May 30, 1944. H. P. DERMOND 2,350,099

PLATE HOLDER

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FIG 1

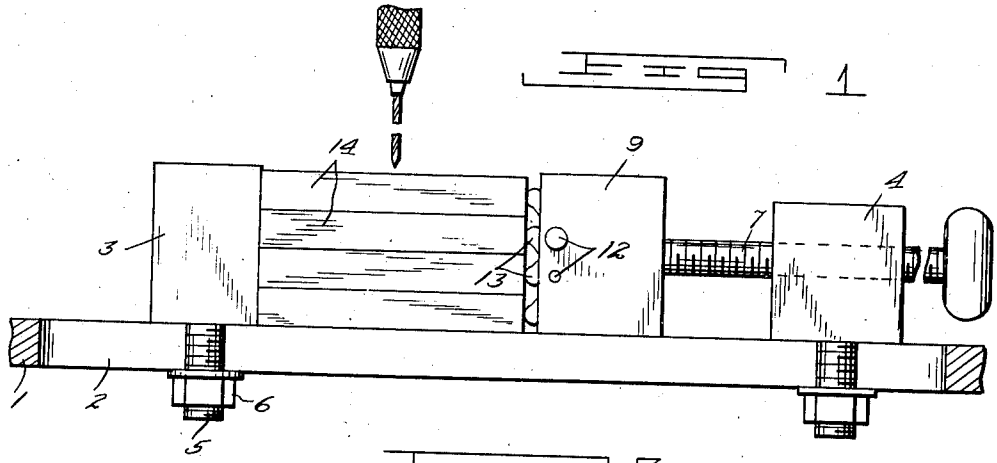


FIG 3

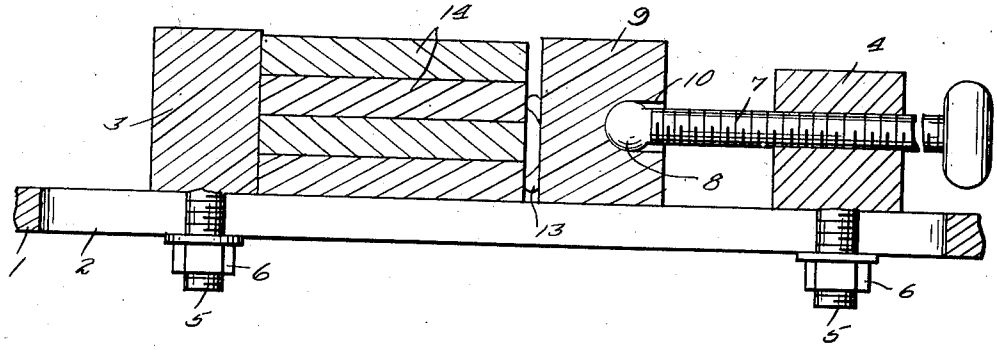
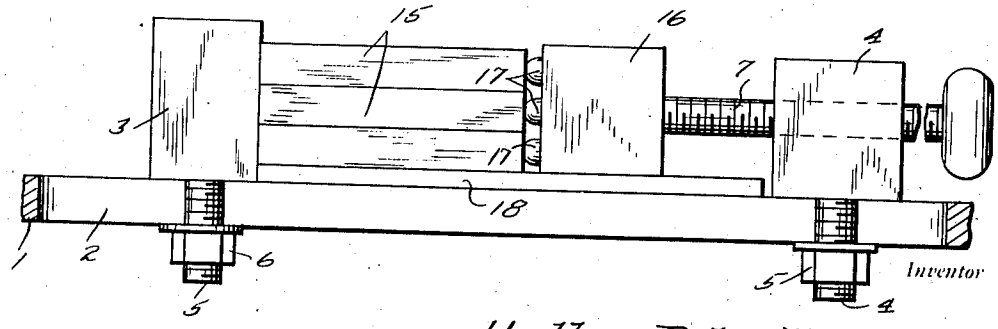


FIG 7



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PLATE HOLDER

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Fig 2

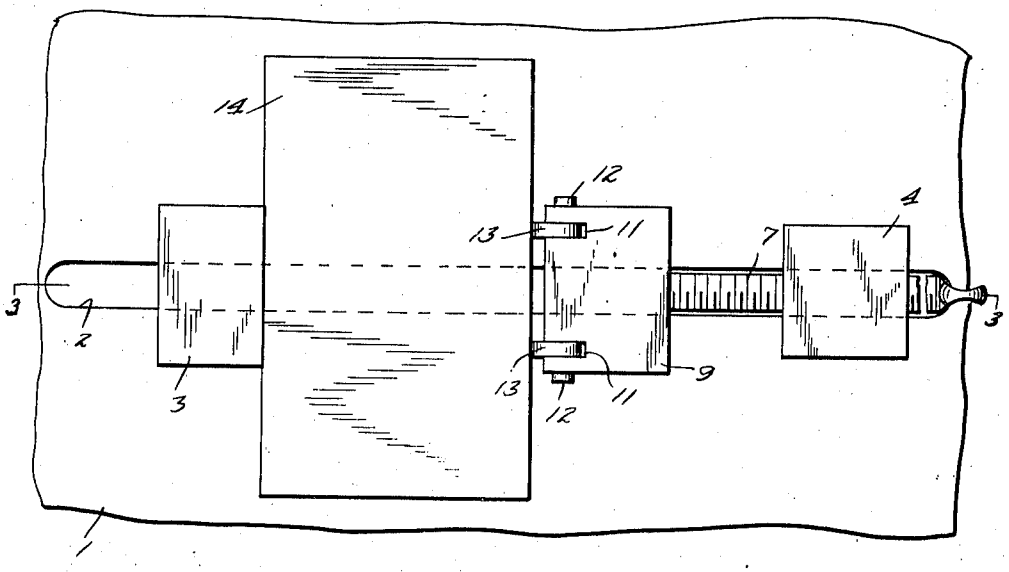


Fig 4

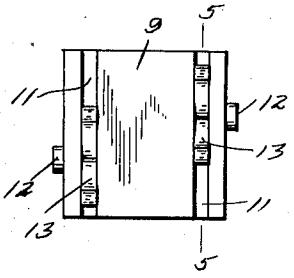


Fig 5

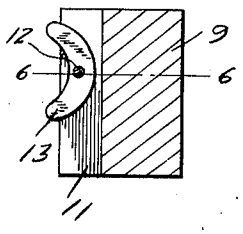


Fig 6

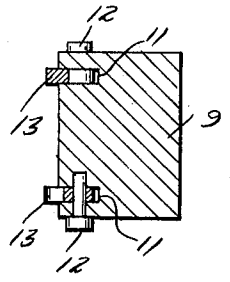


Fig 8

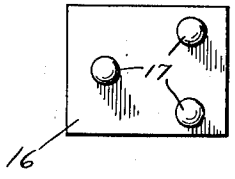
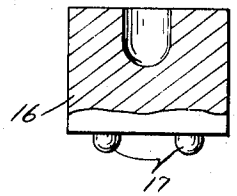


Fig 9



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UNITED STATES PATENT OFFICE

2,350,099

PLATE HOLDER

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Application November 23, 1942, Serial No. 466,650

3 Claims. (Cl. 77—63)

The present invention relates to new and useful improvements in plate holders, particularly for milling machines, drill presses, et cetera, and has for its primary object to provide, in a manner as hereinafter set forth, novel means whereby a single pressure screw may be used for firmly clamping a stack of plates in position.

Other objects of the invention are to provide a plate holder or clamp of the aforementioned character which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of an embodiment of the invention, showing a portion of the machine bed in vertical section.

Figure 2 is a top plan view thereof.

Figure 3 is a view in vertical section, taken substantially on the line 3—3 of Figure 2.

Figure 4 is a view in front elevation of the jaw.

Figure 5 is a vertical sectional view, taken substantially on the line 5—5 of Figure 4.

Figure 6 is a view in horizontal section, taken substantially on the line 6—6 of Figure 5.

Figure 7 is an elevational view of another form of the invention.

Figure 8 is a view in front elevation of the jaw of the modification.

Figure 9 is a view principally in horizontal section through the modified jaw.

Referring now to the drawings in detail, it will be seen that reference numeral 1 designates a portion of the bed or table of a drill press having the uusal slot 2 therein. Blocks 3 and 4 are mounted on the bed 1 and secured for adjustment toward and away from each other in the slot 2. Toward this end, the blocks 3 and 4 include depending threaded shanks 5 which are operable in the slot 2, securing nuts 6 being threaded on said shanks.

Threaded through the block 4 is a horizontal thumb screw 7 having a ball head 8 on one end. Mounted on this end of the screw 7 is a jaw 9. The jaw 9, which is removable, is mounted for universal rocking adjustment on the screw 7, said jaw having formed therein a socket 10 which accommodates the ball 8.

The face of the jaw 9 has formed therein a plurality of vertical grooves or channels 11. Pins 12 traverse the channels or grooves 11 and journaled for rocking movement on said pins are staggered, substantially crescent-shaped bearings 13.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. The end portions of the arcuate bearings 13 project from the grooves or channels 11 in the jaw 9 for engagement with the opposed edges of a stack of plates 14. It will thus be seen that two of the arcuate bearings 13 are adapted to secure a stack comprising four of the plates 14. By reason of their rockable mounting, the arcuate fingers or bearings 13 readily adjust themselves to variations in the width of the plates comprising the stack. With the use of extra fingers or bearings 13 in the jaw, the device will accommodate plates in multiples of four.

The embodiment illustrated in Figures 7, 8 and 9 of the drawings is particularly for stacks comprising three plates, as at 15. This embodiment comprises a jaw 16 having projecting from its face stationary bearings 17 in the form of staggered lugs. As will be seen, each of the plates 15 is engageable by one of the bearings 17. By the addition of lugs 17 on the jaw 16, said jaw 16 may accommodate plates in multiples of three. In this embodiment, a plate 18 is mounted on the machine 1 beneath the jaw 16 and the work 15.

It is believed that the many advantages of a plate holder constructed in accordance with the present invention will be readily understood, and although preferred embodiments are as illustrated and described, it is to be understood that further modifications and changes in the details of construction may be had which will fall within the scope of the invention as claimed.

What is claimed is:

1. In combination with the bed of a drill press or like machine having a plane upper face and provided with an elongated slot, a pair of blocks disposed on said bed and having depending threaded shanks passing through and slidable in said slot to permit adjustment of the blocks toward or away from each other, nuts on said shanks to secure the blocks in adjusted position, one of said blocks constituting a fixed jaw and having a plane inner face perpendicular to the upper face of the bed, a movable jaw mounted on the bed and interposed between said blocks, said movable jaw having a plane inner face perpendicular to the upper face of the bed and being provided in said inner face with spaced parallel vertical grooves, an arcuate work-engaging

bearing mounted for rocking movement on a central horizontal pivot in each vertical groove, the ends of the bearings projecting from the grooves for engagement with the adjacent edges of a plurality of four plates stacked on the bed between the jaw block and said jaw, the bearing in one groove being pivoted on a different horizontal plane than that in the other groove so that one bearing will engage two spaced plates and the other bearing will engage the remaining spaced plates of the stack, and an adjusting screw threaded through the other block and engaging the jaw for forcing the latter toward the jaw block and clamping the plates on the bed.

2. In combination with the bed of a drill press or like machine having a plane upper face and provided with an elongated slot, a pair of blocks disposed on said bed and having depending threaded shanks passing through and slidable in said slot to provide adjustment of the blocks toward or away from each other, nuts on said shanks to secure the blocks in adjusted position, one of said blocks constituting a fixed jaw and having a plane inner face perpendicular to the upper face of the bed, a movable jaw mounted on the bed and interposed between said blocks, said movable jaw having a plane inner face perpendicular to the upper face of the bed and provided at said inner face with three work-engaging elements, one of said elements being disposed in a horizontal plane between the other two elements, and said other two elements being disposed in the same vertical plane to one side of the one element so that the two elements will engage the edges of spaced ones of three plates and the one element will engage the edge of the remaining plate of the three plates when the latter are stacked on the bed between the jaw block and the jaw and an adjusting screw threaded through the other block and engaging the jaw for forcing the latter toward the jaw block and clamping the plates on the bed.

3. In combination with the bed of a drill press or like machine having a plane upper face and provided with an elongated slot, a pair of blocks disposed on said bed and having depending threaded shanks passing through and slidable in said slot to permit adjustment of the blocks toward or away from each other, nuts on said shanks to secure the blocks in adjusted position, one of said blocks constituting a fixed jaw and having a plane inner face perpendicular to the upper face of the bed, a movable jaw mounted on the bed and interposed between said blocks, said movable jaw having a plane inner face perpendicular to the upper face of the bed and provided at said inner face with three work-engaging elements, one of said elements being disposed in a horizontal plane between the other two elements and said other two elements being disposed in the same vertical plane to one side of the one element so that the two elements will engage the edges of spaced ones of three plates and the one element will engage the edge of the remaining plate of the three plates when the latter are stacked on the bed between the jaw block and the jaw, and an adjusting screw threaded through the other block and engaging the jaw for forcing the latter toward the jaw block and clamping the plates on the bed, said adjusting screw being separable from the jaw when retracted to permit removal of said jaw with the plates.

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