July 12, 1938. J. KOSMAN ET AL 2,123,337

SAFETY DRILL PRESS

Original Filed Dec. 28, 1936 3 Sheets-Sheet 1

Fig. 1.

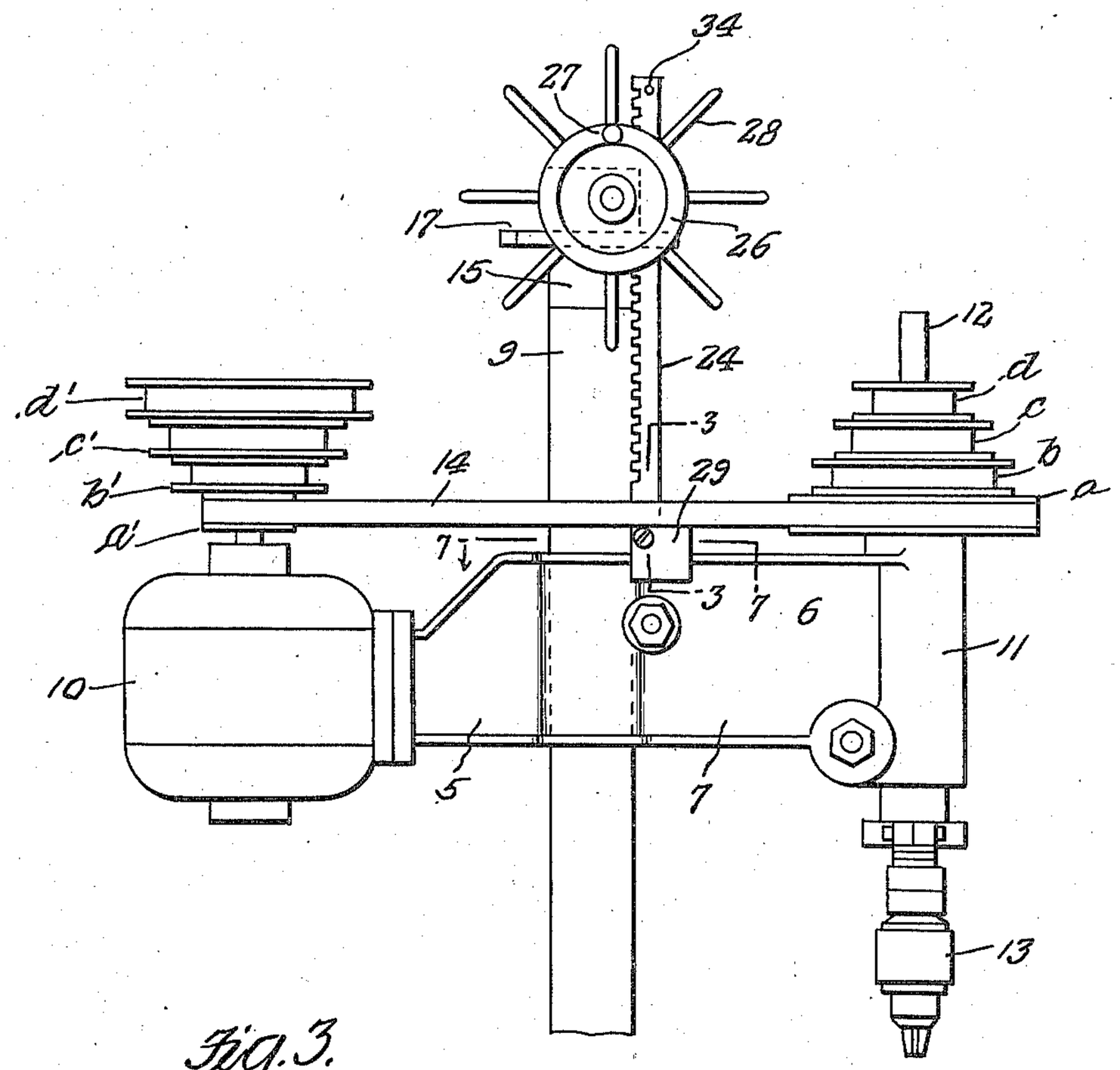

Fig. 3.

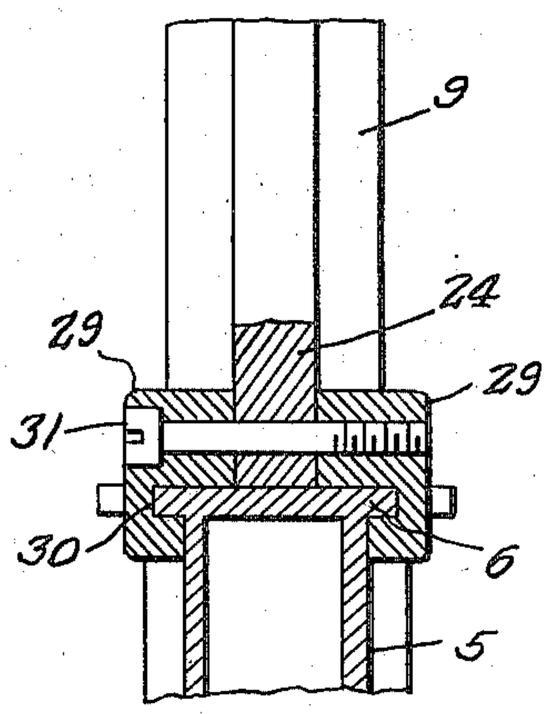

Fig. 4.

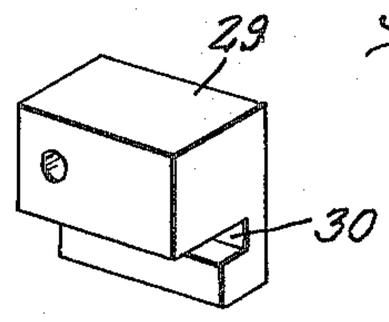

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Fig. 2.

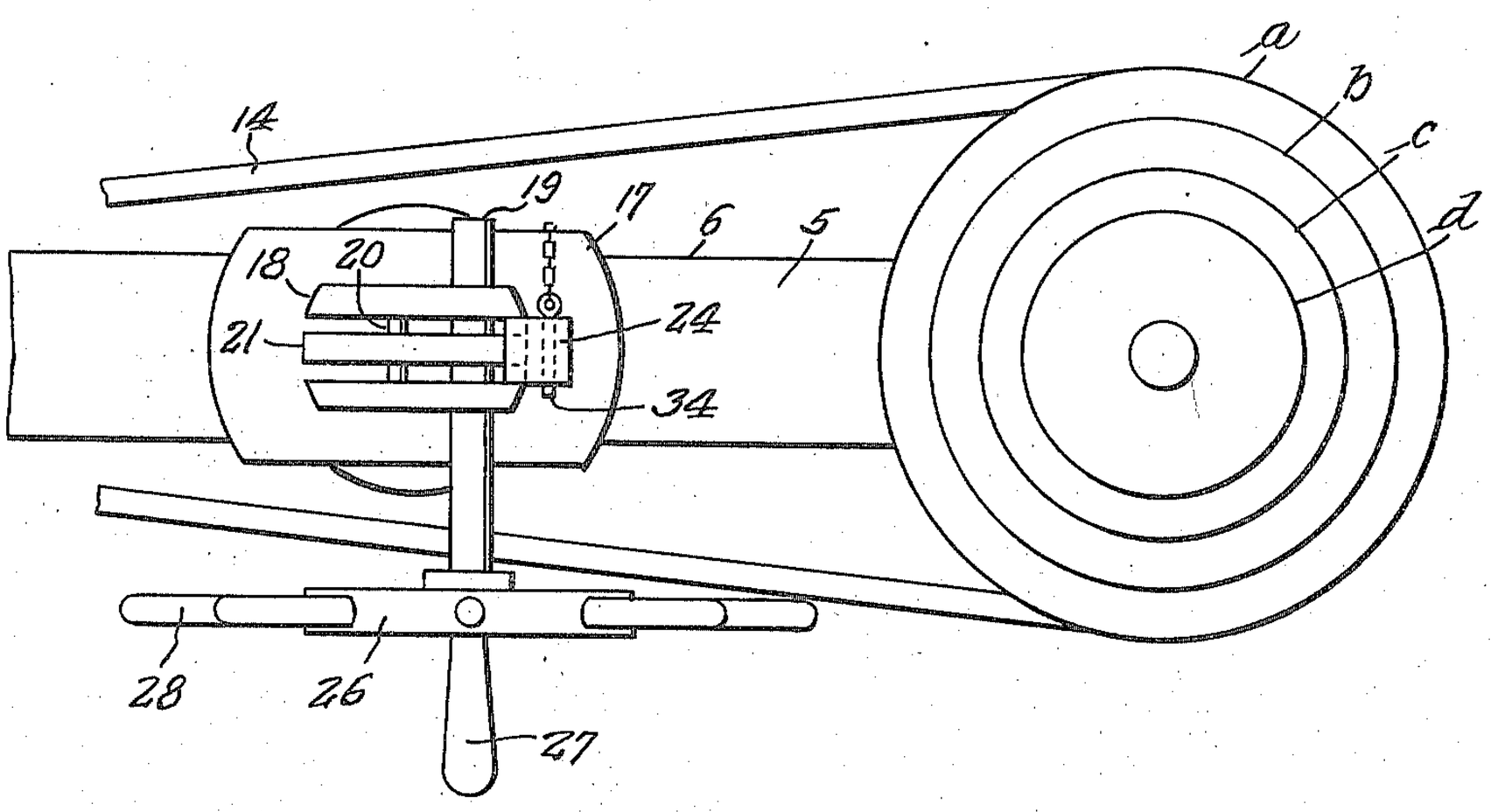
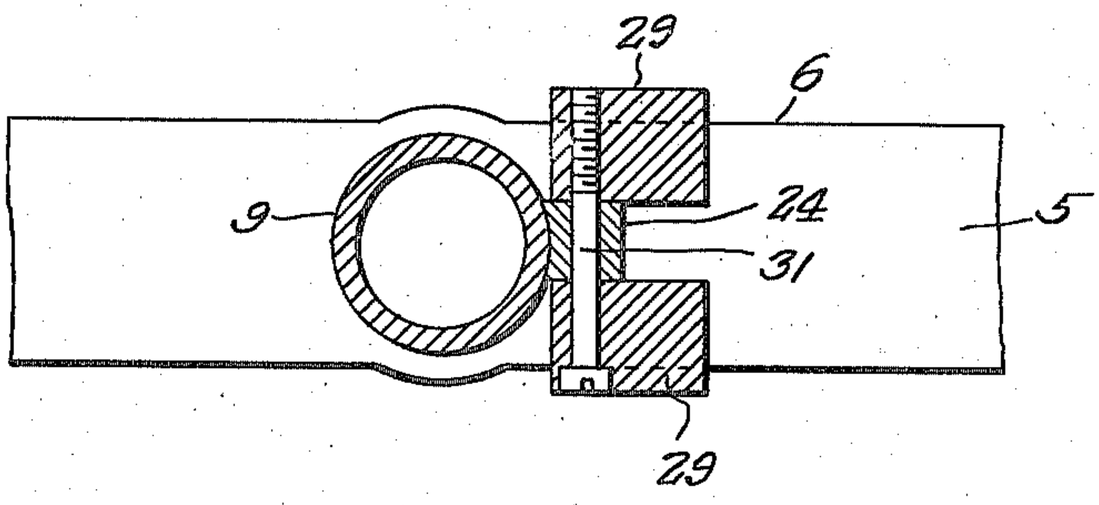


Fig. 7.



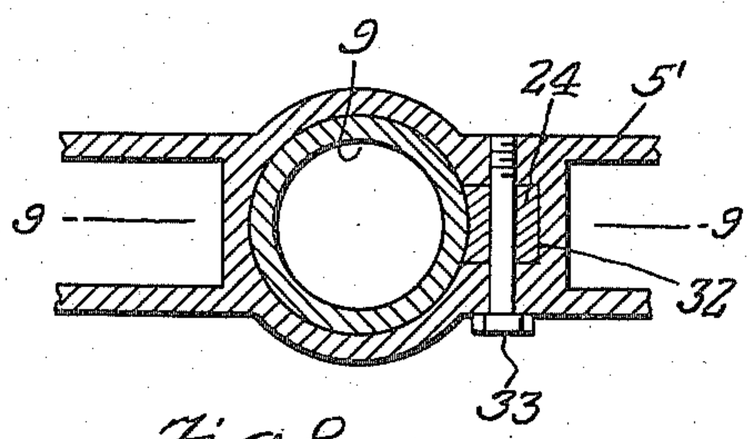


Fig. 8.

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Original Filed Dec. 28, 1936 3 Sheets-Sheet 3

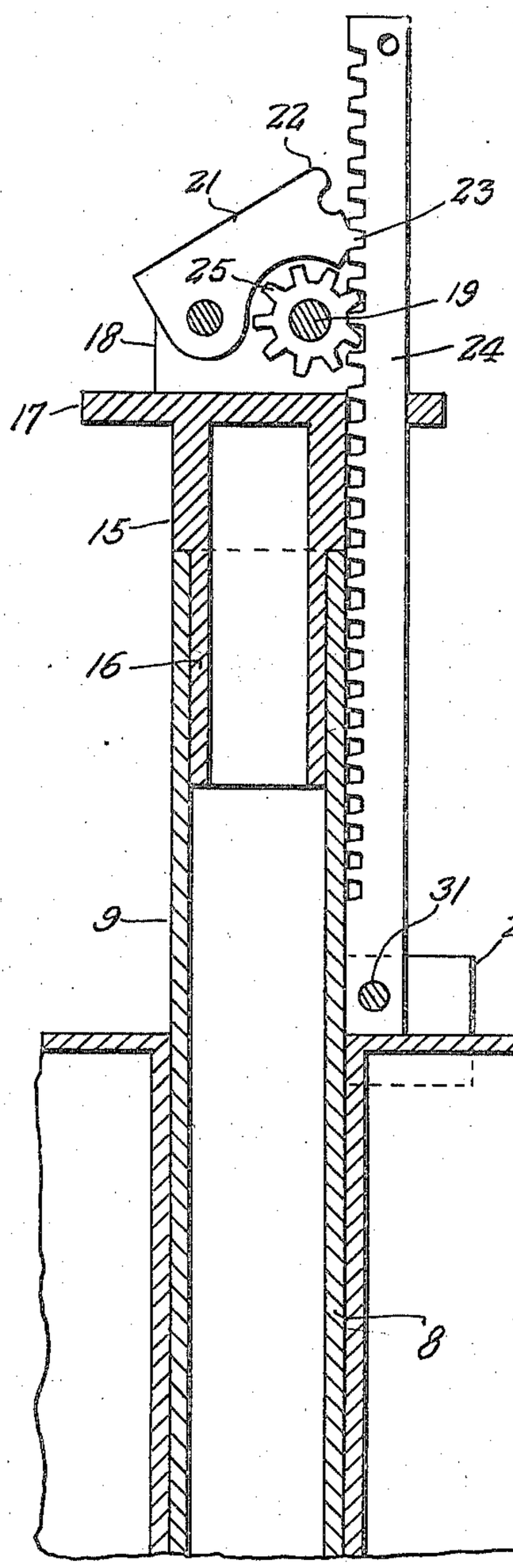

Fig. 5.

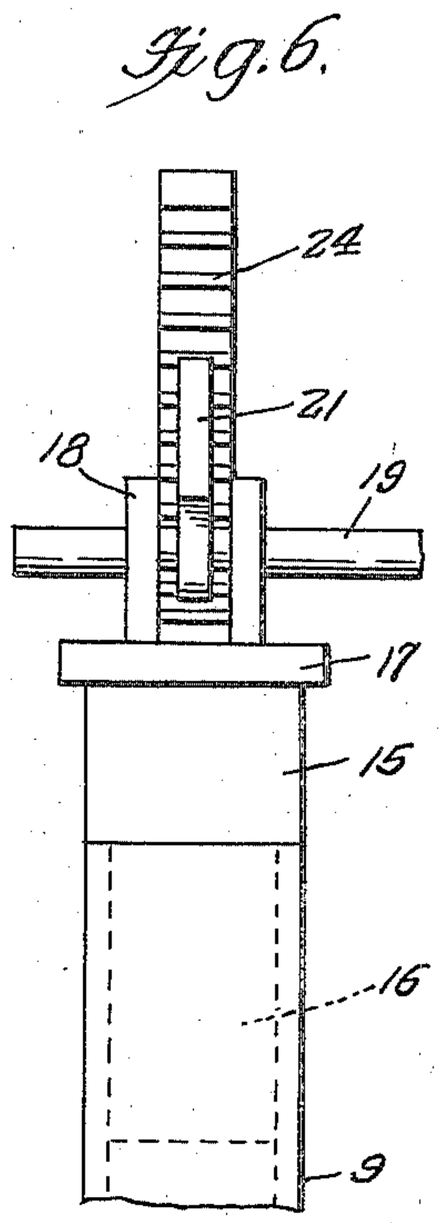

Fig. 6.

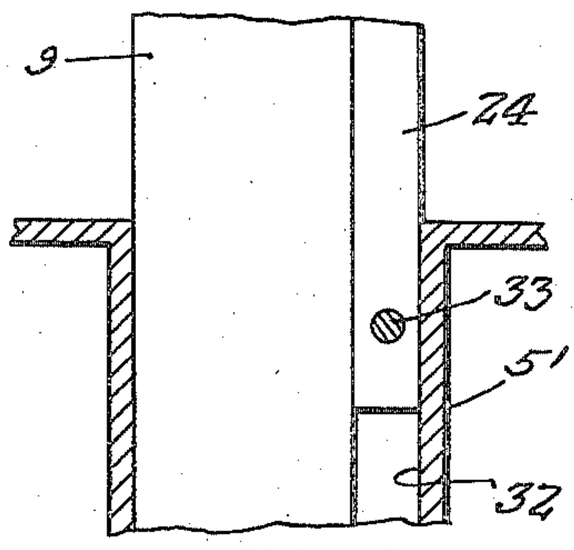

Fig. 9.

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UNITED STATES PATENT OFFICE

2,123,337

SAFETY DRILL PRESS

John Kosman and Joseph Alterman,
Brooklyn, N. Y.

Application December 28, 1936, Serial No. 117,989
Renewed May 20, 1938

3 Claims. (Cl. 77—28)

This invention appertains to new and useful improvements in drill presses and more particularly to a drill press wherein means is provided to eliminate accidents caused by dropping of the drill head while raising or lowering the same.

The principal object of the present invention is to provide a drill press wherein means is provided which will compel the attendant to have complete control over the head as it is being raised or lowered.

Another important object of the invention is to provide a drill press wherein the drill press head will be held definitely in any desired adjusted position without likelihood of dropping accidentally.

These and other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:—

Figure 1 represents a side elevational view of the press.

Figure 2 represents a top plan view fragmentarily showing the press and enlarged over the view in Figure 1.

Figure 3 is an enlarged fragmentary detailed sectional view on the line 3—3 of Figure 1.

Figure 4 is a perspective view of one of the clamp blocks.

Figure 5 is a fragmentary enlarged vertical sectional view through the adjusting means.

Figure 6 is a fragmentary side elevational view of the adjusting means.

Figure 7 is an enlarged horizontal sectional view on the line 7—7 of Figure 1.

Figure 8 is a horizontal sectional view similar to that shown in Figure 7, but showing that the clamp blocks are eliminated.

Figure 9 is a fragmentary sectional view taken substantially on the line 9—9 of Figure 8.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents the beam having the upper and lower flanges 6—7 extending longitudinally thereof and provided at its intermediate portion with the vertically extending bore 8 through which the post 9 is disposed.

At one end of the beam 5 is mounted the electric motor 10, while a vertically extending barrel 11 is provided at the opposite end of the beam 5.

Vertically disposed through the bearing 11 is the shaft 12 to the lower end of which is attached the drill head 13. At the upper end of the shaft 12 is the pulley assembly consisting of the varied size pulley spools *a*, *b*, *c* and *d*.

At the upper portion of the armature shaft of the motor 10 is the pulley assembly consisting of the pulley spools *a'*, *b'*, *c'* and *d'*, corresponding to the spools *a*, *b*, *c*, and *d*. A belt 14 is trained over corresponding spools of the pulley assembly. Thus the drill head is driven by the motor 10.

At the upper end of the post 9 is the post section 15 which is provided with a reduced extension 16 depending into the upper portion of the post 9. The section 15 is provided with a horizontally disposed plate 17 at its top above which rises the ears 18—18 through which the shaft 19 is journaled.

A pin 20 is also disposed through these ears 18—18 and through one end of the catch 21 which is provided with a finger engageable protuberance 22 and the tooth 23 which is engageable between teeth of the vertically extending rack bar 24. One end portion of the plate 17 is provided with an opening through which the rack bar 24 is slidable and as is clearly shown in Figure 5, the shaft 19 carries a gear 25 meshing with the rack bar 24 so that when the hand wheel 26 is rotated by the handle 27 or the radially extending spokes 28, the rack 24 is elevated or lowered. As can be seen in Figure 5 and also in Figure 3, the beam 5 must rise and lower with the rack bar 24 on the post 9 (which is provided with a suitable base support) by having the lower portion of the rack 24 disposed between the two clamp blocks 29—29. These clamp blocks are provided with grooved portions 30 for receiving the upper flanges 6 of the beam 5. A machine screw 31 is disposed through one of the blocks 29 and threaded into the other block 29 after passing through the lower portion of the rack 24 so that the lower portion of the rack is positively secured to the beam 5.

A slightly modified form of the invention is shown in Figures 8 and 9 wherein the beam 5 is provided with a pocket 32 into which the lower portion of the rack 24 is disposed, and a pin or screw 33 is disposed through the beam and through the lower portion of the rack to positively secure the rack bar to the beam. Thus it can be seen, that by rotating the shaft 19 the beam 5 carrying the drill head 13 can be raised or lowered as desired and in view of the swivelled connection of the post section 15 with the post 9 and the fact that the beam 5 can rotate on the post, the drill head can be moved to any radial position with respect to the post 9.

While the foregoing specification sets forth the invention in the specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without

departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:—

1. A drill press comprising a post, a beam horizontally disposed and rotatably mounted on the post, a motor mounted on one end portion of the beam, a drill head mounted on the opposite end of the beam, drive means between the motor and the drill head, a vertically disposed rack secured to the beam, a swivelled member at the upper end of the post, a shaft mounted for rotation on the swivelled member, a pinion on the shaft, said pinion meshing with the rack, and a pivotal dog mounted on the swivelled member and engaged with the rack.

2. A drill press comprising a post, a beam horizontally disposed and rotatably mounted on the post, a motor mounted on one end portion of the beam, a drill head mounted on the opposite end of the beam, drive means between the motor and the drill head, a vertically disposed rack secured to the beam, a swivelled member at the upper end of the post, a shaft mounted for rotation on the swivelled member, a pinion on the shaft, said pinion meshing with the rack, said swivelled member being provided with a laterally disposed portion having a guide opening therein through which the rack is slidable.

3. In a drill press, a post, a press supporting beam having a vertical bore therein receiving the post, said beam provided with lateral flanges at the upper edges thereof, a swivelled member at the top of the post, a vertically movable rack bar, a gear rotatably mounted on the swivelled member and meshing with the rack bar, and a divisible clamp at the lower end of the rack bar for gripping the flanges of the said beam.

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