Aug. 26, 1924.

1,506,641

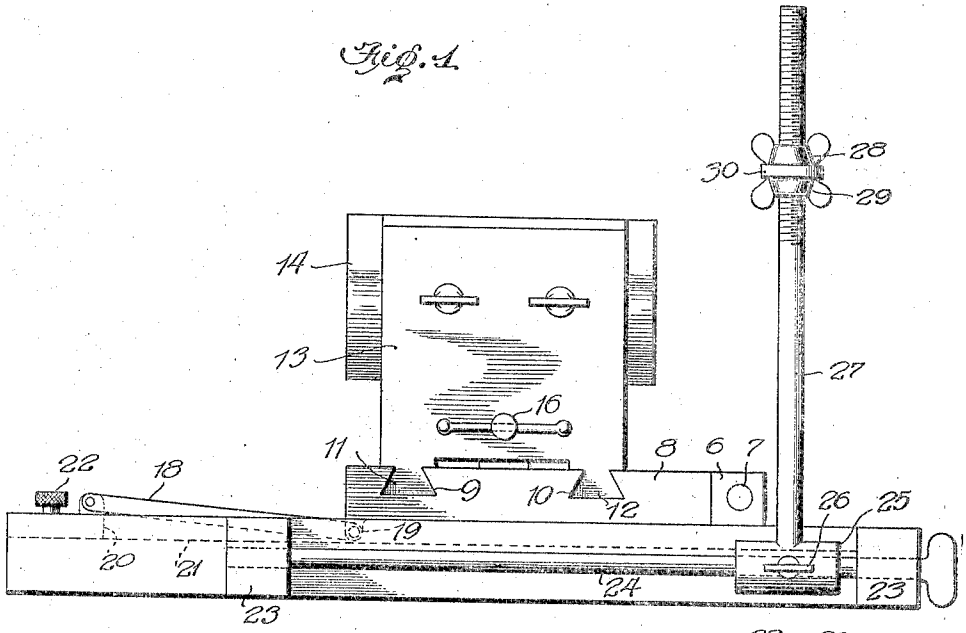
R. E. HUNKE ET AL

COMBINATION JIG AND VISE

Filed July 28, 1923

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Fig. 1.



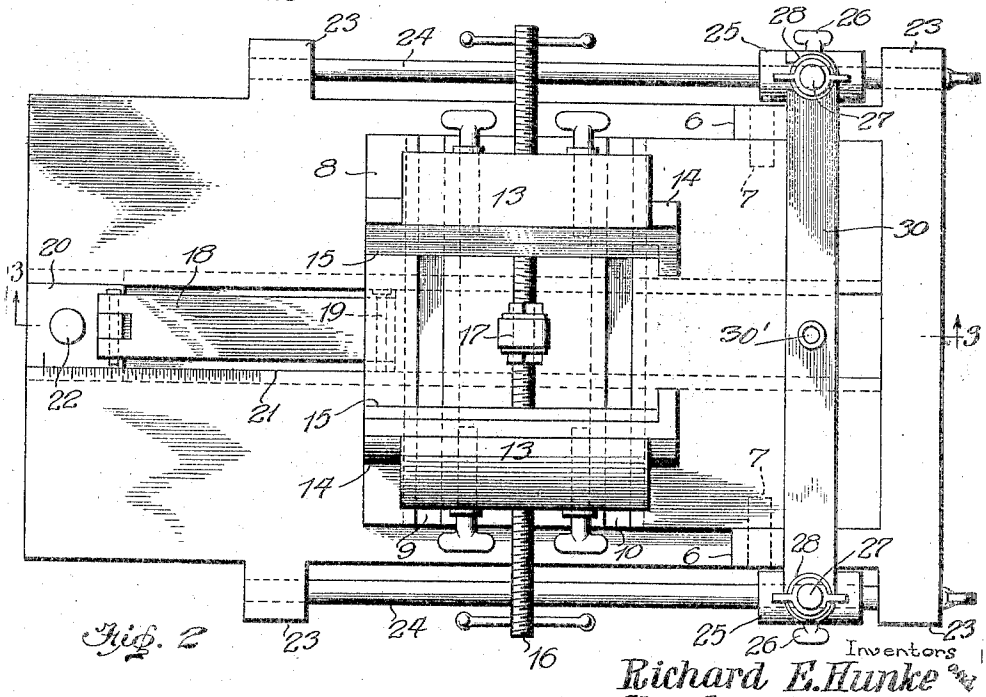


Fig. 2.

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Fig. 3

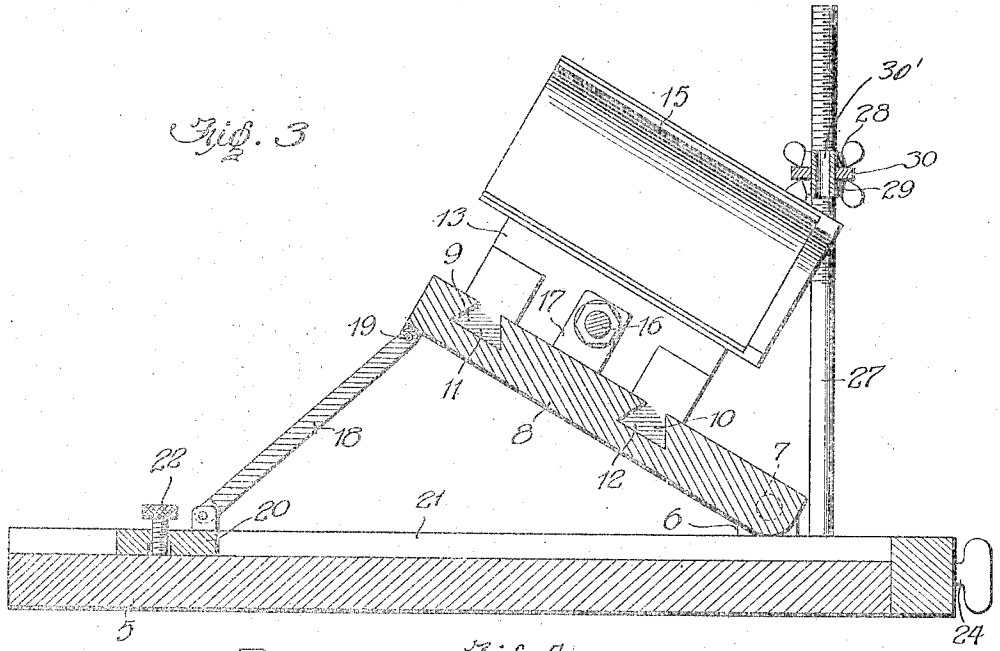
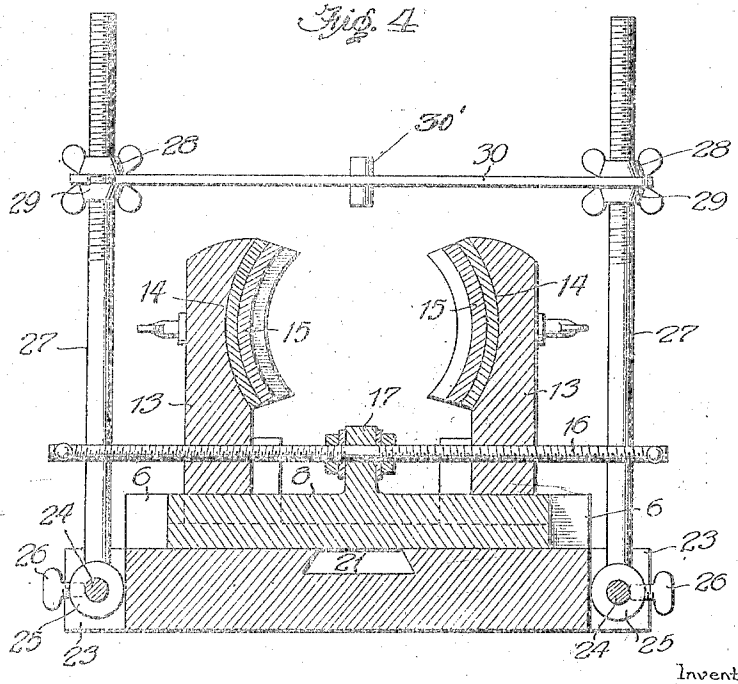


Fig. 4



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UNITED STATES PATENT OFFICE.

RICHARD E. HUNKE AND CHARLIE H. FRANK, OF WACO, TEXAS.

COMBINATION JIG AND VISE.

Application filed July 28, 1923. Serial No. 654,449.

To all whom it may concern:

Be it known that we, RICHARD E. HUNKE and CHARLIE H. FRANK, citizens of the United States, and residents of Waco, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Combination Jigs and Vises; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to combination jig and vise and will be found particularly useful in conjunction with work upon the pistons of internal combustion engines.

An object of the invention is to provide a simple and compact construction admitting of a variety of adjustments in the vise or holder and in the tool guide; and the invention further contemplates the convenience of the workmen and the quickness and efficiency in the work.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a side elevation of a device constructed according to the present invention.

Figure 2 is a top plan view thereof.

Figure 3 is a longitudinal section taken on the line 3—3 in Figure 2, and

Figure 4 is a transverse section taken centrally through the device.

Referring more particularly to the drawings 5 designates a bed or base plate upon which the various parts are installed and erected and near one end are the blocks or bearing 6 to receive the shaft or trunnions 7 on which is pivotally mounted the vise table or block 8. This table or block is formed with separate transverse dove-tail grooves 9 and 10 to receive the complementally formed projections 11 and 12 extending downwardly from the two jaws 13. These jaws have rounded depressions 14 as shown in Figure 4 in order to receive the jaw faces 15. The jaw faces 15 may be of any suitable character and are removably attached to the jaws to enable the substitution of jaw faces to suit the character of the work to be performed.

In the present case the jaw faces are shown as rounded to receive a piston. The jaws 13 are adjustable toward and from each other by a screw shaft 16 passing centrally through the jaws and being fixed centrally in a bearing 17 which prevents the shaft from moving axially but freely admits of its turning. The shaft is provided with threads of opposite pitch in order to cause the jaws to move apart when the shaft is turned in one direction and to approach one another upon the rotation of the shaft in the opposite direction.

The vise table 8 is provided with a leg 18 pivoted beneath the free end of the table as indicated at 19 and either having its opposite end free or pivoted to the sliding block 20 mounted for movement in a central groove 21 made in the bed 5. The block 20 is provided with a set screw 22 by which its location may be fixed. The groove 21 as shown in Figure 4 is a dove-tail groove and the tightening of the screw 22 causes the binding of the wedge-shape block 20 in the walls of said groove.

The bed plate shown in Figure 2 is provided with lugs 23 extending laterally therefrom in pairs to receive rods 24 forming supports for the sliding heads 25 having set screws 26 by which the heads may be secured against movement once the adjustment is effected. The heads are provided with posts 27 extending upwardly and provided with threads to receive pairs of nuts 28 and 29. The nuts serve to support the guide bar 30 which extends across from one post to the other. The bar is provided with perforations to slide on the posts being supported by the lower nut 29 and held rigidly in place by the upper nut 28.

In the use of the device the jaws 13 are first made to open sufficiently to receive for instance a piston having a broken wrist pin. The jaws are thereupon moved together to clamp the piston in place and the vise table is adjusted angularly as shown in Figure 3 to a suitable position for bringing the piston and its broken wrist pin into a correct relative position with respect to the guide bar 30. Appropriate tools are then employed to remove the broken wrist pin and to perform other necessary work on the piston. The vise table may be adjusted to any an-

gular position or may be laid flat on the bed and the tool and guide bar will be adjusted as to elevation and also longitudinally along the rods 24 as required.

The guide bar 30 is provided with a guide thimble 30^1 for receiving a drill. The thimble will guide the drill bit in its operation. The bar 30 is a support for the bit guide 30^1 and is adjustable horizontally and as to height in order to bring the thimble 30^1 to a correct position with reference to the work where it may guide the drill.

It will be appreciated from the foregoing that the device is compact and admits of a variety of positions which add to the convenience and effectiveness of the workmen in this character of work.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A combination jig and vise comprising a bed, a vise table hinged at one end to the bed, a hinged leg for holding the free end of the vise table in angularly adjusted position, and an adjustable guide bar carried by the bed and movable relatively to said vise table.

2. A combination jig and vise comprising a bed, a vise table pivoted thereto, a leg pivotally carried by the free end of said vise table, and engaging the bed at a successive number of points to hold the table in angularly adjusted position, means on said table for releasably grasping the work, and an adjustable guide bar mounted on said table.

3. A combination jig and vise comprising a bed, a vise table hinged thereto, means for adjustably holding said table at different angular positions, means on said table for releasably holding the work, adjustable posts movable along the bed at the sides of said vise table, and a guide bar carried by said posts.

4. A combination jig and vise comprising a bed, a vise table pivoted thereto, means for holding said table in a variety of angular positions about the pivotal point, means carried by said vise table for releasably holding the work, posts slidable alongside said bed, means for securing said posts in adjusted position, and a guide bar adjustably carried by said posts.

5. A combination jig and vise comprising a bed having a groove therein, a vise table hinged thereto, a leg pivoted to the free end of the table, a block slidable in said groove, the leg being also pivoted to the block, vise jaws carried by said table, and a guide bar adjustably mounted in conjunction with said vise table.

6. A combination jig and vise comprising a bed, having a longitudinal and substantially central groove, a vise table pivoted at one end of the bed, a hinged leg carried by the free end of said table, a block secured to the other end of said leg slidably fitted in the groove in said bed, means for securing the block frictionally against movement, and a guide bar adjustable relatively to said table.

7. A combination jig and vise comprising a bed, a table pivoted thereon and having separated transverse dovetail grooves, jaws having projections slidably fitted in said grooves, means for causing the jaws to move apart and approach each other, jaw faces carried removably by said jaws, means for tilting the table, bars carried at the sides of said bed plate, posts having sleeves slidable on said bars, a guide bar fitted over said posts, and adjustable nuts on the posts above and below the bars for regulating the height thereof.

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