H. W. MELLING.

WORK HOLDER.

APPLICATION FILED MAY 29, 1920.

1,384,079.

Patented July 12, 1921.

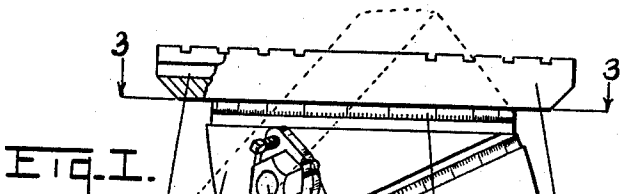


Fig. I.

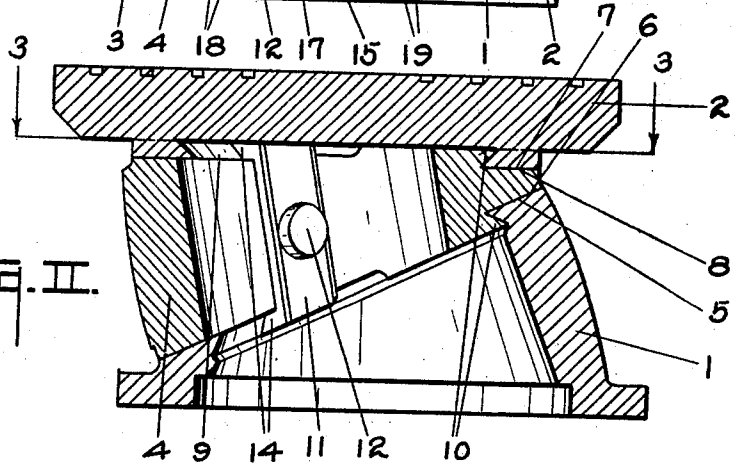


Fig. II.

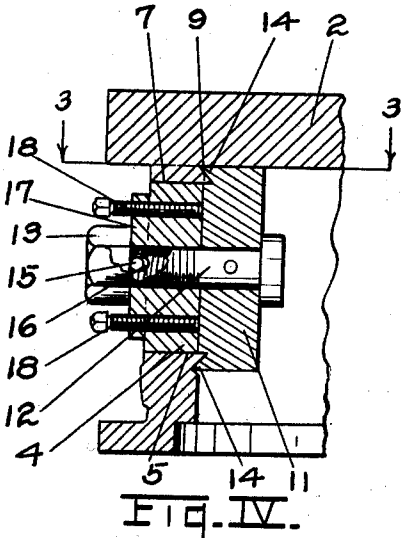


Fig. IV.

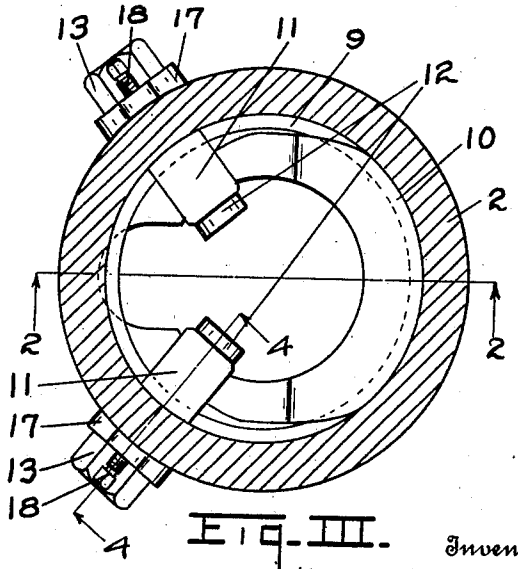


Fig. III.

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WORK-HOLDER.

1,384,079. Specification of Letters Patent. Patented July 12, 1921.

Application filed May 29, 1920. Serial No. 385,308.

To all whom it may concern:

Be it known that I, HERMAN W. MELLING, a citizen of the United States, residing at Jackson, county of Jackson, State of Michigan, have invented certain new and useful Improvements in Work-Holders, of which the following is a specification.

This invention relates to improvements in work holders.

The main objects of this invention are:

First, to provide an improved work-holder for lathes and the like which may be readily adjusted to support the work in the desired position.

Second, to provide an improved work holder or support of the class described which is very secure and rigid when adjusted and may be made in large sizes for the support of heavy work and at the same time is easily and quickly adjusted.

Further objects, and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which—

Figure I is a side view of my improved work holder shown in full lines with the bed in horizontal position and by dotted lines adjusted to an angular or inclined position, a portion of the top or bed member being broken away to show details.

Fig. II is a vertical central section on a line corresponding to line 2—2 of Fig. III.

Fig. III is a horizontal section on a line corresponding to line 3—3 of Figs. I, II and IV.

Fig. IV is a vertical section on a line corresponding to line 4—4 of Fig. III, parts being broken away to show structural details.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I provide a base member 1 adapted to be mounted on the carriage of a lathe or like machine, a top member or bed member 2 adapted to receive the work and provided with grooves 3 for the work clamping bolts, and an intermediate member 4. The intermediate member is rotatably mounted on the base and the top member is rotatably mounted on the intermediate member.

The base has an annular bearing face 5 on its upper end while the intermediate member has a coacting annular bearing face 6. These bearing faces of the base and intermediate member are oblique or inclined to the axis of rotation of the intermediate member. The top member has an annular bearing face 7 on its under side while the bottom member has a coacting bearing face 8.

The inner edges of the bearing faces of the top and bottom members are inwardly beveled to provide internal bearing members 9 with which the bearing segments 10 of the intermediate member coact. The clamping members 11 are mounted on the inner side of the intermediate member 4, the clamping bolts 12 being arranged through the intermediate member to receive the clamping nuts 13 on the outer ends thereof.

The clamping yokes have beveled engaging lugs 14 which coact with the internal beveled bearing surfaces 9 so that when the clamping members are drawn up, the support members are drawn together clamping them in their adjusted position. The bolts 12 carry pins 15 engaging slots 16 in the bosses 17 to limit the releasing movement of the parts so that while they may be freely adjusted when the nuts are released, they do not fall out or allow too much play between the parts when loosened. To facilitate adjustment, I provide stop screws 18 which are arranged through the member 4 to engage the clamping members near the ends thereof. The support members are provided with a scale 19 having suitable indicia thereon to indicate angles, which may be simple or compound relative to the tool, that is, the table may be adjusted so that the work thereon may be tilted to the desired angle.

In adjusting, the clamping bolt 12 may be loosened and the intermediate member, for instance, adjusted to the desired position. The bottom stop screw is then adjusted to inoperative position and the top stop screw adjusted to prevent clamping engagement of the clamping member with the top member. The clamps are then tightened to hold the intermediate member in its adjusted posi-

tion while the top member is being adjusted. The top stop screws are then released and the clamping members adjusted to clamp the top in its adjusted position.

My improved support is comparatively economical in structure as the bearing surfaces are such that they may be readily machined. The members are quickly adjusted to secure the desired angle and the clamps are very rigidly retained in their adjusted position.

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

1. In a structure of the class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting annular flat bearing faces, the coacting bearing faces of said base and intermediate members being inclined to their axes of rotation, the inner edges of the bearing faces of the top and bottom members being inwardly beveled, and the intermediate member being provided with coacting beveled bearing segments, clamping members mounted on said intermediate member opposite to its said bearing segments and provided with beveled clamping lugs coacting with the bevels of said top and bottom member, said clamping members being provided with clamping bolts disposed through said intermediate member, and a pair of stop screws for each clamping member.

2. In a structure of the class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting annular flat bearing faces, the coacting bearing faces of said base and intermediate members being inclined to their axes of rotation, the inner edges of the bearing faces of the top and bottom members being inwardly beveled, and the intermediate member being provided with coacting beveled bearing segments, and clamping members mounted on said intermediate member opposite to its said bearing segments and provided with beveled clamping lugs coacting with the bevels of said top and bottom member, said clamping members being provided with clamping bolts disposed through said intermediate member.

3. In a structure of a class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting flat annular bearing faces, the coacting bearing faces of said base and intermediate member being inclined to their axes of rotation, yoke-like clamping members mounted on said intermediate member and provided with clamping lugs engaging said top and bottom member, said clamping members being provided with clamping bolts disposed through said intermediate member, and a pair of stop screws for each clamping member.

4. In a structure of the class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting flat annular bearing faces, the coacting bearing faces of said base and intermediate member being inclined to their axes of rotation, and yoke-like clamping members mounted on said intermediate member and provided with clamping lugs engaging said top and bottom members, said clamping members being provided with clamping bolts disposed through said intermediate member.

5. In a structure of the class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting flat annular bearing faces, the coacting bearing faces of said base and intermediate members being inclined to their axes of rotation, the inner edges of the bearing faces of the top and bottom members being inwardly beveled, the intermediate member being provided with coacting beveled bearing segments, and a clamping member mounted on said intermediate member to coact with the bevel of a coacting member and provided with a clamping bolt disposed through said intermediate member.

6. In a structure of the class described, the combination of a base, an intermediate member rotatably mounted on said base, a top member rotatably mounted on said intermediate member, said members having coacting flat annular bearing faces and internal bearing portions, the intermediate member being provided with bearing segments coacting with said internal bearing members, and a clamping member mounted on said intermediate member to coact with said internal bearing portions for securing the parts in their adjusted positions.

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

HERMAN W. MELLING.

Witnesses:

MARGARET L. GLASGOW,

LORENA GENEVIEVE SUMMERS.