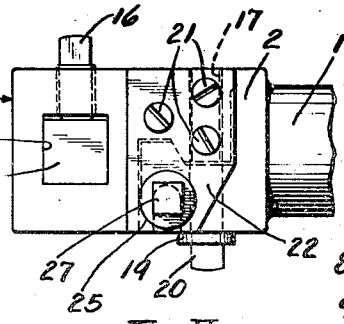
Aug. 14, 1945. O. KYLIN 2,382,571

ADJUSTABLE SUPPORTING TOOL

Filed Jan. 1, 1943

FIG. 1.



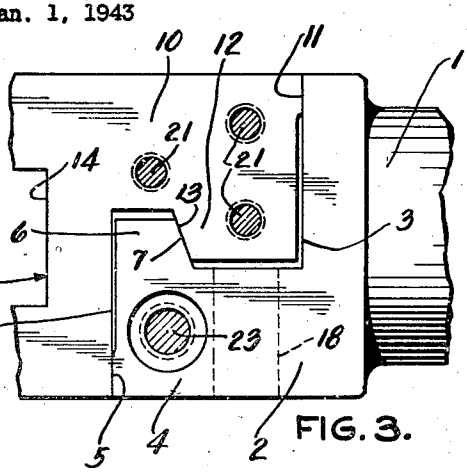


FIG. 3.

FIG. 2.

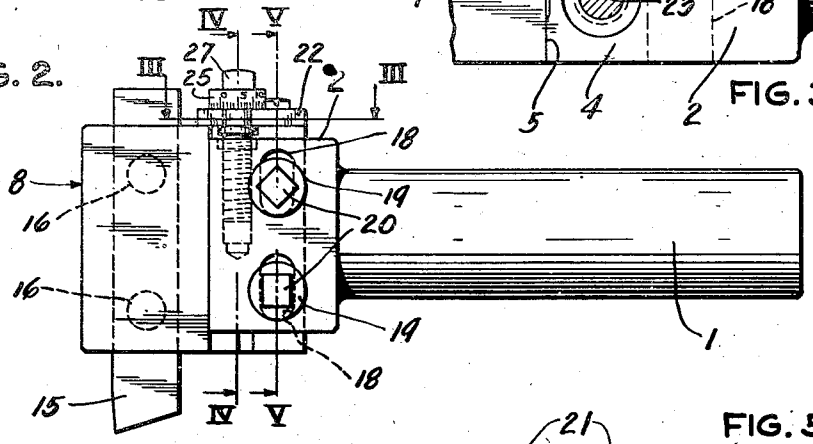


FIG. 5.

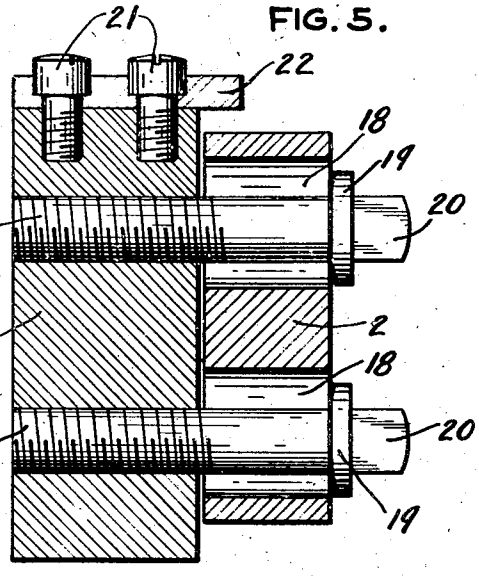
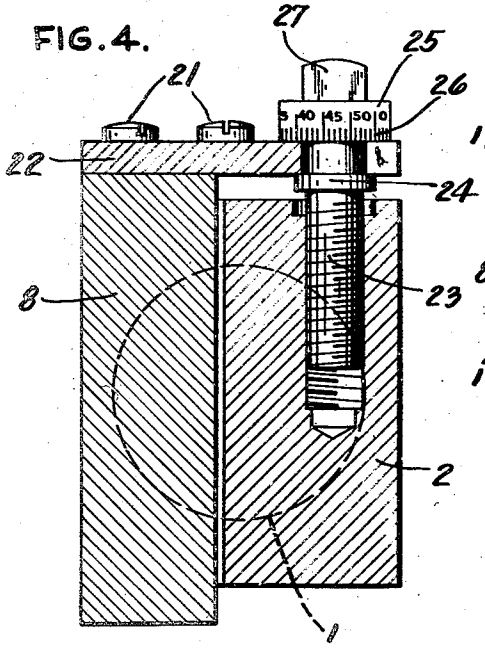


FIG. 4.



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INVENTOR.

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HIS ATTORNEYS

Patented Aug. 14, 1945

2,382,571

UNITED STATES PATENT OFFICE

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ADJUSTABLE SUPPORTING TOOL

Oskar Kylin, Cleveland Heights, Ohio, assignor to Bardons and Oliver, Inc., Cleveland, Ohio, a corporation of Ohio

Application January 1, 1943, Serial No. 470,969

1 Claim. (Cl. 77—58)

This invention relates to supporting structures and is particularly adapted to supporting cutting tools and the like.

An object of the invention is to provide an improved supporting device which will extremely firmly support articles.

Another object of the invention is to provide an improved supporting device in which the position of the articles may be accurately and minutely adjusted.

Another object is to provide an improved supporting device which will be simple and rugged in construction.

Another object is to provide an improved supporting device which may be readily adjusted.

Another object is to provide an improved supporting device which will not be subject to errors due to solid particles finding their way between bearing surfaces thereof.

Another object is to provide an improved supporting device which will be very compact.

Another object is to provide an improved supporting device which may be easily and economically manufactured.

Other objects will hereinafter appear.

The invention will be better understood for the description of one practical embodiment thereof, illustrated in the accompanying drawing, in which—

Figure 1 is a fragmentary elevational view of a boring bar embodying the invention, viewed toward the cutting edge of the cutting tool thereof;

Figure 2 is a plan view of the boring bar of Figure 1; and

Figures 3, 4 and 5 are sectional views taken on the lines III—III, IV—IV and V—V, respectively, of Figure 2.

The bar shown consists of a cylindrical shank 1 having at its end a head 2 which, as best seen in Figure 3, is of substantially J shape, consisting of a transversely extending portion having a plane surface 3 substantially normal to the axis of the shank, an axially extending portion 4 terminating in another plane surface 5 parallel to surface 3, and an inwardly extending projection 6 having an inclined surface 7.

The planes of surfaces 3, 5 and 7 are so arranged that, if extended, their intersections or traces upon each other are on opposite sides of and substantially spaced from the axis of the shank.

Carried by the head is a tool holding block, indicated generally at 8, which is provided with three surfaces adapted to engage the surfaces 3, 5 and 7 above mentioned. The first of these is a plane surface 9 engaging surface 5, beyond which the block is formed with an axially extending portion 10 terminating in a plane surface 11 engaging surface 3, and having a projecting lug 12 provided with an inclined surface 13 engaging surface 7.

It will be observed that the outer ends of the head and of the block are relieved or cut away, so that the areas of the surfaces 5 and 11 which come into contact with the surfaces 9 and 3 are limited and are at the extreme outer part of the device, so that they provide the maximum width of bearing between the head and block, also that the engaging surfaces 7 and 13 are of relatively narrow dimensions. This limiting of the areas of surfaces in contact increases the unit pressures therebetween, expelling fluids, such as oils, grease, and the like, from between them and permitting the holding of the surfaces so tightly together that solid particles have no opportunity to enter therebetween.

The block is provided in its outer portion with a rectangular perforation 14 in which may be inserted a cutting tool 15, held in place by set screws 16.

The head and block are secured together by screws 17 threaded into the latter and passing through elongated slots 18 in the former, the outer ends of the screws being provided with collars 19 and squared ends 20.

Secured upon the upper surface of the block 8 by screws 21 is a rigid plate 22 in a slot of which is journaled an adjusting screw 23 threaded into the head 2. The screw has a collar 24 bearing on the underside of the plate 22 and a larger collar 25 bearing on the upper side thereof, the latter being provided with graduations 26 which are related to the lead of screw 23 to permit its use in making micro-metric adjustments. The screw is also provided with a squared head 27 to which a wrench may be applied for adjustment.

It will be apparent that, to adjust the device, it is only necessary to loosen screws 17 slightly, to rotate screw 23 in either direction by a desired amount, and then to retighten screws 17 to clamp the parts together, and that with suitable selection of the pitch of screw 23 in relation thereof to the graduations 26 adjustments may be made to any desired extent by very few motions of a single wrench.

Due to the inclination of surfaces 7 and 13, when bolts 17 are tightened, head 2 and block 8 are wedged toward each other in the direction of the axis of the shank, squeezing out or crushing any material which may have gotten between sur-

faces 3 and 11 or 5 and 9, and positively and firmly locating the parts.

While I have described the illustrated embodiment of my invention in some particularity, obviously many others will readily occur to those skilled in this art, and I do not, therefore, limit myself to the precise details shown and described, but claims as my invention all embodiments, variations, and modifications thereof coming within the scope of the appended claim.

I claim:

A boring bar comprising a shank and a head fixed thereto, the head having three plane bearing surfaces, two of which lie in parallel planes generally normal to the axis of the shank, and the third of which lies between these planes in a plane oblique thereto, a block having three cooperating plane bearing surfaces slidably engaging the respective bearing surfaces of the head, the walls of said head and block members being relieved between said parallel and said oblique bearing surfaces, tool clamping means carried by the block, clamping bolts extending through the block and head in a plane substantially normal to the axis of the shank and between the traces of the intersection of the three planes, and adjusting means for adjusting the head and block relatively in the direction of the traces of the three planes.

OSKAR KYLIN.