(No Model.)

2 Sheets—Sheet 1.

DE WITT C. PRESCOTT.

SAW GUIDE FOR BAND SAW MILLS.

No. 426,684. Patented Apr. 29, 1890.

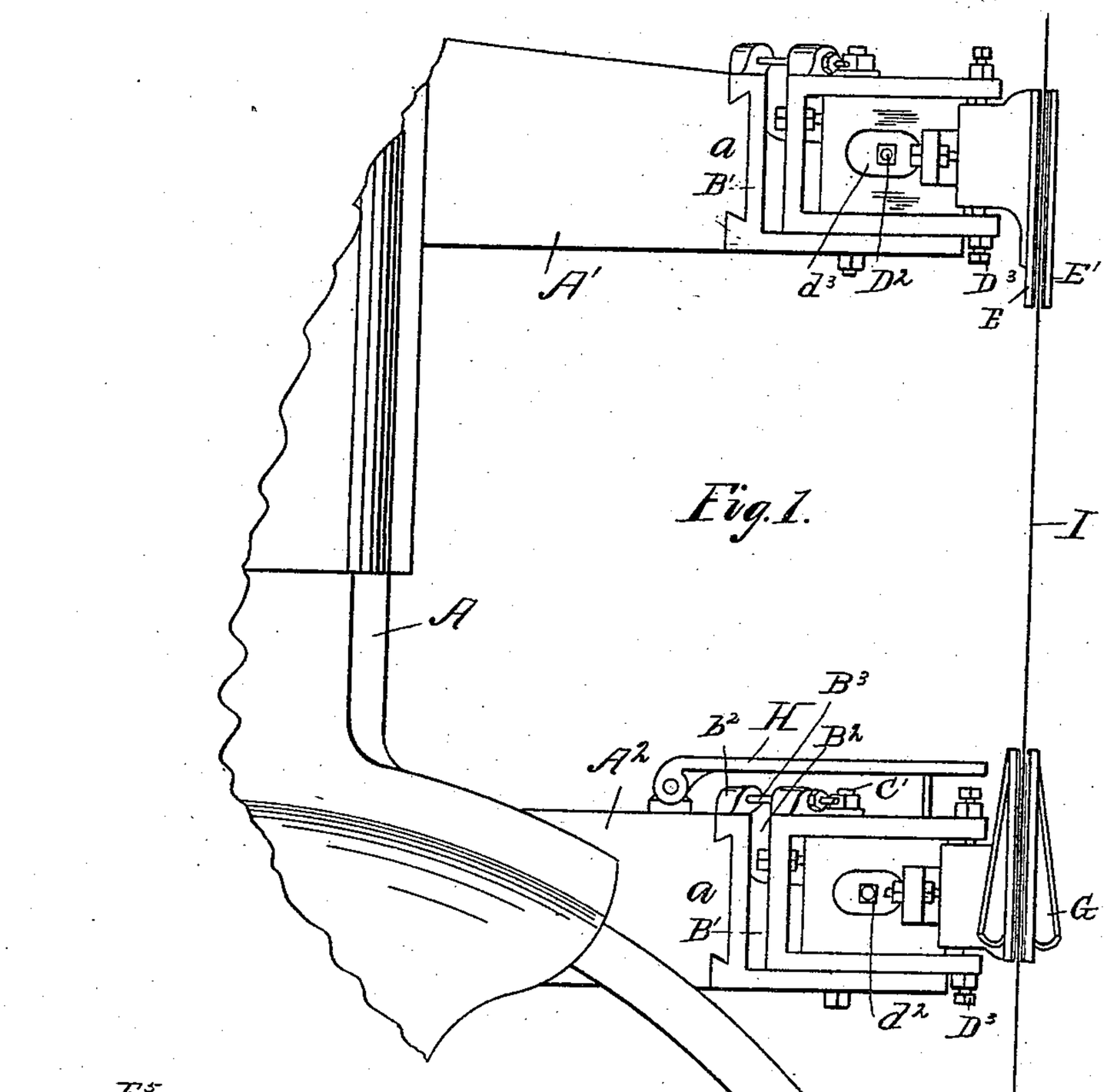

Fig. 1.

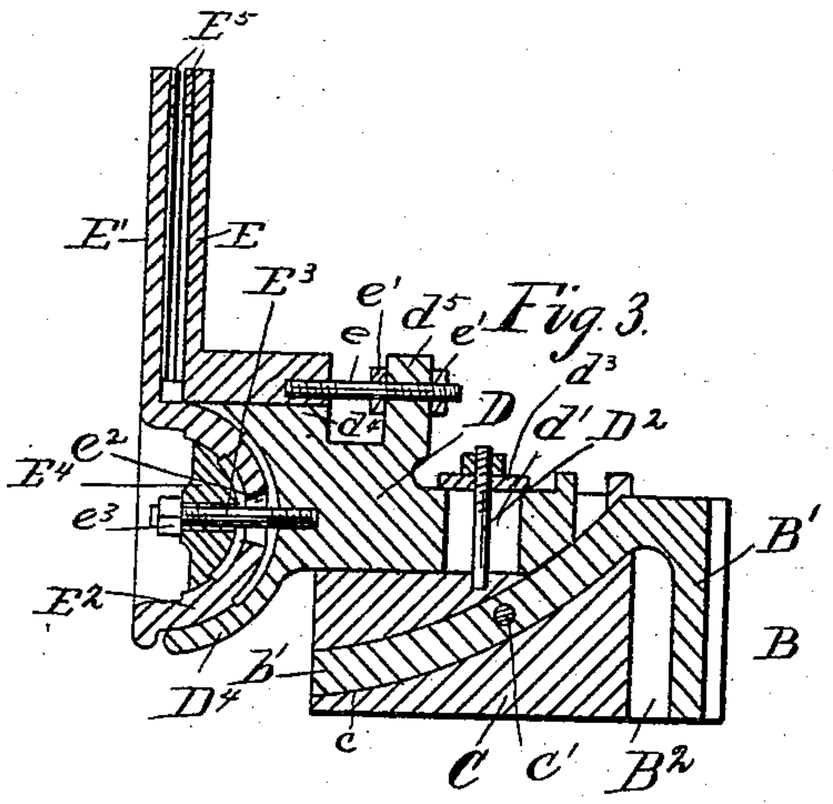

Fig. 3.

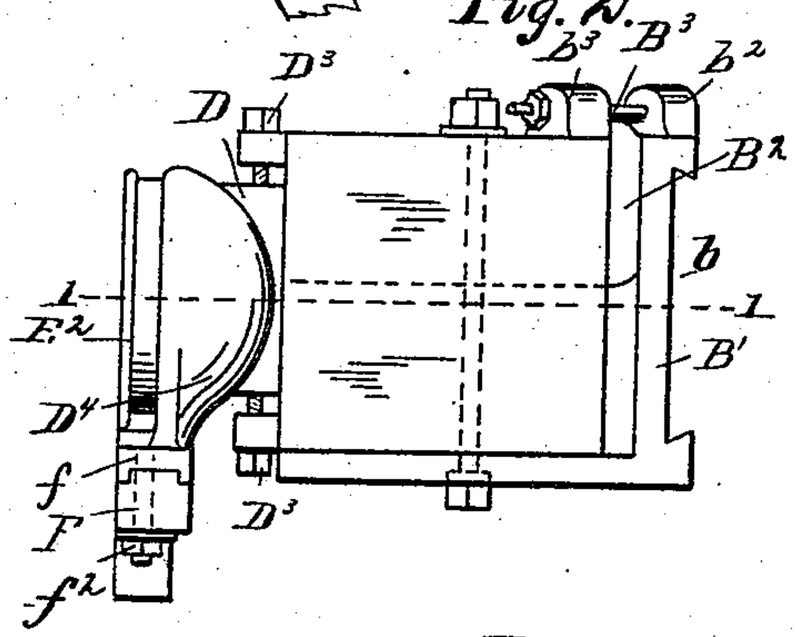

Fig. 2.

Witnesses.
B. M. Whitaker.
A. M. Best.

Inventor.
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(No Model.)

2 Sheets—Sheet 2.

DE WITT C. PRESCOTT.

SAW GUIDE FOR BAND SAW MILLS.

No. 426,684. Patented Apr. 29, 1890.

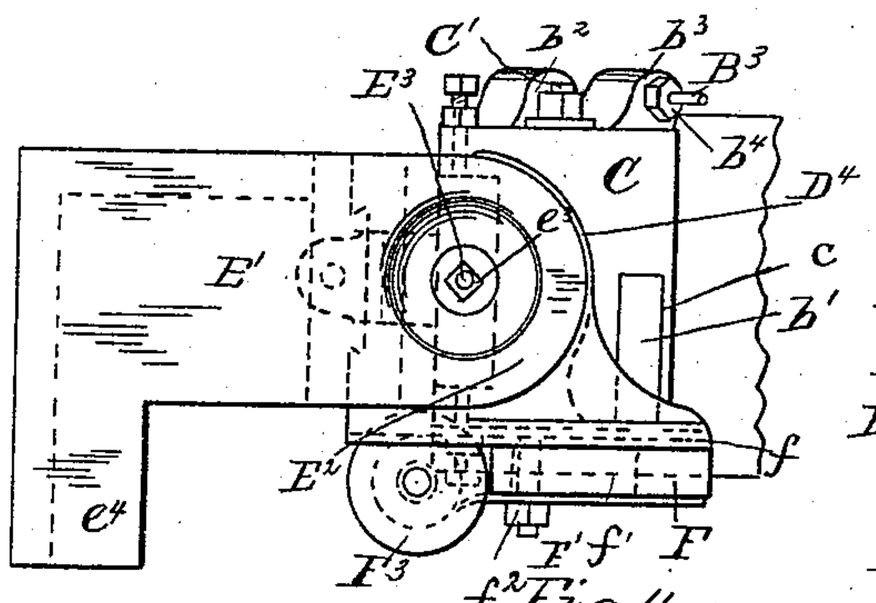

Fig. 4

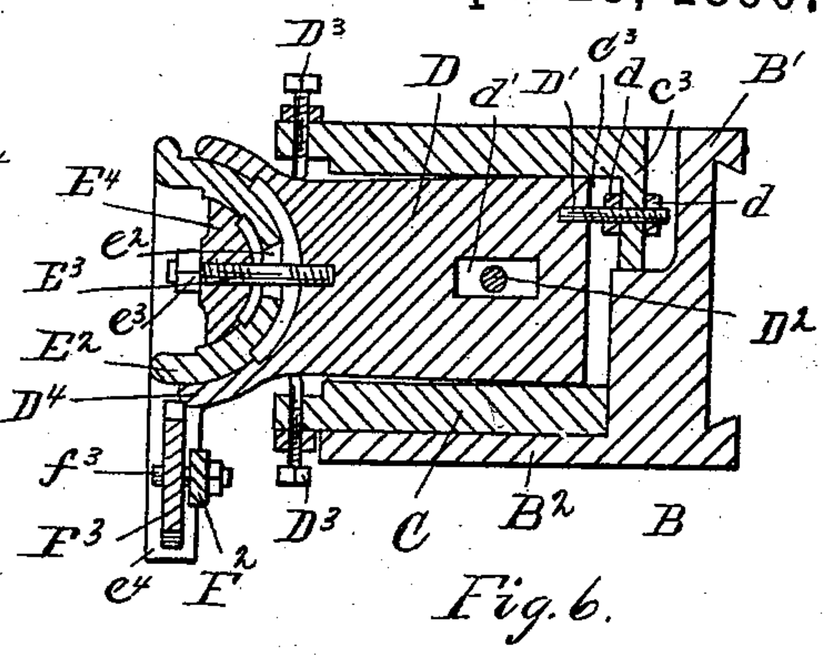

Fig. 6.

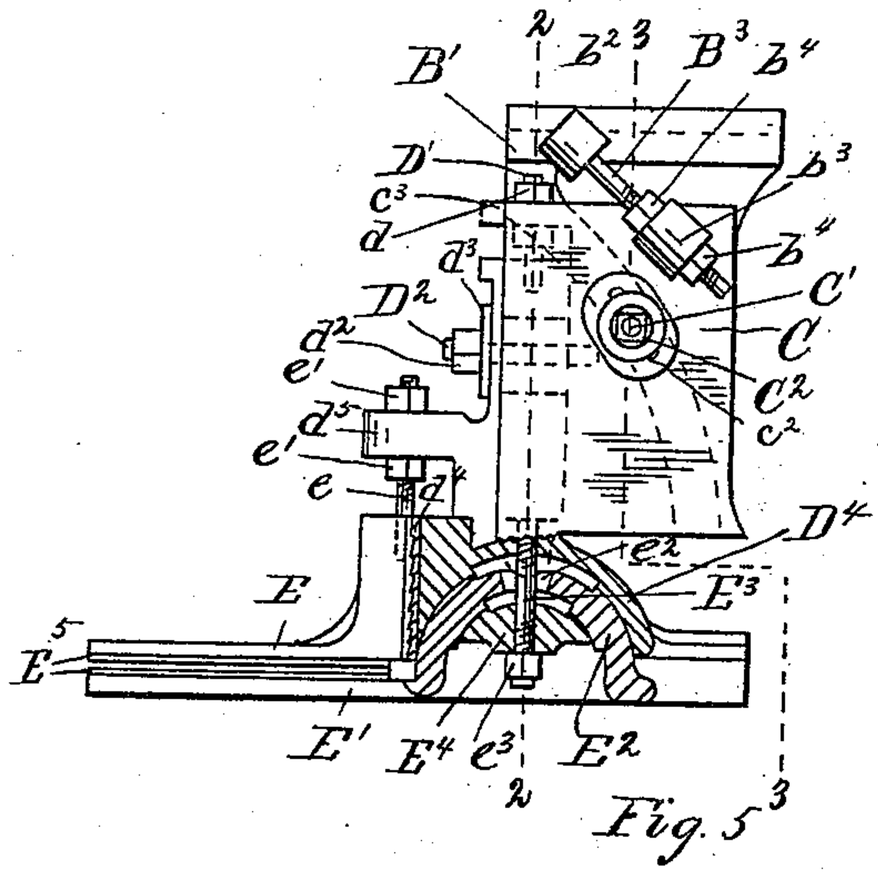

Fig. 5

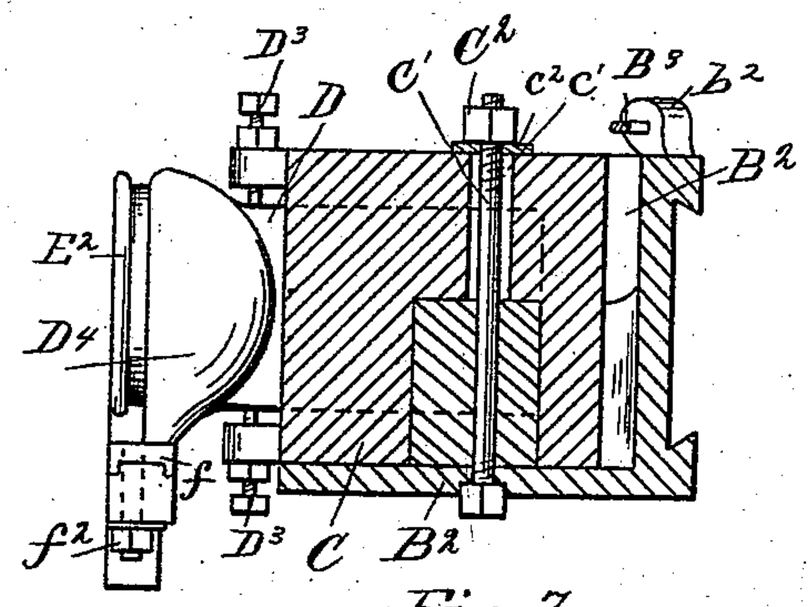

Fig. 7

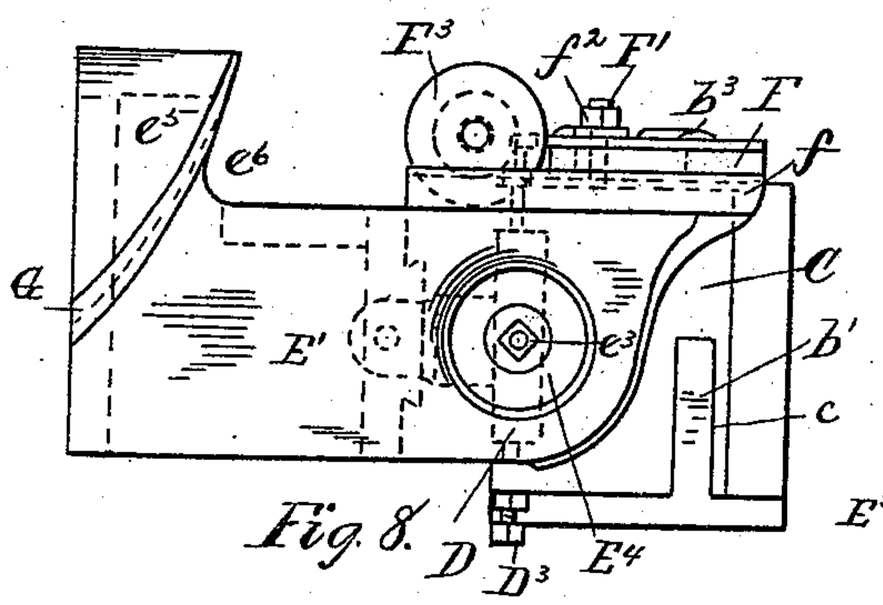

Fig. 8.

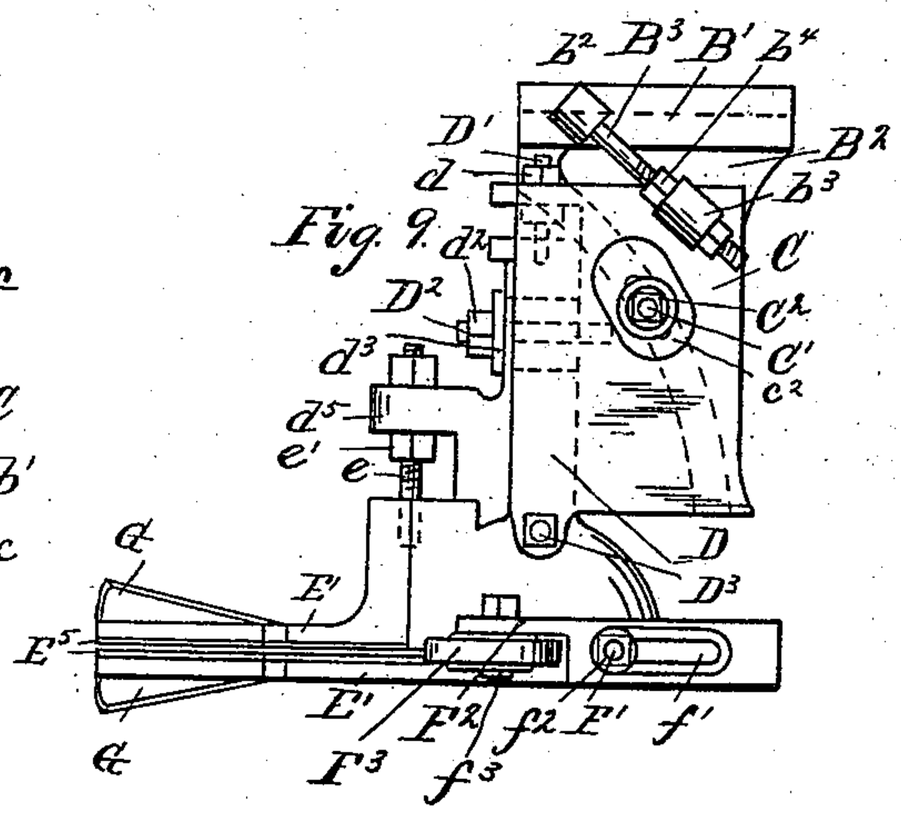

Fig. 9.

Witnesses.
B. M. Whitaker.
A. M. Best

Inventor.
De Witt C. Prescott.

By Coburn & Thacher
Attys.

UNITED STATES PATENT OFFICE.

DE WITT CLINTON PRESCOTT, OF MARINETTE, WISCONSIN.

SAW-GUIDE FOR BAND-SAW MILLS.

SPECIFICATION forming part of Letters Patent No. 426,684, dated April 29, 1890.

Application filed January 9, 1888. Serial No. 260,240. (No model.)

To all whom it may concern:

Be it known that I, DE WITT CLINTON PRESCOTT, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented a certain new and useful Improvement in Saw-Guides for Band-Saw Mills, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a band-saw mill having my improved saw-guide applied thereto; Fig. 2, a rear elevation of the upper guide; Fig. 3, a plan section taken on the line 1 1 of Fig. 2; Fig. 4, a side elevation of the same; Fig. 5, a plan view, partly in section; Fig. 6, a sectional view taken on the line 2 2 of Fig. 5; Fig. 7, a sectional view taken on the line 3 3 of Fig. 5; Fig. 8, a view similar to Fig. 4 of the lower guide, and Fig. 9 a plan view of the lower guide.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to saw-guides for band-saw mills, and has for its object to provide guides for supporting and guiding the saw, which shall be adjustable in such manner as to enable them to accomplish their work with the highest degree of efficiency.

To these ends my invention consists in certain novel features, which I will now proceed to describe, and will then particularly point out in the claims.

In the drawings, A represents a portion of the framing of a band-saw mill provided with a vertically-adjustable arm A′ for supporting the top guide, and with a fixed arm A^2 for supporting the bottom guide. These parts may be constructed in any approved manner and form in themselves no part of my present invention. Each arm is provided with a way *a*, upon which is mounted the member B, which forms the base of the guide proper.

The two guides are arranged the one above the log or other article to be operated upon and the other below the same, the former forming the top guide and the latter the bottom guide. These guides are identical so far as the main features of their construction are concerned, differing only in certain details. I will therefore proceed to describe the construction of the top guide, it being understood that the same description is in the main equally applicable to the bottom guide, and will then describe those features wherein the two constructions differ.

The base B consists of an upright plate B′ and a horizontal plate B^2, arranged at right angles to each other. The plate B′ is provided with a dovetailed groove *b*, which fits upon the corresponding way *a*, and thus serves to adjustably connect the whole guide to the arm A′. The horizontal plate B^2 is provided with an upwardly-projecting rib *b*′, extending diagonally across the same from front to rear and having a slight curvature, as shown more particularly in Fig. 3 of the drawings.

C represents a block, which is mounted upon the bottom plate B′ of the base B, and which is provided with a curved groove *c* to receive the rib *b*′. The block C is adjustable upon the base B, so as to vary its angle with relation to the same by moving it outward or inward thereon, since it is obvious that, owing to the curvature of the rib *b*′, any such movement will cause a variation in the angular relation of the two parts. To effect this adjustment, I employ a bolt B^3, mounted in a lug b^2 on the base B and passing loosely through a similar lug b^3 on the block C. Nuts b^4, mounted on the bolt B^3 on each side of the lug b^3, serve to effectuate the adjustment in an obvious manner.

In order to secure the parts after adjustment, I employ a bolt C′, which passes up through the base B and through the rib *b*′ thereon, extending upward through the block C, which is slotted, as shown at *c*′. A clamping-nut C^2 and washer c^2 serve to clamp the block C firmly to the base B after adjustment, while the slot *c*′ permits the parts to move upon each other during the operation of adjusting them.

In the front face of the block C there is formed a recess C^3, which is open at that end adjacent to the saw, and in this recess there is arranged an arm D. This arm is adjustable longitudinally within the recess, and for effecting this adjustment I employ a bolt D′, secured to the arm D and extending through the wall c^3 of the recess C. Nuts *d* are mounted on the bolt D′ on each side of the wall c^3, and serve, in an obvious manner, to effect the longitudinal adjustment of the arm D.

In order to clamp the arm in position after adjustment, there is formed in the said arm a slot d', and a bolt D^2, mounted in the block C, extends through this slot and is provided with a clamping-nut d^2 and washer d^3, by means of which the said arm may be clamped firmly in position after adjustment.

The arm D tapers slightly from its inner to its outer end, as shown in Fig. 6 of the drawings, and its outer end is vertically adjustable to vary its angle with relation to the block C by means of adjusting-screws D^3, which bear upon the same at top and bottom. At the outer end of said arm there is formed on the front face thereof a way d^4, upon which the inner cheek-piece E of the guide is mounted. This cheek-piece is adjustable upon this way, being provided with an adjusting-bolt e, which passes through a lug d^5 on the arm D, and is provided with adjusting-nuts e' on each side of said lug, as clearly shown in Figs. 3 and 5 of the drawings.

At its outer end the arm D is provided with a hemispherical socket D^4, and the outer cheek-piece E′ is provided with a corresponding hemispherical boss E^2, which fits within said socket. The boss E^2 is apertured at its crown, as shown at e^2, and a bolt E^3, mounted in the arm D, extends outward through the said aperture, which is of considerably greater diameter than said bolt. The boss E^2 is hollow, and in the hemispherical socket formed by this hollow in the face of the boss there is arranged a washer E^4, fitting snugly on the bolt and having a hemispherical inner face to fit the outer face of the boss. The outer face of this washer is flat, and a clamping-nut e^3, mounted on the bolt E^3 outside of the washer, serves to secure the several parts together. It will be seen that the construction just described forms a species of universal or ball-and-socket joint, by means of which the outer cheek-piece is connected to the arm D.

The features of construction just described are common to both the top and bottom guide. The guides differ, however, in the construction of the cheek-pieces and in the location of the saw-supporting roller. In the top guide these parts are constructed and arranged as follows: Each of the cheek-pieces E and E′ is provided with a downward extension e^4, and a facing E^5, of vulcanized fiber or other suitable material, is mounted on the inner face of each cheek-piece. This facing is preferably extended along that portion of the inner face adjacent to the front and top edge thereof, as shown in dotted lines in Fig. 4, the facing being omitted from the remaining surface. The saw-supporting roller is mounted in the following manner: The arm D is provided at the bottom of its outer end with a way f, extending from front to rear, and in this way is mounted the roller-support F, which is adjustable longitudinally thereon. This support is provided with a longitudinal slot f', and a bolt F′, mounted in the arm D, extends downward through said slot, and is provided on its projecting end with a clamping-nut f^2, by means of which the support may be clamped in position on the way after adjustment. The support is provided with a forwardly-extending lateral arm F^2, and on this arm the roller F^3 is mounted by means of a bolt f^3, which forms the axis of the said roller.

The supporting-roller of the bottom guide is mounted in the same manner as is the roller of the top guide, its location being, however, different. As shown in the drawings, the roller of the bottom guide is mounted above the arm and cheek-pieces, the way f being formed on the top of the end of the arm D, instead of on the bottom. The cheek-pieces E and E′ of the bottom guide are provided with an upward extension e^5, in place of the downward extension e^4 of the top guide cheek-pieces. The facing E^5 of these cheek-pieces extends upward along the front edge of each cheek-piece and then rearward along the top edge of each extension e^5, where it terminates. It begins again at the bottom of the extension e^5 and extends rearward, as shown, almost, but not quite, to the line of the roller. By reason of this construction there is a space left at the point e^6, where the inner faces of the cheek-pieces are not provided with a facing, and where, consequently, there is a clear space between the face of the saw and the faces of the cheek-pieces, thus forming an aperture, the purpose of which will be hereinafter pointed out. The cheek-pieces of the bottom guide are also provided with dust-chutes G, which, beginning at the rear upper corner of the extensions e^5, extend forward and downward, and at the same time expand laterally, as shown in Fig. 9, terminating at the front of the guide.

H represents a guard or shield pivoted on the arm A^2, and capable of being swung down into the position shown in Fig. 1 of the drawings to cover and protect the lower guide.

I represents the band-saw, which passes down between the cheek-pieces of the guides in the usual manner.

The operation of the guides is as follows: The band-saw being properly strained between the upper and lower wheels, and the upper arm A^2 being adjusted to the desired height, the base B may be adjusted to the front or rear, in order to bring the guides as a whole into proper relative position with the saw. The adjustment of the block C upon the base B adjusts simultaneously the angle of both cheek-pieces of the guide, so that the said cheek-pieces will be in proper parallelism with the saw-blade so far as the lines extending from front to rear in a horizontal plane are concerned. Both cheek-pieces may be simultaneously adjusted in and out by adjusting the arm D in and out upon the block C, and their parallelism with the saw, so far as the vertical lines are concerned, is obtained by tilting the said arm D up or down, as desired, by means of the screws D^3.

The outer cheek-piece E′ may of course be brought into a position of absolute parallelism to the inner cheek-piece through the medium of the ball-and-socket joint, which connects it to the arm D, this adjustment being independent of the adjustment of the cheek-piece E. Moreover, the distance between the cheek-pieces may be varied as desired by adjusting the inner cheek-piece E in or out upon the arm D through the medium of the mechanism provided for that purpose. The supporting-roller may also be adjusted up to its proper position to accommodate saws of different widths, while the adjustment of the cheek-pieces toward and from each other will accommodate saws of different thicknesses. It will thus be seen that by means of the various adjustments hereinbefore referred to the cheek-pieces may be brought into such a position with relation to the saw as to accomplish their work with the highest efficiency. The facing E^5 prevents, of course, the contact of the saw with the metal of which the cheek-pieces are composed. The arrangement of the facing on the lower guide, by which an aperture is left at e^6, provides a clearance-space at this point, through which the sawdust which may adhere to the saw can pass down and out. The chutes G, however, dispose of the greater portion of this dust, collecting the same from the saw and carrying it forward clear of the guide, thereby preventing clogging of the parts.

It is obvious that various modifications in the details of construction and arrangement of the parts may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself strictly to the precise details hereinbefore described, and shown in the drawings.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1: In a band-saw guide, the combination, with the supporting-arm and the inner cheek-piece mounted thereon, said supporting-arm being provided with a hemispherical socket at its outer end, of the outer cheek-piece provided with a corresponding hemispherical boss to fit said socket, and the bolt connecting the two, substantially as and for the purposes specified.

2. In a band-saw guide, the combination, with the supporting-arm D and the inner cheek-piece E, mounted thereon, said arm being provided with the hemispherical socket D^4, of the outer cheek-piece E′, provided with a hollow hemispherical boss E^2 to fit the socket D^4, said boss having an enlarged aperture e^2, the bolt E^3, passing through said aperture, the washer E^4, having a hemispherical inner surface to fit the boss, and the clamping-nut e^3, substantially as and for the purposes specified.

3. In a band-saw guide, the combination, with the arm D and the outer cheek-piece E′, connected to said arm by a ball-and-socket joint, of the inner cheek-piece E, mounted in suitable ways on the said arm and adjustable toward and from the outer cheek-piece, substantially as and for the purposes specified.

4. In a band-saw guide, the combination, with a suitable supporting base or block provided with a recess open at its end, of the supporting-arm D, arranged in said recess, carrying the cheek-pieces and tapering gradually from rear to front, and adjusting-screws bearing on said arm at the front of the recess at top and bottom to tilt the same, substantially as and for the purposes specified.

5. In a band-saw guide, the combination, with the base B, of the block C, mounted thereon and adjustable to various angles with relation thereto on a curve, the center of which is about coincident with the front line of the saw-teeth, and the cheek-pieces and their supporting-arm connected to said block, substantially as and for the purposes specified.

6. In a band-saw guide, the combination, with the base B, provided with the curved diagonal rib b', of the block C, provided with a corresponding groove c, adjusting and clamping screws connecting the block and base, and the cheek-pieces and their supporting-arm connected to the block, substantially as and for the purposes specified.

7. In a band-saw guide, the combination, with the base B, of the block C, adjustable angularly thereon on a curve, the center of which is about coincident with the front line of the saw-teeth, and the arm D, carrying the cheek-pieces, mounted on the block C and adjustable in and out with relation to said block, and suitable adjusting and clamping screws for moving and securing said arm, substantially as and for the purposes specified.

8. In a band-saw guide, the combination, with the cheek-pieces independently adjustable with relation to each other, of supporting devices for said cheek-pieces, substantially such as described, whereby both cheek-pieces may be simultaneously adjusted on the guide-arm and independently of any movement of said arm to various angles both vertically and horizontally with reference to the plane of the saw, and also in and out and forward and back with reference to the saw, substantially as and for the purposes specified.

9. In a band-saw guide, the combination, with the lower guide cheek-pieces, of the dust-chutes G, arranged on the cheek-pieces of the lower guide and extending from their rear upper corner forward and downward, substantially as and for the purposes specified.

DE WITT CLINTON PRESCOTT.

Witnesses:
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W. P. MARS.