

May 18, 1937.

E. W. WORDEN

2,081,079

DRILL PRESS

Filed June 24, 1936

Fig. 2

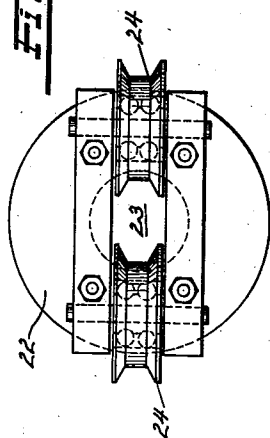


Fig. 3

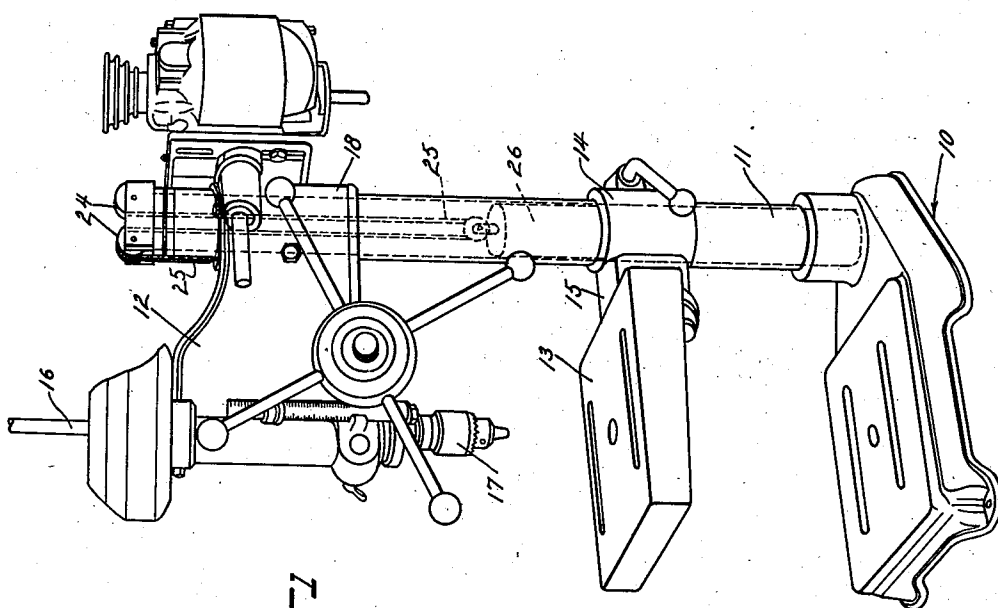
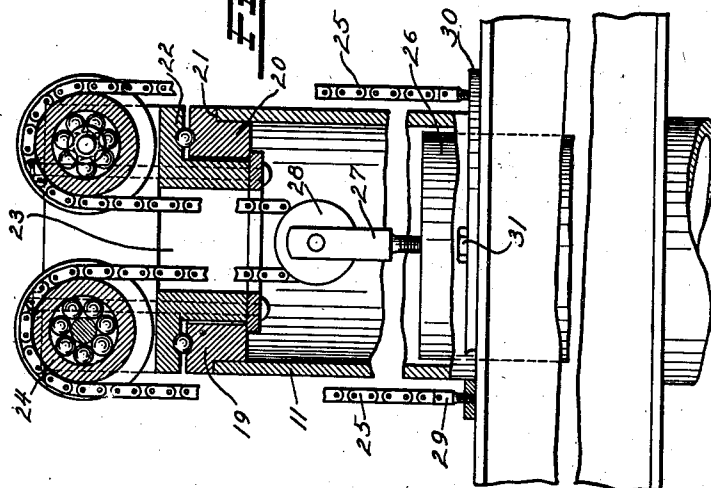


Fig. 1

Enoch W. Worden

INVENTOR

BY *Victor J. Evans & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,081,079

DRILL PRESS

Enoch W. Worden, Flint, Mich.

Application June 24, 1936, Serial No. 87,072

1 Claim. (Cl. 77—36)

The invention relates to a drill press and more especially to a drill press attachment.

The primary object of the invention is the provision of an attachment of this character, wherein the same when applied to the drill press will support the head thereof so that the same can be turned and is counterbalanced thus enabling the proper setting of the drill to the work and in this manner assuring perfect placement of such drill.

Another object of the invention is the provision of an attachment of this character, wherein the same is of such construction that it can be applied to any type of round column drill press or other machine having a hollow vertical column for the support of the tool in the working thereof and such attachment will counterbalance the head supporting the tool so that it can swing in a horizontal path and be raised and lowered with respect to a work table as may be provided with the machine and thus the tool proper can be properly positioned or located with respect to the work to be acted upon thereby.

A further object of the invention is the provision of an attachment of this character, which is simple in its construction, thoroughly reliable and efficient in its operation, readily and easily applied to and removed from a drill press or other machine having a vertical column of hollow formation, convenient for adjustment of the tool head, strong, durable, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing, which discloses the preferred embodiment of the invention and pointed out in the claim hereunto appended.

In the accompanying drawing:

Figure 1 is a perspective view of a drill press showing the attachment constructed in accordance with the invention applied for counterbalancing the tool head of such press.

Figure 2 is an enlarged top plan view of the attachment.

Figure 3 is a fragmentary elevation partly in vertical section of the said press.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, the drill press in this instance comprises a base 10 from which rises a vertical hollow column 11 carrying

a press head 12 and a work support 13, respectively. The support 13 is adjustably fastened to the column 11 by a clamp sleeve 14 on the end of an arm 15 for said support. Thus the support 13 can be raised and lowered on the column 11 or shifted laterally in a horizontal direction according to the requirements of work to be operated upon. The head 12 which is equipped with a rotary spindle 16 having at its lower end a tool chuck 17 which is mounted upon the column 11 through the instrumentality of a sleeve-like bearing 18 which snugly embraces the said column so that the press head 12 can be raised and lowered and turned on the column 11 for the setting of a tool as held within the chuck 17.

The attachment comprises a ball cone ring 19 having a reduced portion 20 which telescopes in the upper end of the column 11 and provides a rest shoulder 21 engageable with the upper edge of said column which latter is open at this upper end. Rotatably fitted on the cone ring 19 is a rotatable pulley block 22 having the open center 23 while suitably journaled within this block 22 are opposed spaced guide pulleys 24 over which is trained a length of chain 25, the intermediate portion of the latter being extended through the center opening 23 and has suspended therefrom within the column a counterbalancing weight 26 which is of a size to freely slide or move within this column. The weight 26 has fitted centrally therein a bearing 27 carrying a pulley 28 about which the intermediate portion of the said length of chain 25 is trained. The ends of the length of chain 25 through the medium of terminal screws 29 are fastened to a ring 30 which is bolted at intervals as at 31 to the top of the sleeve-like bearing 18 concentrically about the column 11. Thus the press head 12 will be counterbalanced by the weight 26 so that the said head 12 can be turned in a horizontal plane or raised and lowered on the column 11 for the setting of a tool properly with a piece of work when upon the support 13. The turn table 22 can readily rotate on the ring 19 in conformity with the swing in a horizontal direction of the head 12.

The weight 26 suspended by the length of chain 25 trained over the pulleys 24 and 28 will balance the head 12 to hold it in its raised or lowered position on the column 11 under adjustment of such head.

What is claimed is:

The combination with a machine having a stationary vertical tubular column and a head slidably and rotatably fitted on said column, of an

attachment comprising a ball cone ring fixedly fitted in the upper end of the column, a pulley block open at its center and having a reduced lower end rotatably received in the cone ring, pulleys journaled in the block at opposite sides of its open center, a length of chain trained over the pulleys with its ends connected to the head at diametrically opposite sides of the column and

the intermediate portion of said chain depending between the pulleys into the column, and a weight within the column and having a pulley with the intermediate portion of the chain trained thereover for the suspension of the said weight within said column by the intermediate portion of the chain.

ENOCH W. WORDEN.