

F. H. CLEMENT.
Band Sawing Machine.

No. 219,148.

Patented Sept. 2, 1879

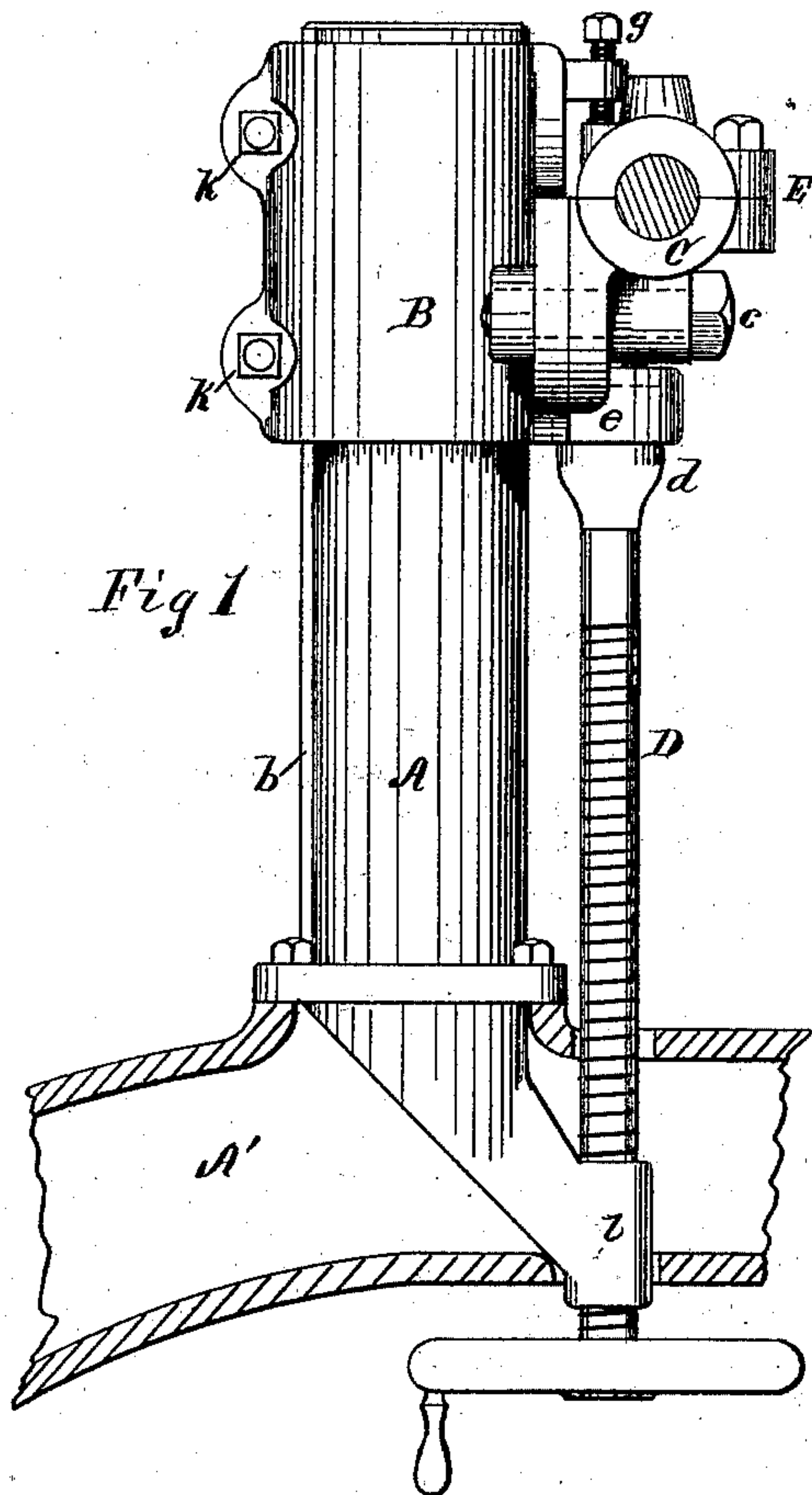


Fig 1

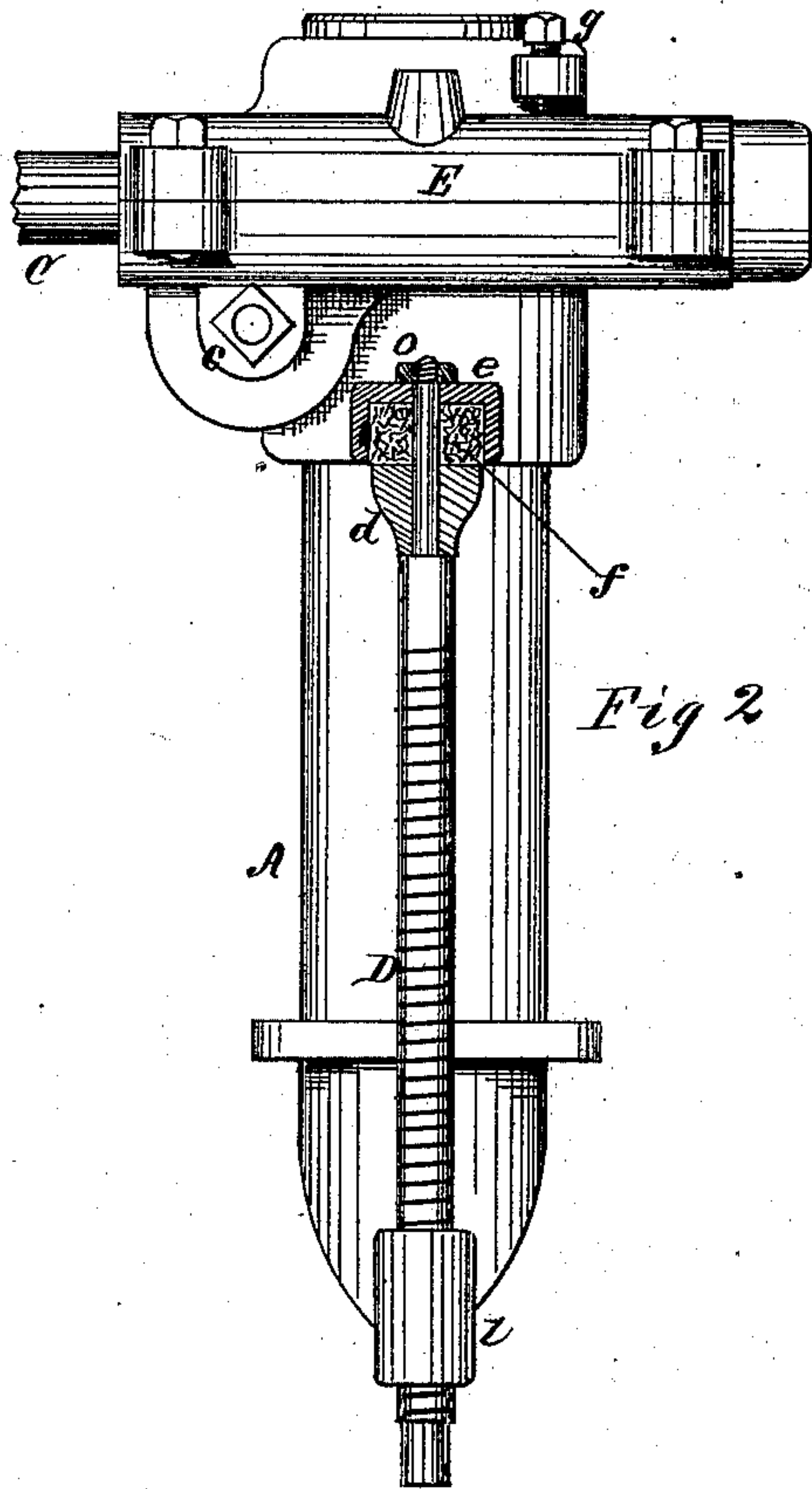


Fig 2

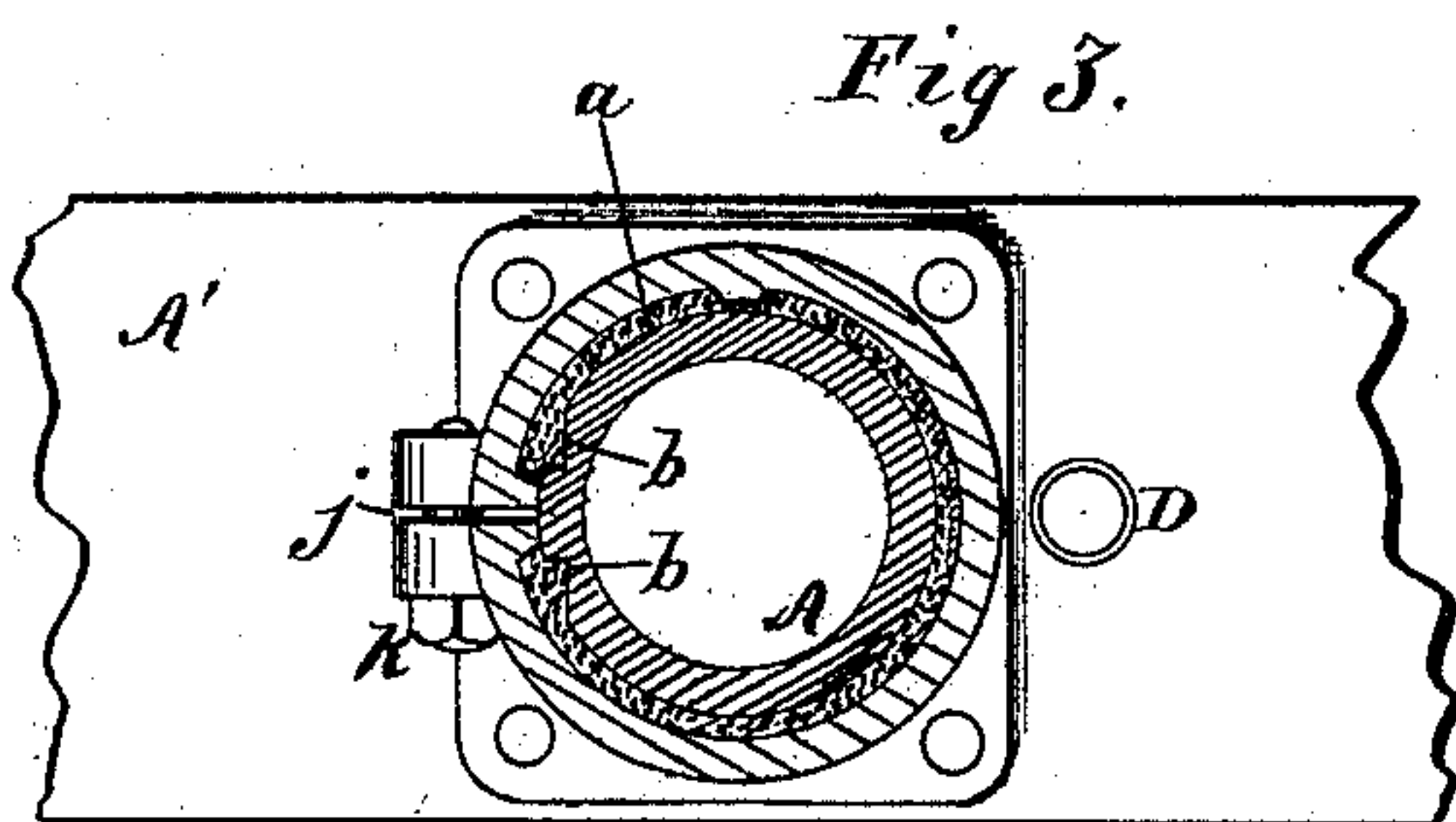


Fig 3.

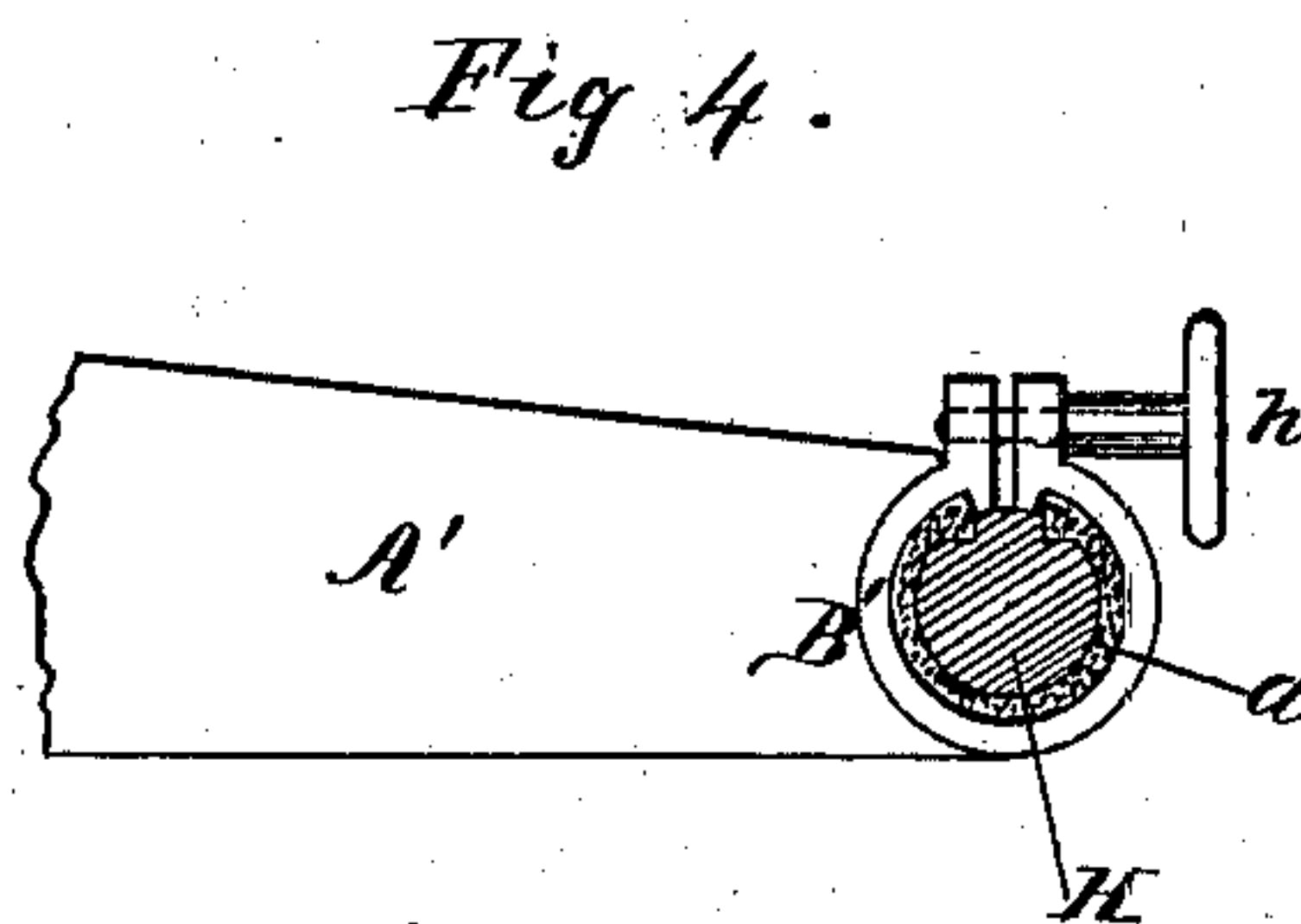


Fig 4.

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IMPROVEMENT IN BAND-SAWING MACHINES.

Specification forming part of Letters Patent No. **219,148**, dated September 2, 1879; application filed March 18, 1879.

To all whom it may concern:

Be it known that I, FRANK H. CLEMENT, of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Band-Sawing Machines; and I do hereby declare that the following is a clear and accurate description thereof, reference being had to the accompanying drawings, in which—

Figures 1 and 2 are respectively front and side elevations of my invention. Fig. 3 is a sectional plan view. Fig. 4 is a detail.

The nature and objects of my invention will appear from the subjoined description.

It has heretofore been the general practice in the construction of band-saw machines to form the slides or ways upon which the upper wheel is adjusted in one piece with the frame, and plane up the same with beveled bearings, upon which the cross-head supporting the wheel was accurately fitted by means of gibs and take-up screws. This is a very expensive method of construction, and the beveled bearings, if left a trifle slack, as is generally necessary, allow the wheel to sway laterally, and thereby break saw-blades.

I obviate these difficulties as follows: A is a cylindrical column, preferably made in a separate piece from the frame of the machine A', and secured thereto by bolts or in other suitable manner. This column is turned perfectly straight and true, and receives the hollow cylindrical slide B, to a flange upon which the wheel-bearing E is pivoted by means of a stud, *c*, as is common in this class of machines.

D is the adjusting-screw, which is threaded into a nut, *l*, the latter being cast in one piece with the column A, as indicated. The upper end of the screw D is turned down to receive the collar *d* and the elastic washer or cushion *f*, Fig. 2.

A recessed boss, *e*, is provided on the slide B, underneath the bearing E, in which the cushion *f* rests, and through the upper wall of which the reduced end of the screw passes to receive the nut *o*. This nut is screwed up tightly against a shoulder, so as not to be loosened by a reverse motion of the screw.

The cushion *f* acts as an elastic medium between the straining-screw and the saw-blade, and also to compensate for the contraction of

the latter after being warmed by use. By being inclosed in the cup *e*, oil is prevented from gaining access and rotting it.

The cylindrical portion of the slide B is recessed internally somewhat larger than the column A, and the intervening space *a*, Fig. 3, is filled with Babbitt or other easily fusible metal; and for the purpose of retaining the slide in the same line axially as it moves on the column, I provide two grooves or rabbets, *b*, in the column, into which the soft metal flows, making a perfect fit and retaining the slide firmly, while at the same time it is easily moved along the column by the screw D. To compensate the wear of these parts, I divide the shell B on one side, as indicated at *j*, Fig. 3, midway between the grooves *b*, and provide clamp-screws *k* for closing the same, the elasticity of the shell B allowing of sufficient adjustment for that purpose.

It will be observed that tightening the screws *k* closes the lining *a* squarely against the sides of the rabbets *b* in opposite directions, while at the same time any slackness at the sides of the column is taken up.

By the arrangement of the screw D under or nearly under the bearing E, the strain on the saw-blade is conveyed directly to the nut *l*, and the cross-head B is thereby relieved, and the tendency of the parts to cramping is removed.

The wheel is attached to the shaft at C, Fig. 2, and the usual lateral adjustment is obtained by the set-screw *g*, which bears against the box E. The strain of the saw and weight of the wheel retain the bearing in contact with the set-screw, the pivot *c* being the axial point.

The lining *a* and grooves *b* are also applicable to other constructions where slides and gibs have heretofore been used. In Fig. 4 I have shown them as applied to the adjustable guide-post H of a band-saw machine. The shell B' being divided, as before, the clamp-wheel *h* clasps the parts firmly together.

When it is desired to adjust the spindle H the clamp-wheel is slackened, and the elasticity of the shell B' (which is purposely compressed when the lining *a* is poured) thus relieves the spindle and permits it to be adjusted.

I do not confine myself to the precise form of groove or rabbet *b* shown; but I consider that

the preferable shape. Any form or arrangement of such grooves in connection with a divided shell and a soft-metal lining therefor, whereby the parts are retained in relative axial position and the wear compensated by clamp-screws, would fulfill the requirements of this part of my invention.

If found desirable, the column A may be cast in one piece with the machine-frame, in which case the whole would have to be swung in a lathe to turn the column.

I am aware that it is not new to support the upper wheel of a band-saw machine upon a cylindrical column, and that an elastic cushion between it and the adjusting-screw has been in common use for many years.

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

1. In combination with a cylindrical column, A, provided with a groove or grooves, *b*, the divided recessed cross-head B, arranged to be

lined with an easily-fusible metal and clamped by screws *k*, substantially as and for the purposes set forth.

2. In a band-saw machine, the combination of a column, A, a cross-head, B, fitted thereto, an adjusting-screw, D, arranged nearly or directly under the bearing E, and threaded in a nut, *l*, formed in one piece with said column, substantially as set forth.

3. In a band-sawing machine, the cross-head B, provided with the cup *e* to receive the cushion *f*, in combination with the traveling-screw D and the nut *l*, cast in one piece with the column A, substantially as described.

Witness my hand this 14th day of March, 1879.

FRANK H. CLEMENT.

Witnesses:

WM. A. MONTGOMERY,
WM. J. CREELMAN.