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ADJUSTABLE WORK CARRYING TABLE FOR DRILLING AND OTHER MACHINES.

APPLICATION FILED JAN. 24, 1920.

1,397,771. Patented Nov. 22, 1921.

2 SHEETS—SHEET 1.

FIG. 1.

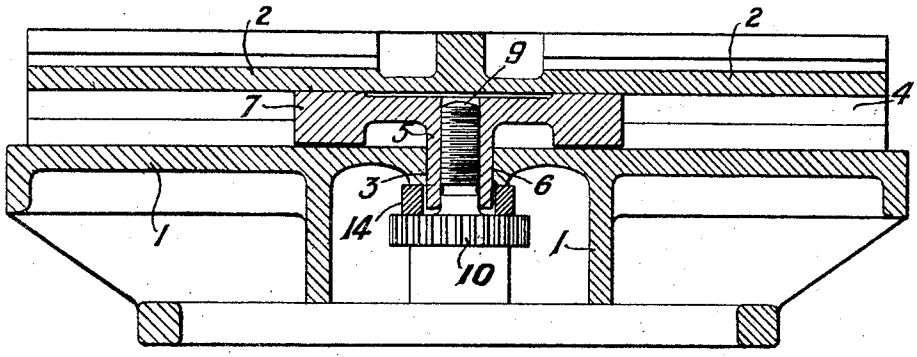
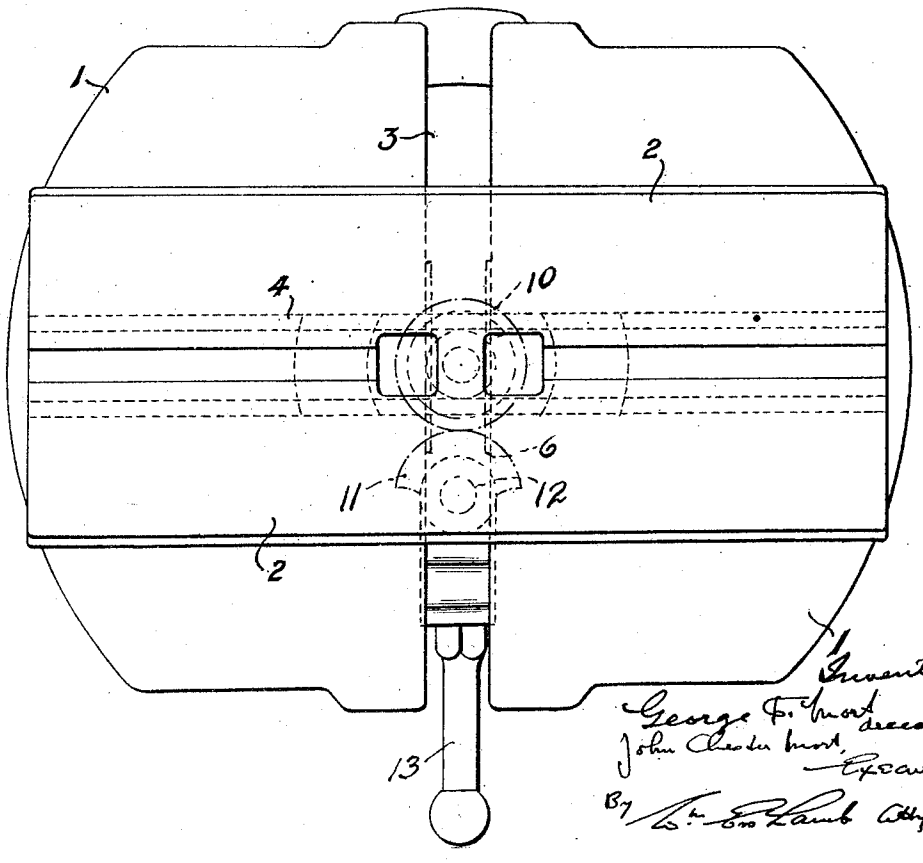


FIG. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

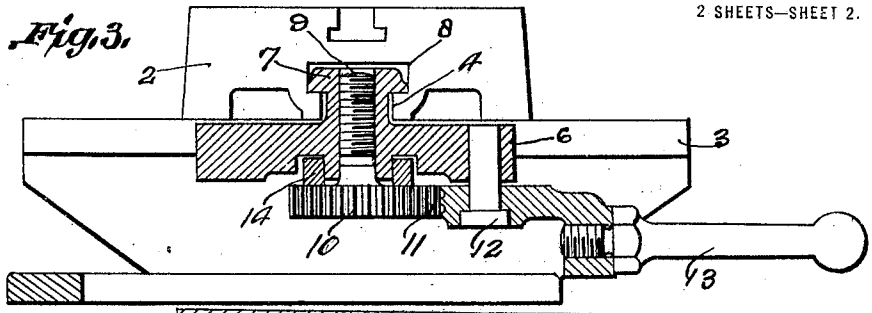


Fig. 6.

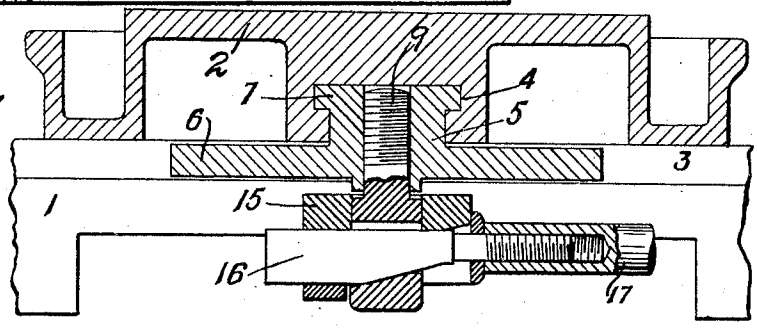


Fig. 4.

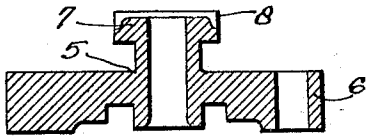


Fig. 7.

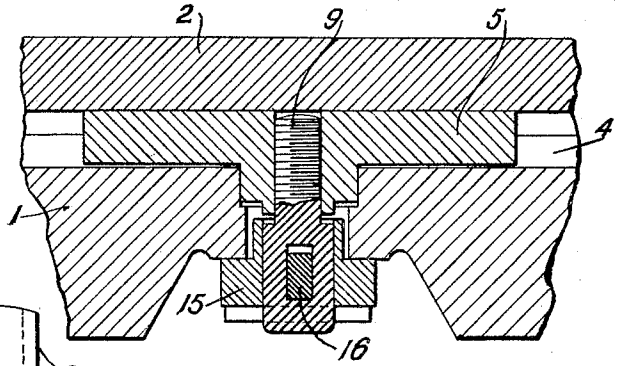
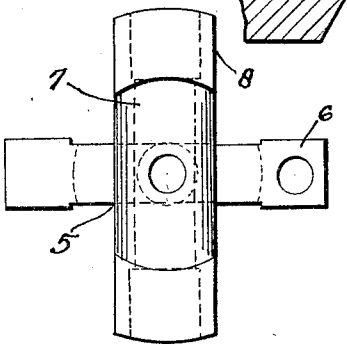


Fig. 5.



Inventors:
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By [illegible] Atty.

UNITED STATES PATENT OFFICE.

GEORGE FREDERICK MORT, DECEASED, BY JOHN CHESTER MORT, EXECUTOR, OF EALING, ENGLAND.

ADJUSTABLE WORK-CARRYING TABLE FOR DRILLING AND OTHER MACHINES.

1,397,771. Specification of Letters Patent. Patented Nov. 22, 1921.

Application filed January 24, 1920. Serial No. 353,900.

To all whom it may concern:

Be it known that I, JOHN CHESTER MORT, a subject of the King of Great Britain, residing at Ealing, in the county of Middlesex, England, executor of the last will and testament of GEORGE FREDERICK MORT, late a subject of the King of Great Britain, state that the said GEORGE FREDERICK MORT invented certain new and useful Improvements in Adjustable Work-Carrying Tables for Drilling and other Machines, of which the following is a specification.

The present invention refers to adjustable work-carrying tables for drilling and other machines, the object being to provide a hand-operated table of simple construction, capable of easy adjustment as to position in any direction in the plane of the table, and which when so adjusted can be quickly clamped in position and released with ease, and a table which when employed with a drilling machine is self-centering under the action of the drill.

Referring now to the accompanying drawings wherein an example of construction is shown of an adjustable work-holding table according to this invention, Figure 1 is a sectional elevation, Fig. 2 a plan view, and Fig. 3 a sectional elevation taken at right angles to Fig. 1. Fig. 4 is an elevation and Fig. 5 a plan view of the cruciform member forming the base guide bar and the table guide bar, and Figs. 6 and 7 are sectional views taken at right angles to each other showing a modified form of locking device by which the table is held after it has been brought to the position desired.

The work-carrying table, which is shown as a separate structure in the drawings, may form an integral part of a drilling or other machine and either be formed with the framework thereof or be fixed thereto. Such a table comprises a base 1 and a movable work-holding table 2 sliding thereon, which latter is formed with suitable grooves or recesses in its upper face to enable the work to be securely held thereto as is usual with work-carrying tables.

The base 1 has the said slot 3 formed in its upper face extending from side to side, and the table 2 is formed with the said rectilinear undercut groove 4 upon its underside, the said groove extending from end to end of the table at right angles to the slot 3 when the table and base are assembled.

To slidably connect these two parts, a cruciform member 5 is provided, composed of a lower or base guide bar 6 and an upper or table guide bar 7 at right angles to each other. The table guide bar 7 has laterally extending ribs 8 and slides within the groove 4 of the table 2, the ribs 8 engaging the undercut portion of the said groove, and the base guide bar 5 slides in the slot 3 of the base 1.

By this means movement of the table 2 in two directions at right angles can take place, for instance, when the table 2 is moved right or left Fig. 1 the cruciform member 5 will remain stationary and when the table 2 is moved at right angles thereto, that is right or left considering Fig. 3, the cruciform member will move with the table, the base guide bar 6 traveling in the slot 3 of the base 1. By a combination of these movements the table 2 can be adjusted to any desired position.

The cruciform member 5 is drilled centrally and screwthreaded to receive a screwthreaded clamp bolt 9 carrying at its lower end a pinion 10 in a space below the top plate of the base 1. A segment rack 11 pivoted on a pin 12 fixed into the base guide bar 6 engages with the aforesaid pinion 10 and is provided with an operating handle 13. The movement of the segment will cause the pinion 10 to revolve and with it the clamp bolt 9.

To prevent the pinion 10 from mounting in the cruciform member when revolved, a plate or washer 14 is inserted between the top face of the pinion and the underside of the base 1, the base guide bar 6 being grooved on its under side to allow the washer 14 to pass beneath it, and the washer 14 is suitably reduced in thickness at those parts which pass beneath the said base guide bar 6 so as to allow the cruciform member to move downward in relation to the pinion 10. Thus when the gear is revolved and the screwthread of the clamp bolt 9 operates, the washer 14 is caused to abut on the under surface of the base on each side of the slot 3, and the cruciform member and with it the table 2 is tightly clamped in contact with the base 1, a slight clearance as shown at

Fig. 1 being then left between the upper face of the base 1 and the under side of the table guide bar 7, so effectually locking the table in the desired position to which it has been adjusted.

Obviously the mechanical devices for clamping the table to the base through the medium of the cruciform member may be varied in construction, and to illustrate this a wedge clamping mechanism is shown in the sectional views at Figs. 6 and 7, which vertical sectional views are taken at right angles to each other. Referring therefore to Figs. 6 and 7 the clamp bolt 9 engaging the central hole in the cruciform member 5 projects downward through the bottom of the slot 3 in the base 1 and passes through a block 15 bearing against the under surface of the base 1.

A wedge-shaped cotter bar 16 passes through the block 15 and through a tapered hole in the lower end of the clamp bolt 9. The cotter bar 16 engages a key spindle 17, by means of a screwthread, so that by turning the spindle 17 the cotter bar 16 will be traversed and the table will be locked or released by the action of the wedge-shaped end of the cotter bar 16 upon the clamp bolt 9 and cruciform member 5.

The invention has now been sufficiently described for the purpose of this specification, but as a resultant of the construction, and as applied to a drilling machine in which the drill spindle does not have motions parallel to its axis, the table is self-centering, that is to say for instance, if the piece to be drilled, with a jig superposed, is fixed on said table, the jig having holes with flared upper ends, then if the table is moved to bring the hole in the jig approximately under the axis of the drill and the latter is brought down, the pressure of the drill will move the table and center the work, even if the table is not set accurately. The table is then clamped in position.

Work-carrying tables such as described may be constructed as separate devices, but obviously in some cases such work tables may be constructed as integral parts of drilling or other machines, and either be formed with the framework thereof or fixed thereto. When such tables are constructed to be fixed to the framework of the machine they may be so fixed, by for instance dovetail guides, that they may be adjustable in relation to the main framework of the machine.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In an adjustable work-carrying table for drilling and other machines having a stationary base and a table movable relatively thereto; the combination of a one-piece cruciform member comprising a lower base guide bar adapted to enter and slide in a slot of said stationary base to permit said movable table to have a sliding movement together with said cruciform member in one direction upon said stationary base, and an upper table guide bar extending at right angles to said base guide constructed to slidably fit an under-cut groove of said movable table, to permit said movable table to have a sliding movement on said cruciform member at right angles to and upon said stationary base, and means for clamping the movable table and the cruciform member to the stationary base.

2. In an adjustable work-carrying table for drilling and other machines, the combination with a base having a flat upper surface and having a rectilinear through slot of suitable length in said base, and a table supported by and slidable upon said base, said table having a rectilinear under-cut groove in its under surface; of a one-piece cruciform member comprising a lower base guide bar to enter and adapted to slide in the slot of said stationary base and an upper table guide bar extending at right angles to said base guide bar and constructed to slidably fit in said under-cut groove of said table to permit said table to have sliding movement in one direction guided by said table guide bar while said cruciform member remains stationary and to have sliding movement at right angles thereto while said base guide bar slides in said slot of said base, and means for clamping said table to said base comprising a clamping screw, said cruciform member having a central screw-threaded hole to receive said clamping screw, a tooth pinion on the lower end of said clamping screw below said base, a washer located between the upper face of said pinion and the under face of said base on either side of said slot therein, a toothed segment to engage said pinion, a pivot pin carried by said base guide bar of said cruciform member to pivotally support said toothed segment, and an operating handle fixed to said toothed segment to rock the latter on its pivot to revolve said clamping screw to draw down said cruciform member and clamp said table to said base thereby.

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

JOHN CHESTER MORT,

Executor of George Frederick Mort, deceased.

Witnesses:

THOMAS W. ROGERS,

ETHEL M. RAPSON.