A. DAVIS.

DRILLING MACHINE TABLE.

APPLICATION FILED DEC. 8, 1908.

935,470. Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.

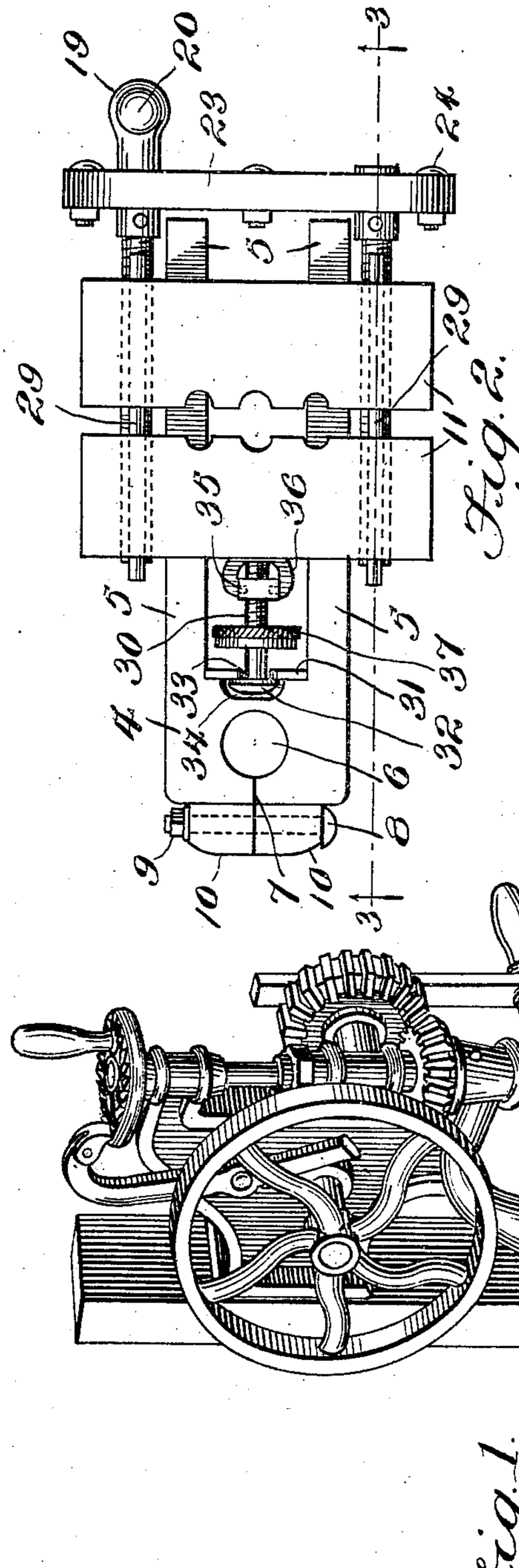

Fig. 2.

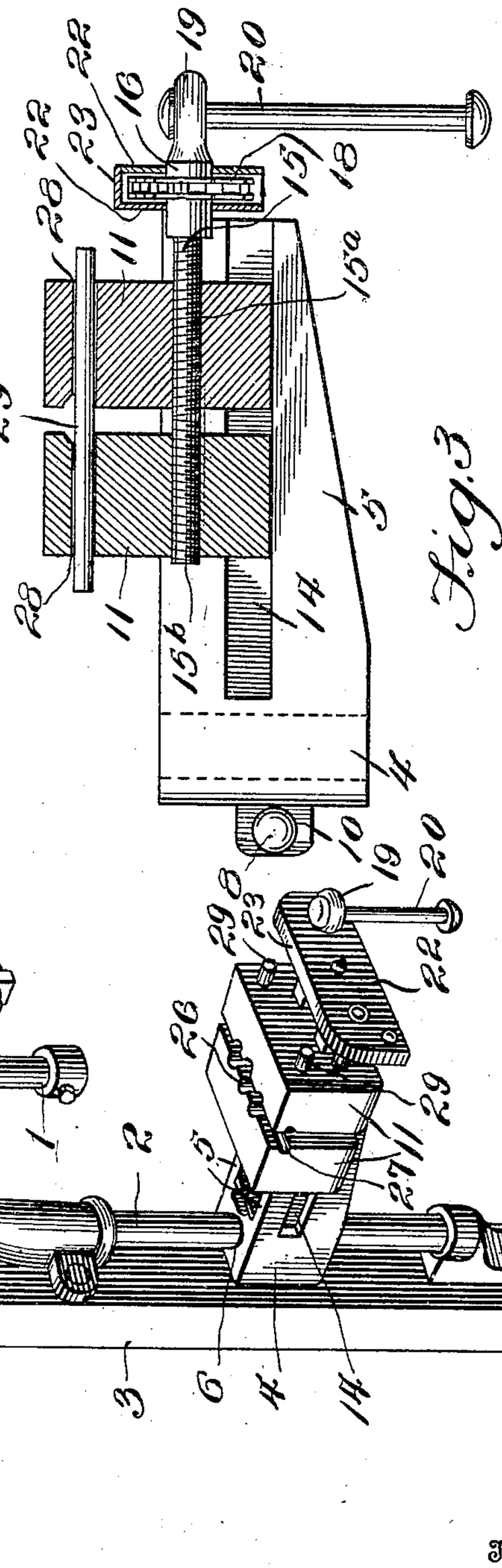

Fig. 3

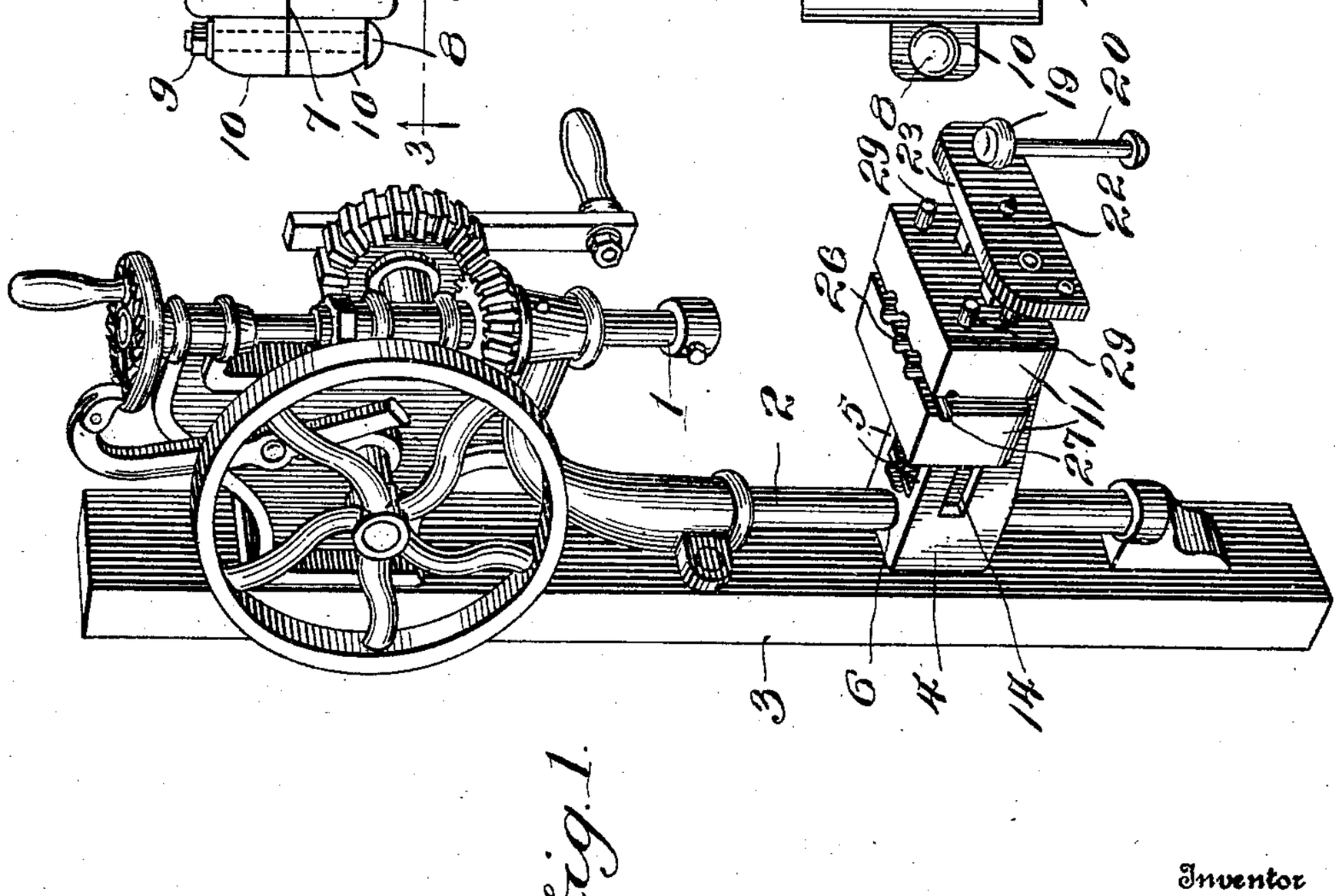

Fig. 1.

Witnesses

J. T. L. Wright

J. F. Byrne.

Inventor

Andrew Davis

By Victor J. Evans.

Attorney

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2 SHEETS—SHEET 2.

Fig. 4

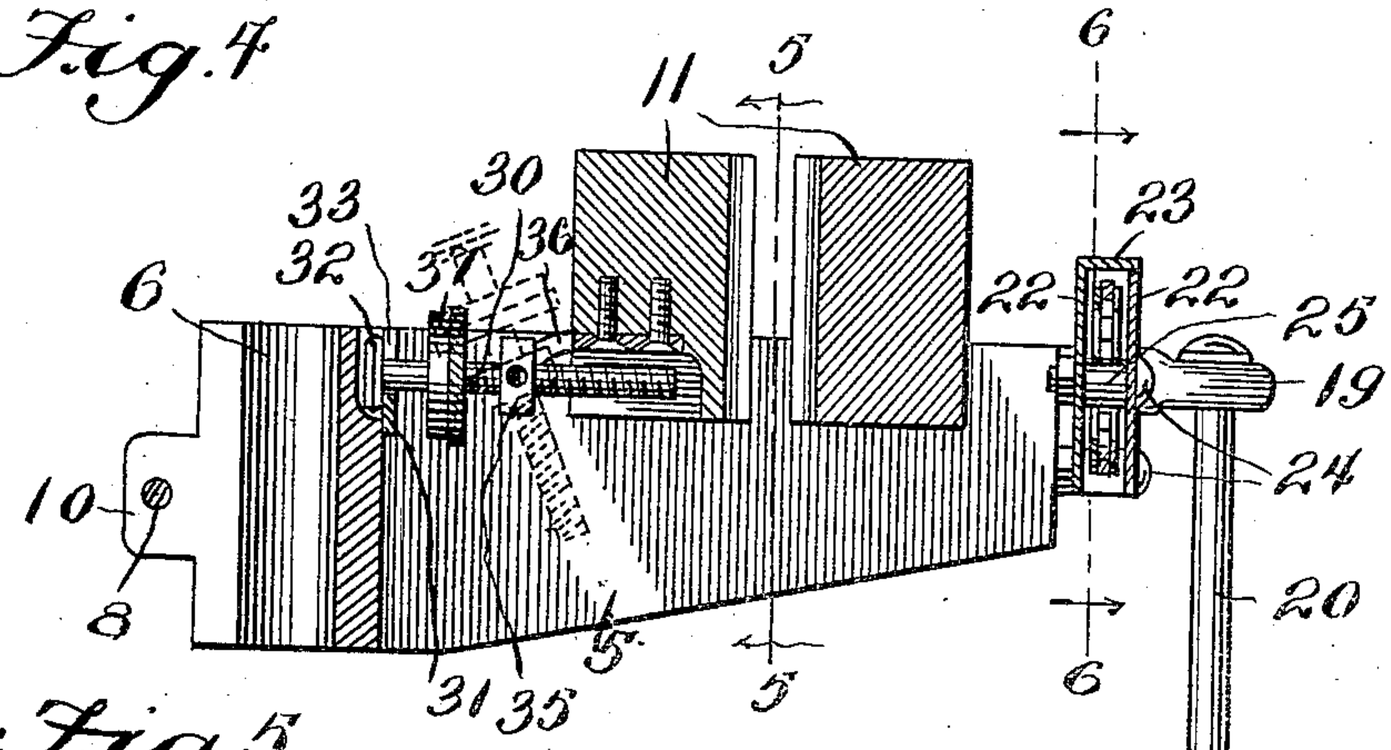


Fig. 5.

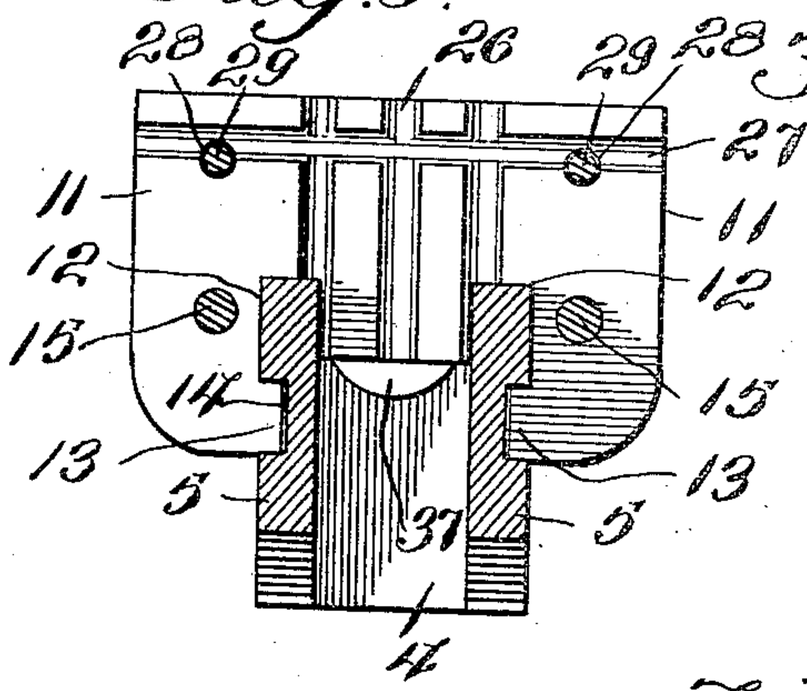


Fig. 6.

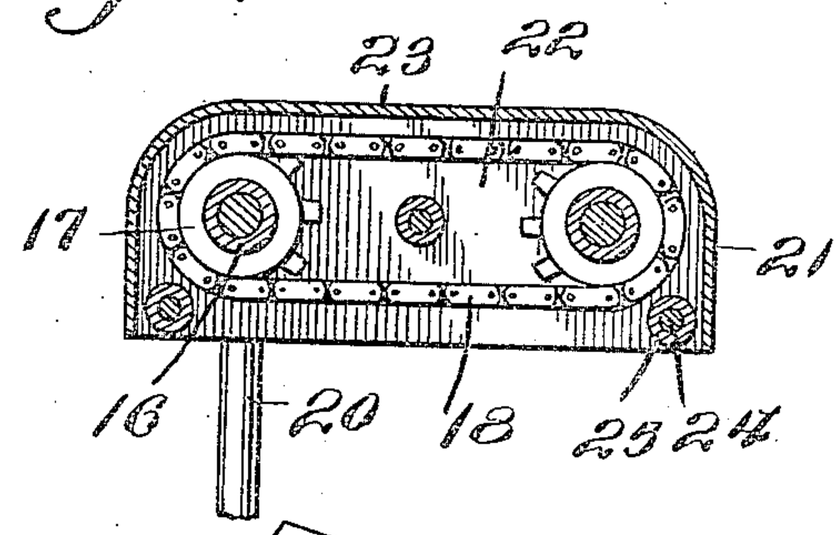


Fig. 7.

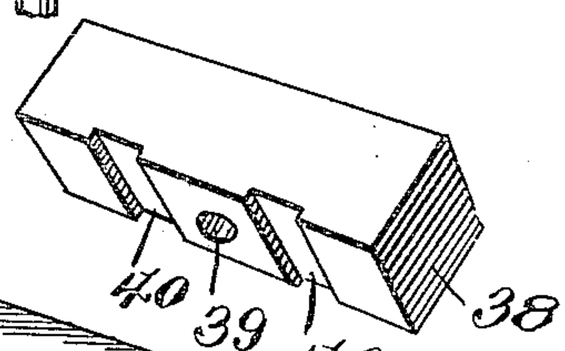
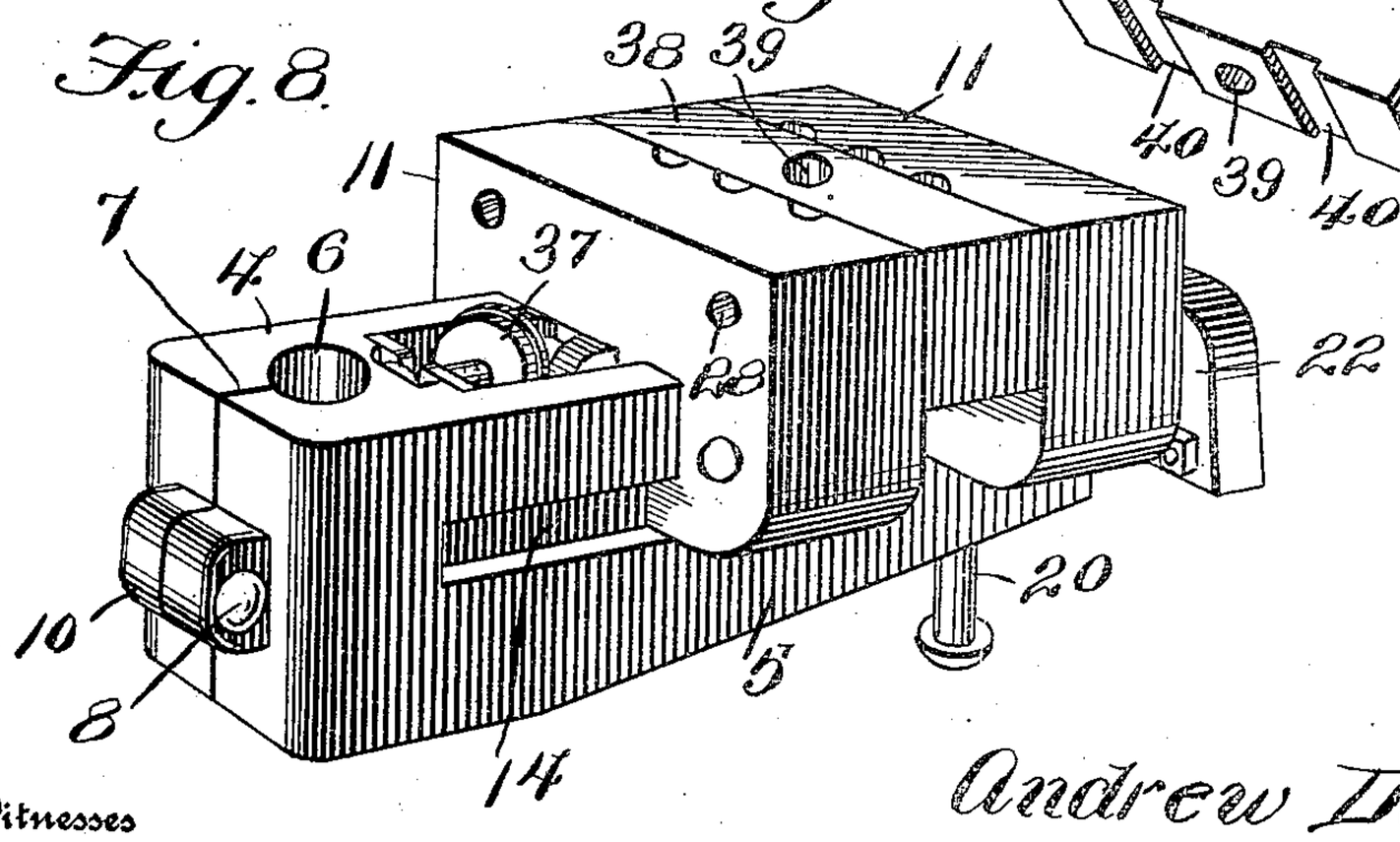


Fig. 8.



Witnesses

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J. F. Byrne.

Inventor

Andrew Davis

By Victor J. Evans,

Attorney

UNITED STATES PATENT OFFICE.

ANDREW DAVIS, OF MILLINOCKET, MAINE.

DRILLING-MACHINE TABLE.

935,470. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed December 8, 1908. Serial No. 466,535.

To all whom it may concern:

Be it known that I, ANDREW DAVIS, a resident for fifteen years of the United States, residing at Millinocket, in the county of Penobscot and State of Maine, have invented new and useful Improvements in Drilling-Machine Tables, of which the following is a specification.

My invention relates to improvements in tables of drilling machines.

The primary object of the invention is the provision of a drilling machine table in the use of which a piece of work is firmly held in proper position with relation to the drill, the invention comprehending a table which includes a pair of relatively adjustable clamping jaws constituting a vise, the upper surfaces of the jaws constituting the table.

A further object of the invention is the provision of a drilling machine table wherein the vise may be adjusted to place the work in proper position with relation to the drill.

A still further object of the invention is the provision of a drilling machine table wherein the superficial area of the table may be increased or decreased.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing, wherein:—

Figure 1 is a perspective view of a drilling machine equipped with a table constructed in accordance with my invention. Fig. 2 is a top plan view of the table. Fig. 3 is a sectional view taken on the vertical plane indicated by the line 3—3 of Fig. 2, looking in the direction indicated by the arrows. Fig. 4 is a sectional view taken on a vertical plane extending centrally and longitudinally through the table. Fig. 5 is a sectional view taken on a vertical plane indicated by the line 5—5 of Fig. 4, looking in the direction indicated by the arrows. Fig. 6 is a sectional view taken on the vertical plane indicated by the line 6—6 of Fig. 4. Fig. 7 is a perspective view of the block in the use of which the superficial area of the table is increased to its maximum degree, and Fig. 8 is a perspective view of the table illustrating the application of the block.

Referring to the drawings by reference numerals, 1 designates the drill spindle and 2 the table shaft of a drilling machine of a well-known type. The drilling machine is secured in the usual manner to a support 3.

My improved table comprises a support which includes a head 4 and a pair of parallel arms 5 which are disposed in relative spaced relation. The head 4 is provided with an opening 6 for the reception of the table shaft 2, and it is split as at 7 to permit the diameter of the opening 6 to be increased or decreased. The diameter of the opening 6 may be increased or decreased through the medium of a bolt 8 and nut 9, the bolt being carried by ears 10 formed on the head 4. A vise, which comprises a pair of relatively adjustable clamping jaws 11, is adjustably mounted upon the support. The clamping jaws 11 are provided in their lower surfaces with recesses 12 which slidably receive the upper edges of the arms 5. The clamping jaws are also provided with inwardly directed lugs 13 which slidably engage in grooves 14 located in the outer surfaces and extending longitudinally of the arms 5. The connection between the clamping jaws 11 and the arms 5 is such that the vise may be adjusted upon the support to place the work in proper position with relation to the drill, and such that the jaws may be relatively adjusted to clamp or release a piece of work. The connection is also such that the vise is held against accidental displacement. The clamping jaws may be relatively adjusted through the operation of a pair of screws 15 having threaded engagement with the jaws. Each of the screws 15 is provided with right-hand threads 15^a and left-hand threads 15^b, the right-hand threads of the screws engaging one jaw and the left-hand threads the other jaw of the vise, whereby the rotation of the screws will quickly move the jaws in the direction of or away from each other. Each of the adjusting screws 15 is provided with a head 16 upon which is mounted a sprocket wheel 17, a sprocket chain 18 being mounted upon the sprocket wheels. The connection between the adjusting screws 15 is such that the operation of one screw will impart a similar simultaneous operation to the other screw, resulting in the relative adjustment of the clamping jaws 11. In order to permit the operation of one of the adjusting screws 15 one of the heads 16 is extended and provided with an apertured extension 19 which slidably receives a lever 20. The sprocket wheel 17 and sprocket chain 18 are housed by means of a casing 21 carried

by the heads 16. The casing comprises side walls 22 and an end wall 23, the end wall being formed integrally with one of the side walls. The side walls are secured together by means of bolts 24, sleeves 25 being mounted upon the bolts to space the walls.

The active faces of the clamping jaws 11 are provided with a plurality of vertical coinciding grooves 26, and the active face of each jaw is provided with a horizontal groove 27. The grooves 26 and 27 permit round work to be secured in the vise. The clamping jaws 11 are also provided with horizontal openings 28 to permit the application of pins 29 providing a work rest, the work resting upon the pins being secured against movement by the jaws.

The vise may be adjusted to place the work in proper position with relation to the drill through the operation of a screw 30, which has threaded engagement with one of the clamping jaws 11 and which has a detachable connection with the head 4 of the support. The detachable connection between the screw 30 and the head 4 of the support is established through the medium of a plate 31 and a head 32 formed upon the screw. The plate 31 is secured to the inner side of the head 4 and is provided with a recess 33 for the reception of the screw 30, the head 32 fitting in a recess 34 formed in the inner side of the head 4. The screw 30 has threaded engagement with a collar 35 pivotally mounted in a yoke 36 which is secured to one of the clamping jaws 11. As the sleeve 35 is pivotally mounted in the yoke 36, the screw may be thrown into and out of engagement with the head 4, (see Fig. 4 of the drawings). A milled head 37 is fixed upon the screw 30, providing means by which the screw may be rotated to adjust the vise on the support.

In practice, after the work is secured in the vise, the vise is adjusted upon the support to place the work in proper position with relation to the drill. The support is also capable of adjustment. As the vise is adjustable upon the support the work may be placed on either side of the drill. Round work is clamped in a pair of the grooves 26 or in the grooves 27. Flat work is clamped between the active faces of the jaws 11 and rests upon the pins 29. The upper surfaces of the jaws 11 form a table and when it is desired to use the table the jaws are adjusted to position their active faces in contact with each other. When it is desired to increase the superficial area of the table, a block 38 is clamped between the jaws 11, the block being provided with a central opening 39 and grooves 40. The grooves 40 receive the upper edges of the arms 5 of the support whereby the block is held against movement transversely of the arms.

It should be apparent from the above description, taken in connection with the accompanying drawing, that I provide a drilling machine table which, in use, will firmly hold the work in proper position with relation to the drill, and one which may be readily and quickly adjusted to properly position the work. It should also be apparent that the vise of the table may be readily and quickly operated to clamp and release a piece of work, and that the vise may be used as a table which may be increased or decreased in use.

While I have described the method of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired as are within the scope of the appended claim.

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

In a drilling machine table, a support, jaws directly mounted upon the support, means by which the jaws may be relatively adjusted, a yoke secured to one of the jaws, a collar pivotally mounted upon the yoke, a plate secured to the support, a screw having threaded engagement with the collar and a detachable engagement with the plate, and a milled head fixed upon the screw.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW DAVIS.

Witnesses:
JOSEPH HAYES,
CLINTON C. STEVENS.