

No. 683,373.

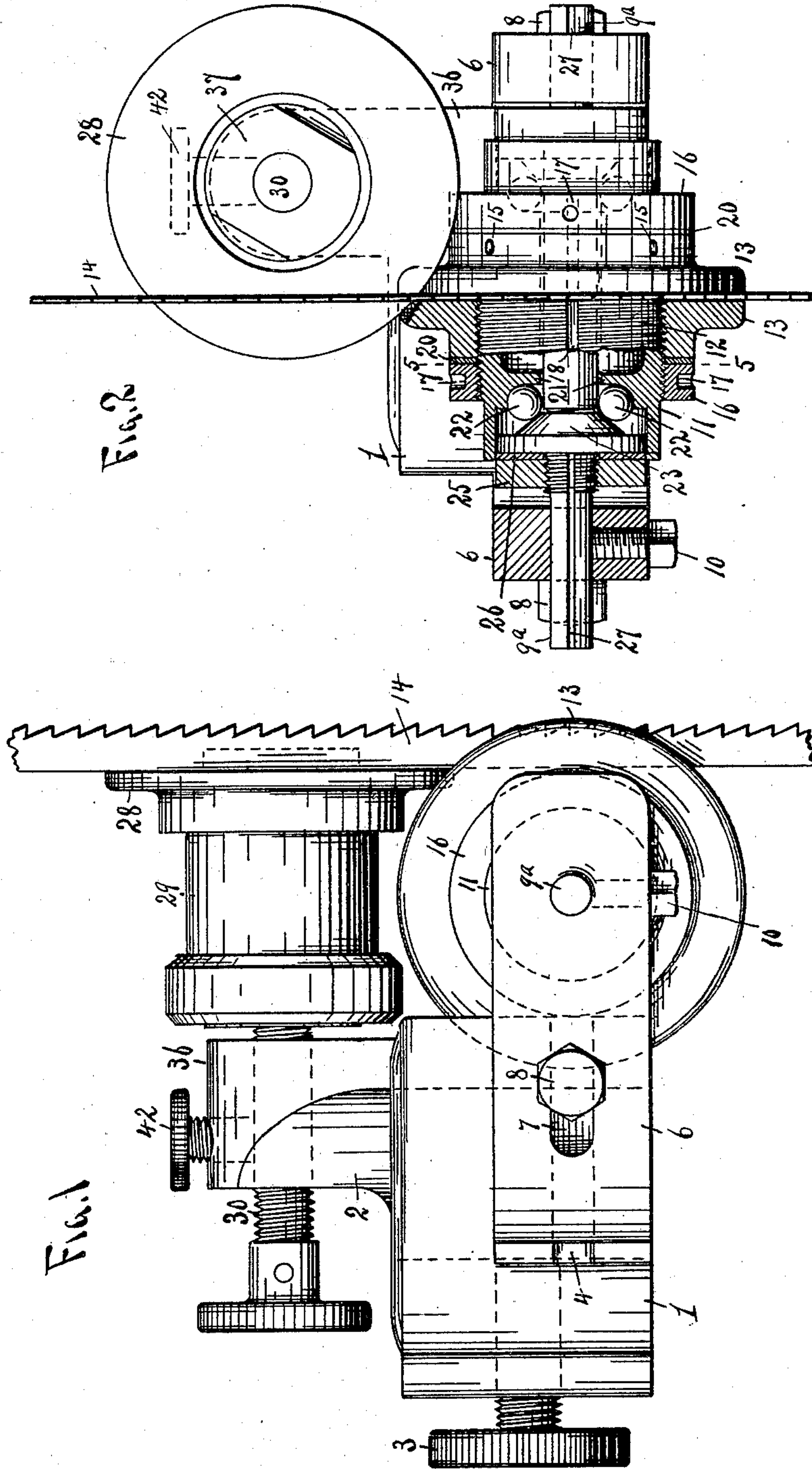
Patented Sept. 24, 1901.

W. E. ALLEN.  
BAND SAW GUIDE.

(Application filed July 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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H. J. Riley.

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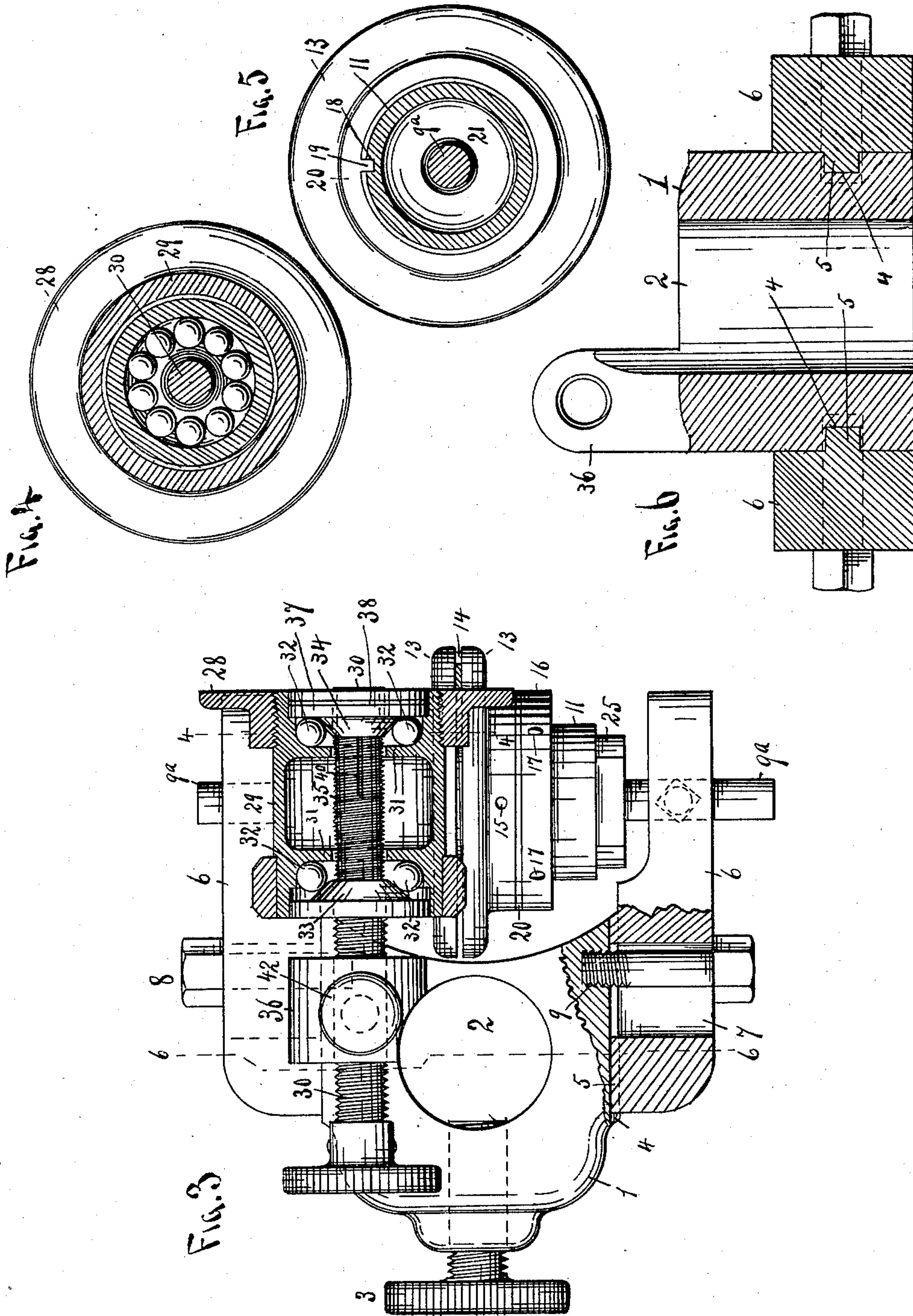
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# UNITED STATES PATENT OFFICE.

WILLIAM EARL ALLEN, OF MADISON, WISCONSIN.

## BAND-SAW GUIDE.

SPECIFICATION forming part of Letters Patent No. 683,373, dated September 24, 1901.

Application filed July 11, 1901. Serial No. 67,925. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM EARL ALLEN, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Band-Saw Guide, of which the following is a specification.

The invention relates to improvements in band-saw guides.

One object of the present invention is to improve the construction of band-saw guides and to provide a simple and comparatively inexpensive one designed for use on band-saws for woodworking and adapted to permit a saw-blade to pass through it freely without friction and capable of preventing lateral or side play, whereby the blade is held perfectly true.

A further object of the invention is to provide a band-saw guide of this character which will be capable of adjustment to accommodate saws of different sizes and which will support a saw at the back of the blade and afford a great amount of bearing-surface, whereby the breakage of blades will be reduced to a minimum.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation of a band-saw guide constructed in accordance with this invention. Fig. 2 is a transverse sectional view, partly in elevation. Fig. 3 is a plan view, partly in section. Fig. 4 is a sectional view on the line 4 4 of Fig. 3. Fig. 5 is a similar view on the line 5 5 of Fig. 2. Fig. 6 is a sectional view on the line 6 6 of Fig. 3.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a plate or frame having an opening 2 for the reception of a rod or support and provided at its back with a threaded horizontal opening intersecting the vertical opening 2 and receiving a set-screw 3 for engaging the rod or support for securing the band-saw guide at the desired adjustment. The plate or frame is provided at opposite sides with horizontal grooves 4, receiving lon-

gitudinal ribs 5 of adjustable arms 6, located at opposite sides of the plate 1 and arranged horizontally. The arms 6 are provided at their inner portions with horizontal slots 7 and are secured to the plate 1 by means of clamping-screws 8, passing through the slots and engaging threaded sockets 9 of the plate or body, as clearly illustrated in Fig. 3 of the accompanying drawings. The clamping-screws are provided at their outer ends with heads which are adapted to be engaged by a wrench. The outer portions of the arms are provided with bearing-openings for the reception of a transverse shaft 9<sup>a</sup>, which is adjustably secured in the bearing-openings by means of a clamping-screw 10, mounted in a threaded opening of one of the arms and located beneath the shaft, as clearly illustrated in Fig. 2 of the accompanying drawings. The shaft 9<sup>a</sup> supports a rotary cylinder 11, which is provided with centrally-arranged exterior screw-threads 12, extending from the center of the cylinder to within a short distance of the ends of the same and receiving a pair of guide-disks 13, located at opposite sides of and spaced apart to receive a band-saw blade 14, as clearly illustrated in Fig. 2 of the drawings. The guide-disks, which are provided with projecting hub portions, are interiorly threaded to engage the screw-threads of the rotary cylinder, and they are adapted to be turned thereon to move them toward and from each other to vary the distance between them to suit the thickness of the saw-blade. The hub extensions of the disk are provided with suitable sockets 15, adapted to be engaged by a spanner or other tool for adjusting the guide-disks. The guide-disks are secured at the desired adjustment by means of interiorly-threaded rings or nuts 16, provided with sockets 17, similar to the sockets 15, and adapted to be rotated to clamp the guide-disks at the desired adjustment. The rotary cylinder is provided at the threaded portion with a longitudinal groove 18, adapted to receive tongues or projections 19 of washers 20, which are interposed between the nuts and the guide-disks and which prevent any rotation of the guide-disks when the nuts or rings are screwed tightly against the same.

The rotary cylinder is provided at its inte-



rior, near each end, with an annular flange 21, having an annular groove, forming a ball-race and receiving an annular series of anti-friction-balls 22, which are interposed between the cylinder and a cone 23, which is mounted on the adjacent threaded portion of the shaft 9<sup>a</sup> and which is interiorly threaded to engage such threaded portion. The cylinder is supported by the antifriction-balls and is adapted to rotate freely, whereby the saw-blade is supported frictionlessly. The cone 23 is locked at the proper adjustment by means of nuts 25, arranged on the threaded portions of the shaft. In order to prevent the cones from being rotated when the nuts are screwed up tightly against them, washers 26 are provided, and these washers, which are interposed between the cones and the nuts, are provided with projections or tongues, which engage a longitudinal groove 27 of the shaft 9<sup>a</sup>.

The rear edge of the saw-blade is supported by a transversely-disposed guide-disk 28, mounted on a rotary cylinder 29 and rigidly secured to the same, preferably by means of threading the parts; but any other means may be employed for this purpose. The cylinder 29, which is adjustably mounted by a screw 30, is constructed substantially the same as the rotary cylinder heretofore described. It is provided with interior annular flanges 31, arranged near its ends and provided with grooves forming annular ball-races for the reception of antifriction-balls 32, which fit against cones 33 and 34. The cones 33 and 34 are threaded to engage screw-threads 35 of the front portion of the screw, and the inner cone fits against a shoulder formed by reducing the screw near its center. The inner or rear portion of the screw is provided with coarse screw-threads for engaging corresponding threads of an upwardly-extending arm 36 of the plate 1. The outer cone 34 is adjustable to take up any wear of the parts, and it is locked in its adjustment by means of a nut 37 and a washer 38, which is interposed between the nut and the cone and which is provided with a tongue or projection for engaging a groove 40 of the screw 30. The washer, which is locked against rotation by means of the tongue or projection, operates similar to those heretofore described and prevents the cone from being rotated by the nut. The upwardly-extending arm 36 is formed integral with the plate or frame 1, and it is interiorly threaded to receive the screw 30 and has a threaded perforation intersecting the threaded opening for the screw 30 and receiving a clamping-screw 42, arranged at the top of the arm and adapted to engage the said screw 30 to hold the same against accidental rotation. The rear edge of the saw-blade bears against the face of the transversely-disposed guide-disk, and the side faces of the saw-blade are supported by the other guide-disks, and a large amount of bearing-surface is thus provided for supporting the saw-blade. The guide-disks are adapt-

ed to rotate frictionlessly, and they are of the same diameter and rotate at the same speed, and the breakage of saw-blades is reduced to a minimum. The parallel guide-disks, which are mounted on the transversely-disposed cylinder, are capable of adjustment to vary the distance between them to accommodate saw-blades of different thicknesses and to set them properly with relation to such blades, and the longitudinally-disposed cylinder, which carries the transverse guide-disk, is adapted to be moved backward and forward by adjusting the screw 30. This latter adjustment enables the guide to support both wide and narrow blades. The parallel guide-disks are also capable of adjustment longitudinally of the guide by means of the adjustable connection between the arms and the plate 1.

The transversely-disposed guide-disk 28 may be mounted above the parallel guide-disks 13, as illustrated in the accompanying drawings, but the saw-guide will operate equally as well and be equally as effective with the transverse guide-disk below the parallel guide-disks, and I desire it to be understood that various changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. A band-saw guide comprising a plate having a vertically-disposed arm and provided at opposite sides with grooves, the horizontal arms provided with slots and having ribs arranged in the said grooves, fastening devices passing through the slots and adjustably securing the arms to the plate, a transverse shaft supported by the arms, the parallel guide-disks mounted on the transverse shaft, the longitudinal screw mounted on the upwardly-extending arm, and the transverse guide-disk supported by the screw, substantially as described.

2. In a band-saw guide, the combination of a frame, a transverse shaft provided with opposite threaded portions, the rotary cylinder arranged on the shaft and having exterior screw-threads, the interiorly-threaded parallel guide-disks adjustably mounted on the threads of the cylinder, the locking nuts or rings also mounted on the threaded portion of the cylinder, the washers interlocked with the cylinder and interposed between the guide-disks and the nuts or rings, the cones adjustably mounted on the threaded portions of the shaft and arranged at the ends of the cylinder and extending into the same, the antifriction-balls interposed between the cones and the cylinder, the nuts mounted on the threaded portions of the shaft, and the washers interlocked with the shaft and interposed between the cones and the nuts, substantially as described.

3. In a band-saw guide, the combination of



a frame, and a vertically-disposed arm, a transverse shaft, the parallel guide-disks mounted on the shaft, the longitudinal screw disposed horizontally and provided with inner and outer threaded portions, the outer threaded portion engaging the upwardly-extending arm, the inner and outer cones provided with interior screw-threads and mounted on the outer threaded portion of the screw, the rotary cylinder provided with interior flanges having grooves and located opposite the cones, the antifriction-balls interposed between the cones and the flanges and arranged in the said grooves, means for locking the outer cone in its adjusted position, and a transversely-disposed guide-disk mounted on the said cylinder, substantially as described.

4. In a band-saw guide, the combination of a frame, a transverse shaft, a rotary cylinder provided within its ends with ball-races, cones mounted on the shaft and located within the ends of the cylinder, balls arranged within the said races, the interiorly-threaded parallel guide-disks mounted on the cylinder and engaging exterior threads of the same, and means for locking the disks in their adjusted position, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM EARL ALLEN.

Witnesses:

JULIA A. MUELLER,  
R. M. LAMP.