

Sept. 6, 1949.

R. P. SEDLOCK
WORK HOLDING DEVICE

2,480,885

Filed March 12, 1946

2 Sheets-Sheet 1

FIG 1

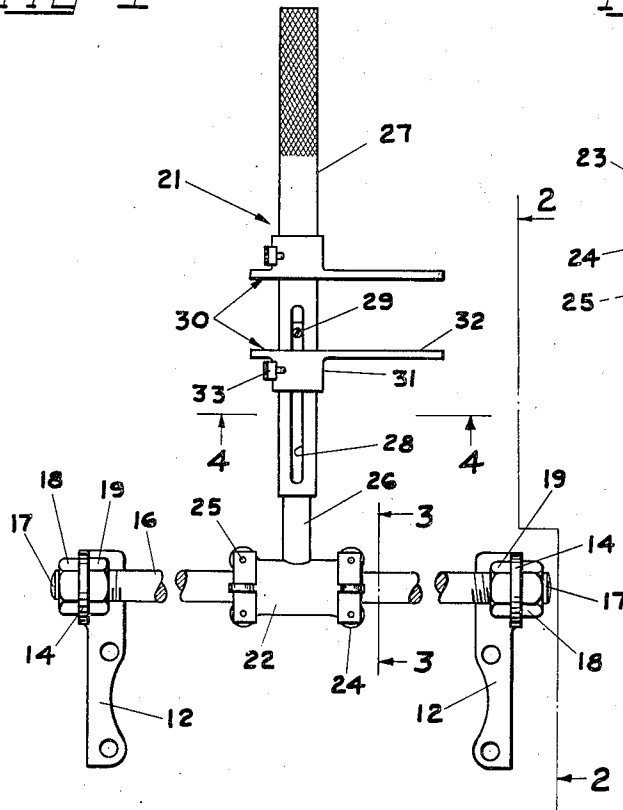


FIG 3

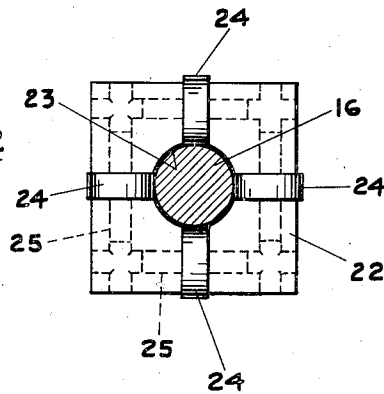


FIG 2

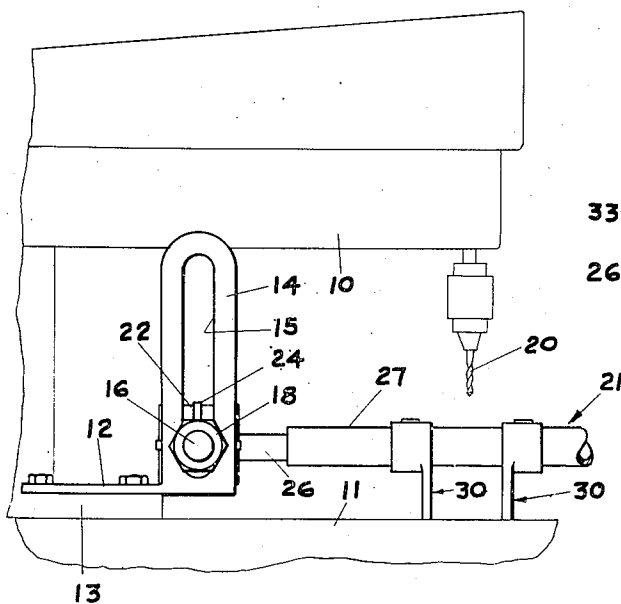
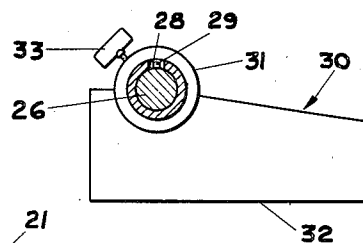


FIG 4



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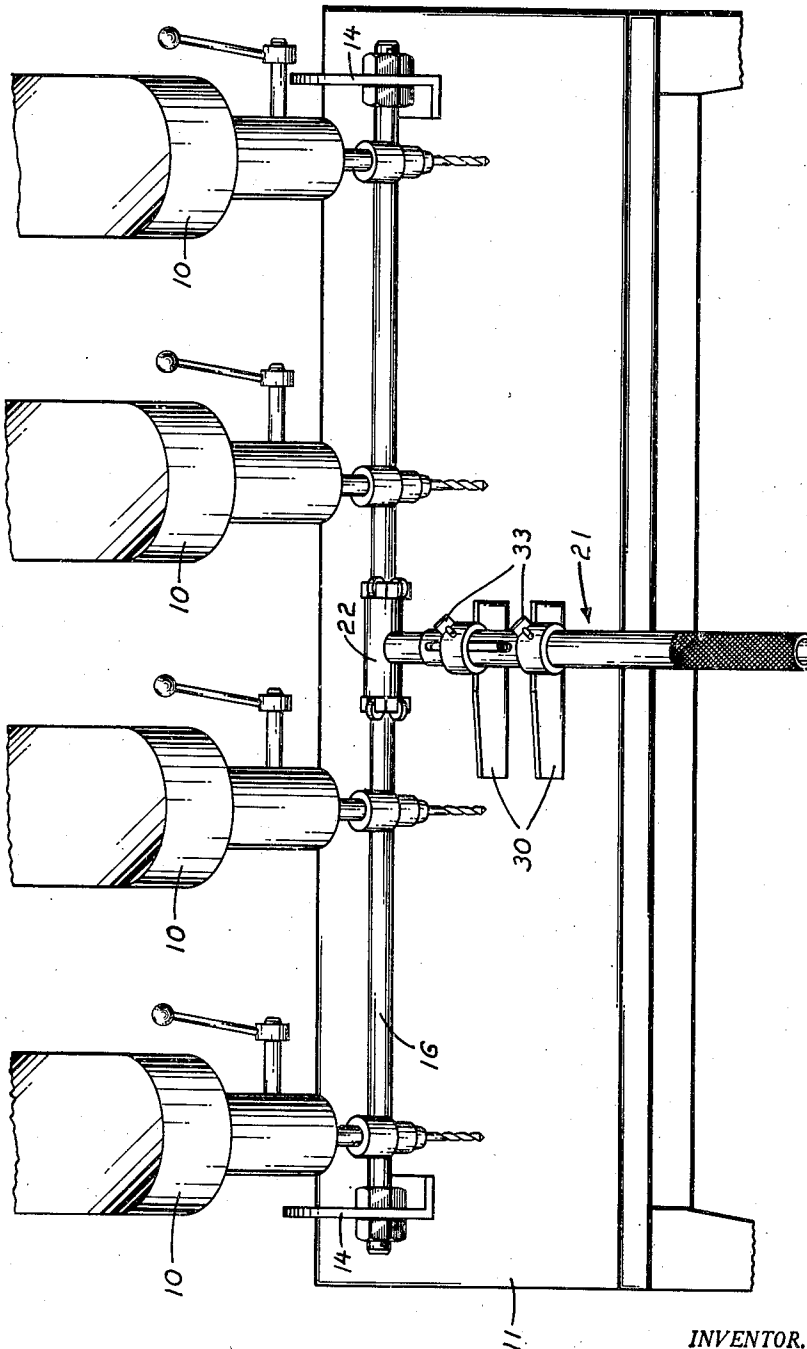
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2 Sheets-Sheet 2

Fig. 5



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WORK HOLDING DEVICE

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4 Claims. (Cl. 77-63)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

1

This invention relates to work holding devices, and more particularly to fixtures for holding work in adjusted positions.

An object of the invention is to provide improved means for holding work in adjusted positions relative to a drill or other machine tool.

Other objects of the invention are to provide an improved adjustable work holding device adapted to be used in connection with a drill press or similar apparatus and of such construction as to facilitate movement of the work relative to the apparatus; to provide an improved apparatus of the character described which is useful in holding a plurality of work pieces; and to provide improved elements and arrangements thereof in a device of the character described and for the purposes set forth.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a plan view of a work holding device embodying the features of the present invention.

Fig. 2 is an end elevational view of the device taken on the line 2-2 of Fig. 1, showing the relation of the same to a drill press.

Fig. 3 is a transverse, sectional view, taken on the line 3-3 of Fig. 1.

Fig. 4 is a transverse, sectional view, taken on the line 4-4 of Fig. 1.

Fig. 5 is a front view of a bank of drill presses, showing the instant invention applied thereto.

Referring more in detail to the drawing:

In Fig. 2, the numeral 10 designates a drill press which is mounted on a horizontal supporting surface or table 11. The press 10 is normally one of a battery of drill presses (Fig. 5) disposed in aligned relation to each other. An angular bracket 12 is secured to the base 13 of each end or outermost drill press and has an upstanding arm portion 14, which is provided with a longitudinal opening or slot 15. Adjustably mounted between a pair of the brackets 12 is a guide member in the form of a cylindrical rod bar 16 having threaded end portions 17 (Fig. 1). The bar 16 is of sufficient length to permit the threaded ends 17 thereof to extend through the slots 15 of the bracket arms 14 and receive cooperating or companion pairs of nuts 18 and 19, each pair of nuts clamping one of said arms therebetween. The bar is normally disposed in parallel, spaced relation to the table 11, and is positioned between the base portion of the drill press and its drill bit 20.

Slidably and pivotally mounted on the bar 16

2

are a plurality of extensible or telescoping arms or elements 21 disposed in perpendicular relation to said bar. A block or carriage 22 is welded, or otherwise secured, to the inner end of each arm 21 and has a longitudinal bore 23 (Fig. 3) for slidably engaging upon the bar. The block 22 has a plurality of radially-disposed wheels or rollers 24, preferably rotatably mounted upon pins 25, which are adapted to ride upon the surface of the bar so as to facilitate movement of said block and the arm longitudinally of said bar.

The arm 21 preferably includes an inner member or section 26 which is connected to the block and which telescopes or slidably engages within an outer hollow section or sleeve 27. An elongated opening or slot 28 is formed in the inner portion of the sleeve 27 for receiving a radial pin or headless screw 29 carried by the inner member 26 so as to prevent relative rotation of said member and removal thereof.

Slidably mounted upon the sleeve 27 are a pair of clamping members or brackets 30, each of which includes a collar 31 and a vertical clamp plate or work engaging element 32. The latter rests upon the table 11 so as to extend perpendicular to the longitudinal axis of the arm 21 and parallel to the longitudinal axis of the bar 16. A thumb screw 33 is carried by each collar 31 for engaging the sleeve so as to fasten each bracket 30 thereto in adjusted positions. Work (not shown) clamped between the plates of the brackets is positioned by telescoping the arm 21, moving the clamping brackets relative to said arm and sliding said arm longitudinally of the bar 16.

Operation

The operation of a work holding device constructed as described is as follows:

When it is desired to employ one or more of a battery of drill presses 10 (Fig. 5) on one or more pieces of work, the described device is adjusted so as to position each work piece below one of said drill presses. The bar 16 is fastened in spaced relation to the table 11 by moving the ends 17 of the same vertically within the slots 15 of the brackets 12. Each block 22 is then slid along the bar so as to cause the arm 21, connected to the block, to travel longitudinally of said bar and locate its clamping brackets 30 in the desired relative position beneath one of the drills 20. The plates 32 of each pair of clamping brackets are moved longitudinally of their arm and relative to each other so as to clamp the work piece therebetween. Tightening of the thumb screws 33 fastens the bracket plates in clamping position

3

upon the arm. Due to the provision of the telescoping sections 26 and 27 of the arm, the position of the work piece may be varied transversely of the table so as to move the same inwardly or outwardly of the drill. As has been explained, the sliding engagement of the block 22 upon the bar 16 permits movement of the work piece longitudinally of the table by manual movement of the arm 21. Thus, universal adjustment of the work piece relative to the drill is permitted without disconnection of said work piece.

While I have shown but one embodiment of my invention, it is susceptible to modification without departing from the spirit of the invention. I do not wish, therefore, to be limited by the disclosures set forth, but only by the scope of the appended claims.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

I claim:

1. In a device of the character described, a support, a pair of spaced brackets mounted on said support, a cylindrical bar adjustably mounted between said brackets in a substantially horizontal plane, a carriage slidably mounted on the bar, an extensible arm having a hollow outer section and an inner section receivable therein, the arm being disposed in perpendicular relation to said bar and having its inner section connected to the carriage, a pair of collars adjustably mounted on said arm, and a clamping plate secured to each collar and disposed in parallel relation to said bar, the plates coacting with each other to clamp work therebetween.

2. In a device of the character described, a support, a bar mounted in a horizontal plane above the support, a carriage slidably mounted on the bar, an arm connected to the carriage perpendicular to said bar, a pair of collars adjustably mounted on the arm, and work engaging elements connected to each collar perpendicular to said arm.

3. A work holder for a drill press having a

4

supporting surface beneath the press, comprising a rod, means for mounting said rod parallel to said surface and spaced thereabove, a carriage movably secured to said rod, an elongate handle mounted to said carriage longitudinally adjustable with respect thereto, and a pair of work clamping members having flat bottom edges adapted to rest on said surface while clamping work therebetween, said members being adjustably mounted on said handle and disposed to extend horizontally and transversely from one side of said handle.

4. Work holding apparatus for a drill press having a support surface therebeneath, comprising a rod, means for mounting said rod parallel to and spaced above said surface, a carriage mounted on said rod for movement therealong, an arm secured to said carriage and extending transversely therefrom above said surface, a sleeve telescoped over said arm forming a handle extension thereof, and a pair of plate-like work holding members mounted on said sleeve extending transversely from one side of said sleeve substantially parallel to said rod, said members having straight bottom edges and forming legs adapted to rest on said surface while clamping work therebetween.

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