction of rotation; D², a pulley fixed to the sleeve D; E, a pulley journaled on the shaft C; F, a clutch-wheel on the shaft C and having longitudinal movement thereon, being provided with a key *a*, which moves in a groove *a'*, with which said shaft is provided; F' F², clutch members rigid with the pulleys D² E, respectively; F³, a shifting-lever pivoted to
70 the frame of the machine and provided with a bifurcated head having pins or lugs *b*, which engage a groove *b'*, with which the clutch F is provided; F⁴, a pin which serves to secure the lever F³ to a bracket F⁵, having perforations *c*, and G a suitably-journaled counter-pulley, which is preferably of sufficient width to receive belts G' and G². (Indicated in dotted lines in Fig. 1.)

As shown in Figs. 1 and 2, the shaft C is journaled in bearings *d d'*, the pulley D' being located between said bearings in proper position to receive motion from the cone-pulley B³. The pulleys B³ D' are usually connected by a belt, and such a connection is indicated in dotted lines in Fig. 1. The bracket F⁵ is provided with three perforations, two of which appear in Fig. 3 and the other of which is concealed by the lever F³ and the pin F⁴, said pin being shown securing the lever in its intermediate position and holding the clutch F out of gear with both the pulleys D² E.

From the foregoing description it will be readily understood that when the sleeve D is rotated through the medium of the pulley D' the shaft C may be caused to rotate in the same direction by simply moving the clutch F into engagement with the clutch member F' on the pulley D², and said shaft may be caused to rotate in a direction opposite the direction of rotation of the sleeve D by shifting the clutch F so that it will engage the clutch member F² on the pulley E, it being assumed that motion is being communicated

to the pulley G and back to the pulley E through the medium of the straight belt G' and the twisted belt G². It thus appears that the shaft C may be caused to remain at rest
 5 or to rotate in either direction, according to the position of the clutch F, while the sleeve D receives from the main shaft a continuous rotation in a given direction.

While it is preferred to employ a two-part
 10 shaft for communicating motion to the grinding-wheel arbor in the manner described in the above-named patent, the present invention is not limited to use in connection with such a construction. The general construction of the saw-sharpening machine may be
 15 varied and modifications in the details of our improvements may be made. Hence we wish to be understood as intending no limitation by the foregoing detailed description except
 20 as shall appear from the appended claims.

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

1. In a saw-sharpening machine, for operating upon band-saws having teeth on each edge,
 25 a shaft through the medium of which motion is communicated to the grinding-wheel, and means for reversing the direction of rotation of said shaft, substantially as and for the purpose set forth.

30 2. In a saw-sharpening machine for operating upon band-saws having teeth on each edge, said machine having a shaft located at some distance from the grinding-wheel arbor, a pulley having a constant direction of rotation,
 35 and means for communicating motion from said pulley to said shaft in either direction as desired, substantially as and for the purpose set forth.

40 3. In a saw-sharpening machine for operating upon band-saws having teeth on each edge, said machine having a shaft for communicating motion directly or indirectly to the grinding-wheel arbor, a sleeve journaled on said shaft, a pulley secured to said sleeve through
 45 the medium of which said sleeve is rotated, a pulley rotated through the medium of said sleeve, a pulley journaled on said shaft, a counter-pulley, means for communicating motion from said sleeve-actuated pulley to said
 50 counter-pulley and back in the reverse direction to the pulley journaled on said shaft, and means for connecting either one of said last-named pulleys to cause said shaft to rotate therewith, substantially as and for the
 55 purpose set forth.

4. In a saw-sharpening machine for operating upon band-saws having teeth on each edge, said machine having a shaft for communicating motion directly or indirectly to a grinding-wheel arbor, a sleeve journaled on said shaft,
 60 a pulley through the medium of which said sleeve is rotated, a pulley rotated through the medium of said sleeve, a counter-pulley having belt connection with said last-named pulley, a pulley journaled on said shaft and
 65 receiving motion in a reverse direction from the counter-pulley, and means for connecting the shaft to cause the same to rotate with the sleeve-actuated pulley or with the pulley journaled on said shaft as desired, substantially
 70 as and for the purpose set forth.

5. In a saw-sharpening machine for operating upon band-saws having teeth on each edge, said machine having a shaft for communicating motion directly or indirectly to the grinding-wheel arbor, a sleeve journaled upon said shaft, a pulley through the medium of which
 75 said sleeve is rotated, a pulley rotated through the medium of said sleeve, a pulley journaled on said shaft, a clutch movable longitudinally
 80 of said shaft and serving to communicate motion to the shaft, clutch members connected with the sleeve-actuated pulley and the pulley journaled on said shaft, means for shifting the clutch on said shaft to bring the same
 85 into engagement with either of said clutch members as desired, and means for communicating a reverse motion from the sleeve-actuated pulley to the pulley journaled on said shaft, substantially as and for the purpose
 90 set forth.

6. In a saw-sharpening machine for operating upon band-saws having teeth on each edge, said machine having a shaft of the nature described, a sleeve journaled on said shaft, a pulley
 95 for communicating motion to said sleeve, a pulley actuated by said sleeve, a clutch member connected with said last-named pulley to rotate therewith, a clutch F keyed to said shaft, a pulley E having a clutch member
 100 ber, a shifting-lever F³, and means for communicating motion in a reverse direction from the sleeve-actuated pulley to the pulley journaled on said shaft, substantially as described.

LARS L. FILSTRUP.
 HENRY P. SCHOFIELD.

In presence of—
 D. W. LEE,
 ALBERT D. BACCI.