Oct. 4, 1932. J. BATH 1,880,673

WORKTABLE FOR GRINDING MACHINES

Original Filed Dec. 29, 1924

Fig. 1.

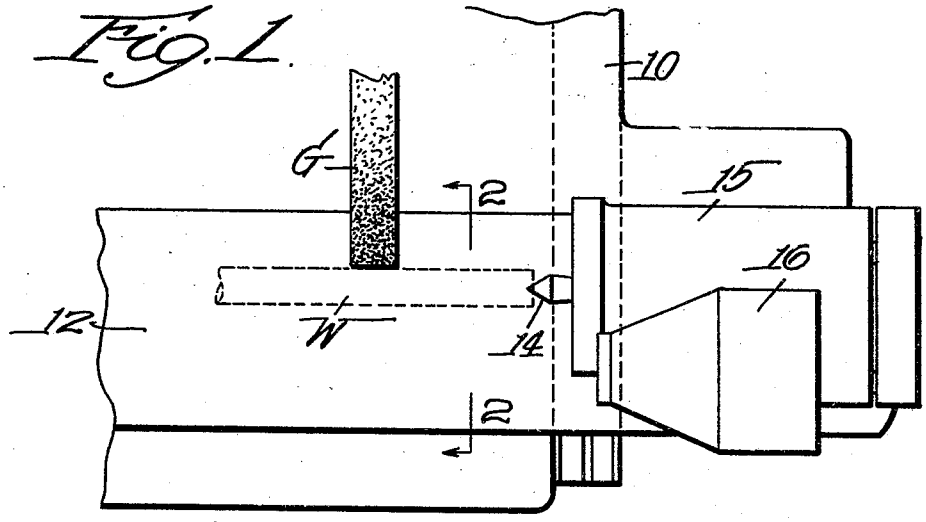
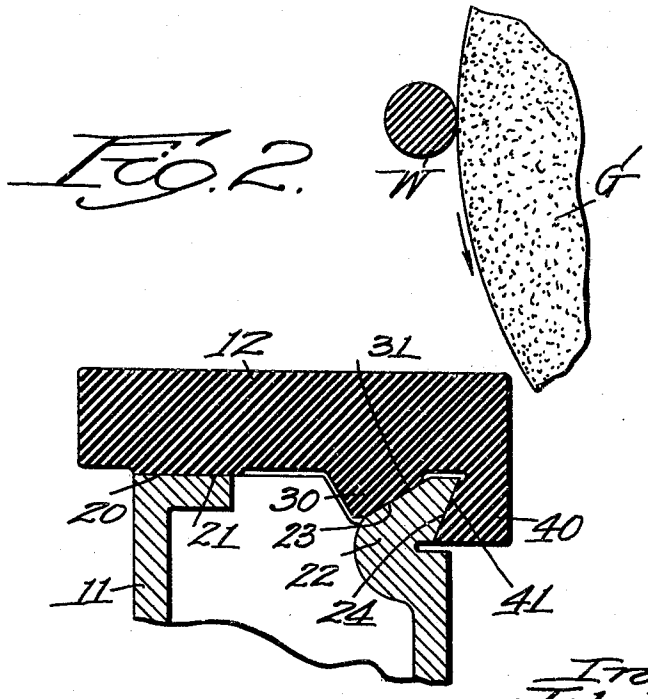


Fig. 2.



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UNITED STATES PATENT OFFICE

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WORKTABLE FOR GRINDING MACHINES

Original application filed December 29, 1924, Serial No. 758,559. Divided and this application filed February 27, 1930. Serial No. 431,949.

This application is a division of my prior application Serial No. 758,559, Patent No. 1,771,948 dated Feb. 5, 1930 filed December 29, 1924 and relates to certain features in the construction of the sliding work table shown in said prior application.

It is the object of my invention to provide a work table and other similar sliding structure with guideways so designed that the table will be firmly held against the thrust of the wheel or against other forces tending to lift the table from its supports.

A further object of the invention is to provide a construction in which the use of clamps, gibs or other retaining devices is rendered unnecessary.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which

Fig. 1 is a partial plan view of a grinding machine embodying my improvements; and

Fig. 2 is a sectional end elevation, taken along the line 2—2 in Fig. 1.

Referring to the drawing, I have shown a base or frame 10 of a grinding machine having a supporting structure 11 on which a work table 12 is slidably mounted. The work W may be supported in any usual manner on the table 12, as by a center 14 in a work driving head 15 provided with a motor 16. The work W is engaged by the periphery of a grinding wheel G, suitably supported on the frame 10 and rotated at high speed by driving mechanism not shown.

The table 12 is provided near its front lower edge with a flat finished surface 20, engaging a corresponding surface 21 of the supporting structure 11. The structure 11 is also provided with a rear guiding portion 22 having converging upwardly and rearwardly inclined bearing surfaces 23 and 24, the surface 24 being substantially undercut.

The table 12 is provided with a V-shaped downwardly extending projection 30 having a surface 31 engaging the surface 23 of the supporting guideway 22, and the table 12 is also provided with a downwardly extending offset rear portion 40 having a bearing surface 41 engaging the undercut surface 24.

It will be evident that the table 12 may be placed on its supporting structure by a simple downward and forward movement and that the table is thereafter firmly supported for free sliding movement. The thrust of the heel G against the work W produces a force tending to move the work forward and to swing the table 12 upward and forward about the front edge of the front bearing surface 20 as a pivot.

Any such forward or upward swinging movement is effectively resisted by the undercut guiding surface 24, which prevents any lifting of the table 12 unless accompanied by a corresponding rearward movement of the table in the direction predetermined by the undercut surface 24. Any such rearward movement would force the work W into closer engagement with the wheel G, and no such rearward movement can be produced by the forward thrust of the wheel G.

While lifting movement of the table is prevented by the undercut surface 24, downward movement of the rear portion of the table is equally prevented by the portion 23 of the guideway 22 and the table is thus maintained accurately in the desired plane of operation.

I am able to omit all gibs, clamps or other similar devices heretofore used for preventing lifting of the table, and I am able to use a table which may be placed on its support or removed therefrom with the least possible effort and without releasing or removing any attaching parts.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. In a machine tool, a sliding table and a support therefor, said support having a front bearing surface adapted to resist downward pressure thereon, and having a rear guiding member adapted to resist upward and forward pressure thereon, said rear guiding member having front upper and rear lower guiding surfaces, with the front upper bear-

ing surface inclined upwardly and rearwardly and with the rear lower bearing surface undercut and inclined upwardly and rearwardly, said front upper and rear lower bearing surfaces also converging upwardly and rearwardly, and said table having three rigid guiding portions maintained in fixed relation and directly engaging the three defined bearing surfaces of said support.

2. In a machine tool, a sliding table and a support therefor, said support having a front bearing surface adapted to resist downward pressure thereon, and having a rear guiding member adapted to resist upward and forward pressure thereon, said rear guiding member having front upper and rear lower guiding surfaces, with the front upper bearing surface inclined upwardly and rearwardly and with the rear lower bearing surface undercut and inclined upwardly and rearwardly, said front upper and rear lower bearing surfaces also converging upwardly and rearwardly, and said table having three integral rigid guiding portions directly engaging the three defined surfaces of said support.

In testimony whereof I have hereunto affixed my signature.

JOHN BATH.