(No Model.)

J. W. OLIVER.

DADO HEAD.

No. 476,677. Patented June 7, 1892.

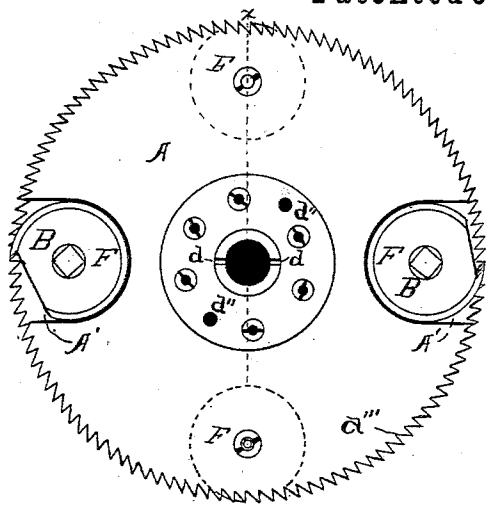


Fig. 1.

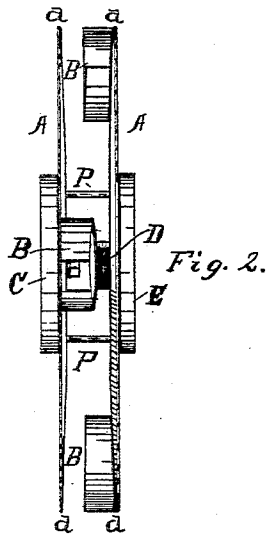


Fig. 2.

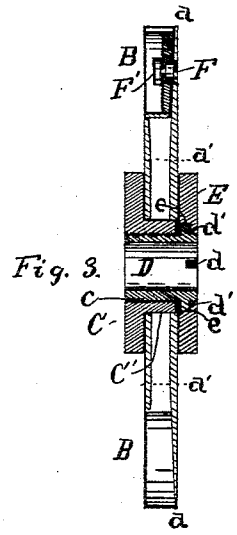


Fig. 3.

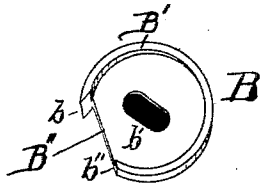


Fig. 4.

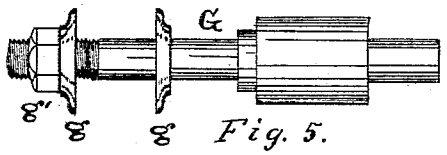
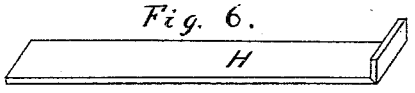


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH W. OLIVER, OF GRAND RAPIDS, MICHIGAN.

DADO-HEAD.

SPECIFICATION forming part of Letters Patent No. 476,677, dated June 7, 1892.

Application filed May 28, 1891. Serial No. 394,422. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. OLIVER, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Dado-Heads, of which the following is a specification.

The objects of my invention are, first, to insure a perfectly-smooth cut both at the sides and bottom of the dado; second, to afford a ready means of adjusting the width of the dado, and, third, to avert the danger of springing the saws or side cutters out of position by the centrifugal force of the cutters. I attain these results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan of my dado-head. Fig. 2 is an edge view of the same extended. Fig. 3 is a vertical section of the same on the line *x* of Fig. 1. Fig. 4 is a perspective of a cutter. Fig. 5 is an arbor for the support of the dado-head, and Fig. 6 is a wrench for adjusting the head.

Similar letters refer to similar parts throughout the several views.

In constructing my dado-head I make use of two supports A A, which are made heavy in the center between the points a' a', from which line they gradually taper to a thin edge at a and are provided with saw-teeth a''' for cutting the sides of the dado, and a portion of each saw, directly opposite each cutter B, that is secured to the opposite saw or support, is cut away, as at A′, sufficiently to allow the cutters to pass through, so that the surface of the cutters may be brought to the same plane of the outer surface of the supports, as shown in Fig. 3. To one of the supports I attach a collar C by means of screws or other similar devices, which is provided with an annular projection C′, which projects some distance beyond the inner surface of the saw, and is provided upon the inner periphery with a screw-thread *c*, arranged to mesh with a similar screw-thread on the outer periphery of the annular bolt D. I also provide the bolt D with a projection *d*′, which is made to work freely in a groove *e*, formed between the outer surface of the saw and the collar E, so that it may be easily turned, the outer end of the bolt being on the plane of the outer surface of the collar and is provided with slots *d d*, with which to turn the bolt by means of a screw-driver or wrench H, made for the purpose. This bolt is annular, having an aperture through it lengthwise of a proper size to fit upon the saw or dado arbor G.

For cutting the bottoms of the dado I provide two or more cutter-heads or circular knives B, which I attach to each support by means of bolts F F′, so they may be turned to place the cutting-edges in the proper position. These cutters are made with the bases B″, a projecting rim B′, having a cutting-edge *b* upon one end, and an aperture *b*′ through the base for the passage of the bolt F. It is well to make this aperture oblong, so that the position of the edges may be varied to meet the wear of the saws. When the bevel-saws are used, it is better to make the end *b*″ of the rim narrower than its end *b* and upon a gradual incline, so that the outer surface of the cutters will stand parallel with the outer surface of the saws, as shown in Fig. 2, though when the saws are of uniform thickness from center to circumference this is not necessary.

I provide for holding the saws in their proper relative positions by securing pins P solidly into one saw and arrange apertures *d*″ through the other in proper positions and of proper sizes to receive the pins and allow them to pass through freely, so that the width of the dado may be varied and yet one saw cannot turn upon the arbor independent of the other.

The saws are secured together by screwing the annular bolt D into the projection C′ on the collar C, and to increase or diminish the width of the dado I insert the wrench H into the slots *d* in the ends of the bolt and turn it the proper direction until the desired width is attained.

The head is secured upon the mandrel G between the collars *g g* by means of the nut *g*′, in the usual manner of securing saws and sticker-heads upon their mandrels.

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

1. In a dado-head, the combination, with circular supports having teeth upon their peripheries, of knives secured to the inner surfaces of the supports in position, so that their edges may stand upon the peripheral circle of the supports, collars attached to the centers of the supports, one of said collars having a flange that projects beyond the inner surfaces of the support and is provided with screw-threads upon the inner surface, an annular bolt having screw-threads upon its outer surface to mesh with the screw-threads in the flange C′ and the collar C, said annular bolt being provided with an outwardly-projecting flange near one end, the other collar attached to the outer surface of the other support and provided with a groove for the reception of the flange *d′* on the bolt, and pins and holes for holding the supports to position, substantially as set forth.

2. In combination, a dado-head having circular supports heavy at their centers and tapering upon their inner surfaces to a thin edge, openings A′ at their edges and a series of saw-teeth upon their peripheries, circular cutters gradually tapering from their edges back to meet the taper of the supports, a collar attached to one support and provided with an inwardly-projecting annular flange having a screw-thread upon its inner surface, an annular bolt having a screw-thread and a flange upon its outer surface, and a collar provided with a groove *e* upon its inner surface for the reception of the flange *d′* on the bolt and secured to the other support, substantially as and for the purpose set forth.

3. The combination, in a dado-head, of circular supports having saw-teeth around their peripheries, collars and central screws for adjusting the supports, with circular knives, each having a thin base and an annular flange standing at right angles with the base and cut away at one side to form the cutting-edge, a slot through the base, bolts provided with nuts having conical heads and bodies that project through the support and nearly through the knives, and pins and apertures in the support, substantially as specified.

4. The combination, with a dado-head, of two adjustable supports, a collar solidly attached to one of said supports, said collar provided with an annular hub having a screw-thread therethrough to form a nut, an annular bolt provided on its outer surface with a screw-thread to mesh in the aforesaid nut and an outwardly-projecting bearing and a notch in the end, and a second collar secured to the other support and provided with an offset to form a groove between the collar and the side of the dado-head around the aperture therethrough for the reception and free action of the projection on the bolt, all arranged to form an adjusting-screw for the head, substantially as and for the purpose set forth.

JOSEPH W. OLIVER.

In presence of—
ITHIEL J. CILLEY,
E. MCWHINNEY.