

(No Model.)

2 Sheets—Sheet 1.

D. B. HANSON.
BAND SAW MILL.

No. 532,663.

Patented Jan. 15, 1895.

Fig. 1.

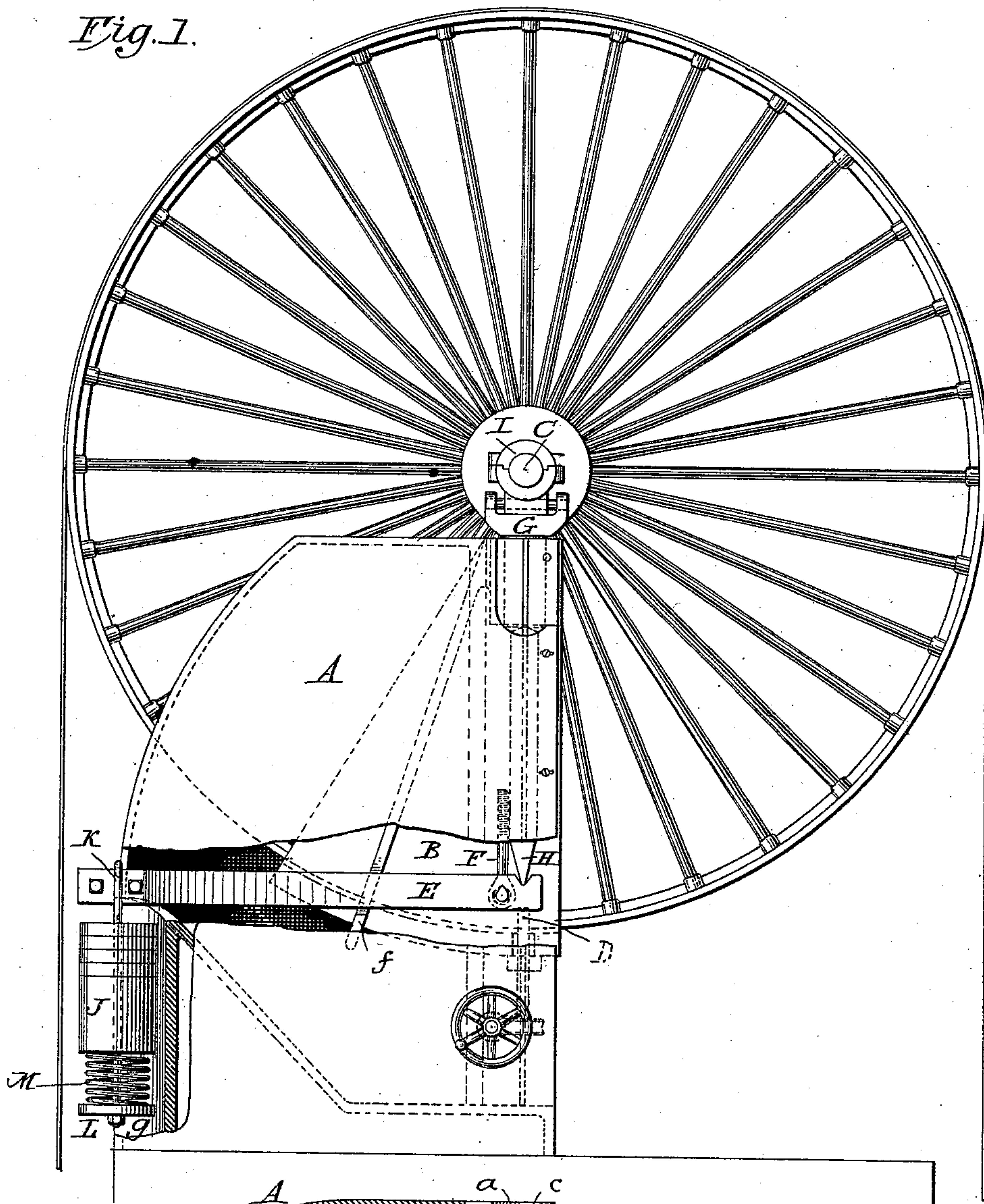
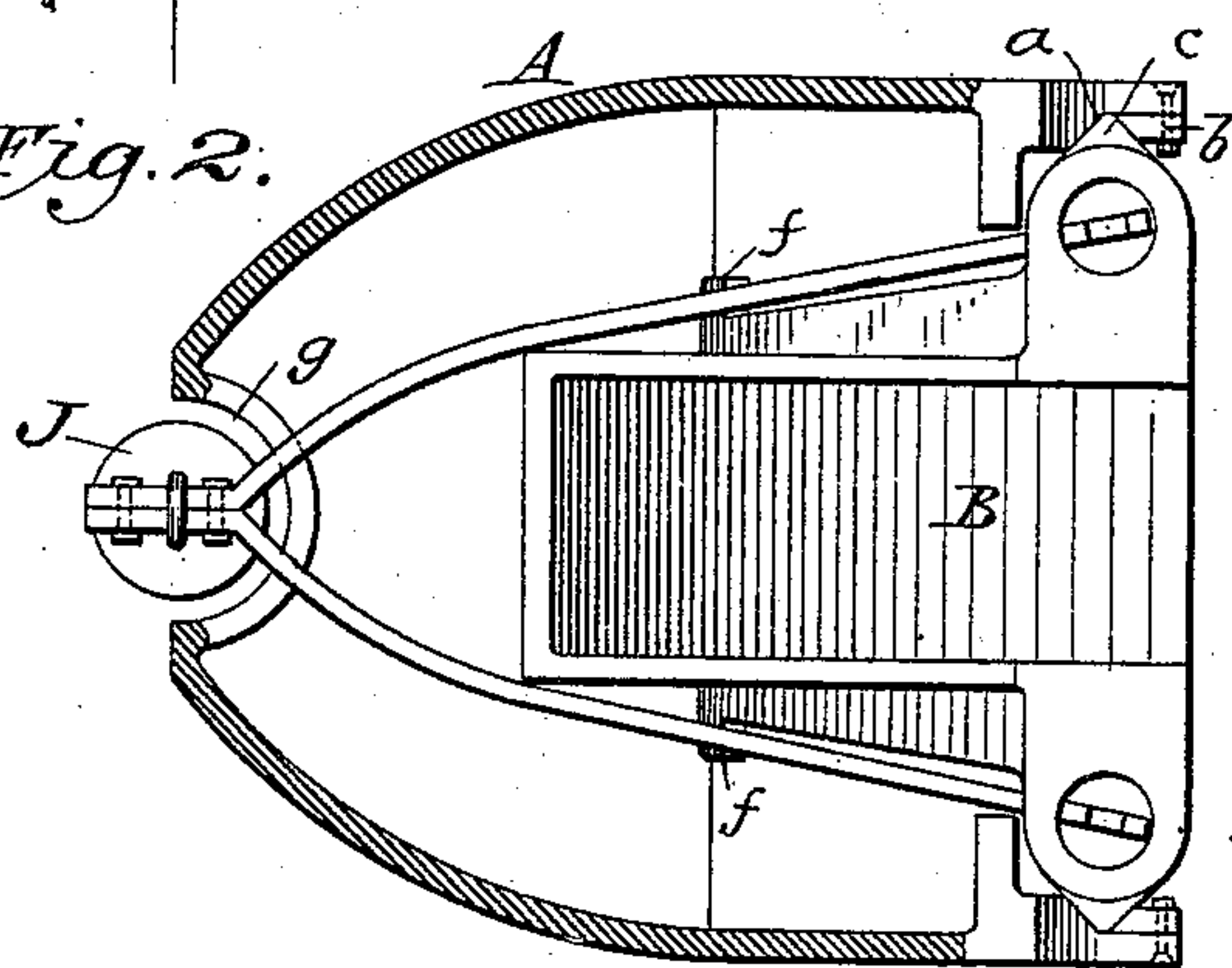


Fig. 2.



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Witnesses,
Sidney P. Hollingsworth
Chas. Brundage

(No Model.)

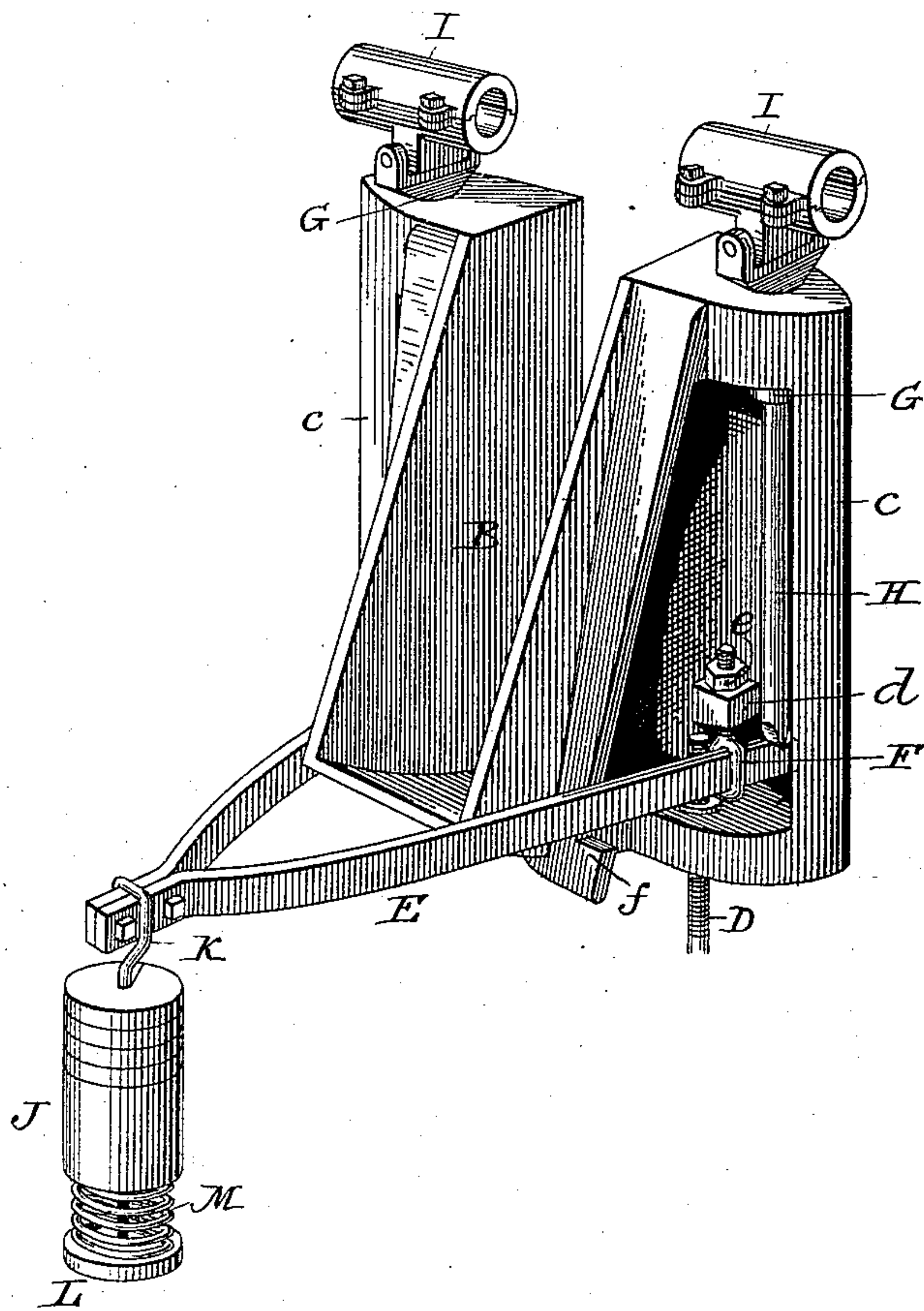
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Fig. 3.



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UNITED STATES PATENT OFFICE.

DEMPSEY B. HANSON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
ONE-HALF TO THE EDWARD P. ALLIS COMPANY, OF MILWAUKEE,
WISCONSIN.

BAND-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 532,663, dated January 15, 1895.

Application filed October 24, 1894. Serial No. 526,851. (No model.)

To all whom it may concern:

Be it known that I, DEMPSEY B. HANSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Band-Saw Mills, of which the following is a specification.

My invention relates to band saw mills, and is in the nature of an improvement upon that set forth in Letters Patent of the United States granted to Hinkley, Hanson and Trout on the 14th day of February, 1893, and numbered 491,683.

The present improvements consist primarily in a novel construction and arrangement of the vertically sliding yoke or frame in which the upper band wheel shaft is carried, whereby the parts are relieved of side strain and are enabled to move more freely than under the former construction.

Other features and details will be pointed out in the following description.

Figure 1 is a side elevation of the upper portion of my improved mill partly in section; Fig. 2, a top plan view, with the main frame in section and with various parts removed; and Fig. 3, a perspective view of the yoke or inner sliding frame.

The lower portion of the main frame, the lower band wheel and other parts not directly involved in the present invention are not represented in the drawings, being of any approved construction, such for instance as represented in the patent hereinbefore referred to.

A indicates the upper portion of the main frame of a band saw mill, which is preferably of "box" form. Near the forward edges of the frame there are formed vertical V-guides or ways *a*, one side of each of which is formed by an adjustable plate or bar *b*, slotted horizontally, and secured to frame A by bolts or other suitable fastenings.

Within frame A is placed a secondary frame or yoke B, having V-shaped ribs *c* at its sides to enter the guides or ways *a*. This yoke is of the form illustrated in Fig. 3, and is designed to support and carry the upper band-wheel shaft C. As the saws vary in length and are liable to stretch or elongate in use, it is necessary to provide adjustment of the

band wheel C, and it is for this purpose that the yoke is arranged to slide in ways as explained. The strain upon all parts of a machine of this character is very great, the wear is considerable, and the parts being quite large it is difficult to secure and maintain a perfect fit of the guiding ribs and ways unless provision be made to take up wear and compensate for expansion and contraction,— hence the necessity of the adjustable strips *b*.

For the purpose of supporting, raising and lowering the yoke or secondary frame B, I provide vertical screws D, operated by worm gear or otherwise, as indicated in Figs. 1 and 3, and as fully set forth in the patent hereinbefore mentioned. The yoke after being adjusted to suit the saw, is maintained at such adjustment, but as the saw lengthens somewhat by reason of heating when in use, and as the strain upon it and upon the upper wheel constantly varies with variations in the wood through which it passes, it is necessary to provide an automatic and yielding or elastic tension, independent of the primary adjustment noted. This automatic tension is produced by a counterweighted lever E, carried by stirrups or hangers F, and acting against the lower ends of cylindrical pedestals G, through the medium of rods H,—the pedestals carrying at their upper ends the boxes I in which shaft C turns. The stirrups or hangers F are screw threaded, pass through lugs *d* projecting from the sides of yoke B, and are brought to and maintained at any desired height by nuts *e* screwed upon the threaded stems of the stirrups above the lugs *d*, as shown in Fig. 3.

It will be observed upon reference to the several figures that the axes of shaft C, pedestals G, and rods H all occupy a vertical plane coincident with the middle line of the guides *a*, *a*, and that there is consequently little or no side strain upon the guides. As a consequence, the yoke B moves far more freely within frame A, and the pedestals G move more freely within the yoke than where the shaft and pedestals are out of plane with the guides. Moreover, there is less strain upon the frame and yoke, and not so much vibration as there is where the yoke is placed outside and in front of the main frame.

The hangers F may be made in the form of stirrups, as shown in Fig. 3; or they may be L-shaped, the horizontal member being the sustaining portion on which lever E rests, as in Fig. 1.

The bearings are advisably made with knife edges to render the action sensitive.

The lever E may be conveniently made of two bars of iron or steel, bent to pass around the yoke or sliding frame B, and laid together at their rear ends, which may be bolted or riveted as shown. Upon the rear end of the lever is hung a heavy weight J, which may be increased or diminished according to the tension desired.

The weight J, preferably made up of independent sections, is carried by a rod or hanger K, provided at its lower end with a disk L. Upon this disk and beneath the weight is placed a heavy spiral spring M, sufficient to sustain the weight while at rest, without collapsing or being fully compressed. The purpose of this spring is to take up the initial movement of lever E, and thus to relieve the parts of jar and concussion. By this provision I also render the tension far more sensitive and responsive to variations in the strain upon the saw and its carrying wheel C. After the parts are once adjusted, and the mill is put in operation, the weight practically stands still while the lever vibrates to take up or give out the saw, the spring M responding to each and every vibration, however short in time or range, whereas they would be unanswered by the weight alone, owing to its inertia and consequently slow action.

By combining the weight and spring I secure the wide range of movement allowed by the weight, together with the great delicacy and promptness of action due to the spring; whereas by the use of either alone one or the other desirable quality is lost.

The yoke is represented as cast in one piece with a portion to guard the wheel, suitable strengthening ribs, and stops f to limit the descent of the lever. These stops prevent the pedestals from being unduly elevated when the saw is off the wheels.

As shown in Figs. 1 and 2, the lever E ex-

tends through an opening in the rear side of the frame A, which frame is formed with a recess g, to receive the weight J. By this arrangement the weight is in a measure inclosed and is consequently not liable to be interfered with, yet is accessible at all times so that it may be increased or diminished as required.

Having thus described my invention, what I claim is—

1. In a band saw mill, the combination of a main frame provided with guides, a supplemental frame or yoke movable in said guides, an upper band-wheel shaft, and pedestals or supports for said shaft carried by the yoke,—the axes of the shaft and pedestals being in a common plane with the guides, substantially as and for the purpose set forth.

2. In combination with main frame A provided with guides or ways a, supplemental frame or yoke B having ribs c seated in said guides, pedestals G mounted in the yoke B, shaft C supported by said pedestals, a counterweighted lever for sustaining the pedestals G, and screws for sustaining the yoke B, the shaft C and pedestals G having their axes in a common plane with the guides and ribs a and c.

3. In combination with the main frame of a band saw-mill, a sliding yoke or frame B mounted within the main frame and provided with lugs d and with stops f, stirrups F carried by said lugs, a lever E carried by the stirrups, pedestals G mounted and movable in the yoke, a band-wheel shaft carried by said pedestals, and rods extending from the lever to the pedestals, substantially as and for the purpose set forth.

4. In combination with frame A having recess g, shaft C, pedestals G supporting said shaft, lever E supporting said pedestals, and weight J carried by lever E and located within the recess.

In witness whereof I hereunto set my hand in the presence of two witnesses.

DEMPSEY B. HANSON.

Witnesses:

NORMAN A. ROOT,
JOHN SIMONDS.