

(No Model.)

2 Sheets—Sheet 1.

J. W. HAWKINS.
DRILL PRESS.

No. 585,384.

Patented June 29, 1897.

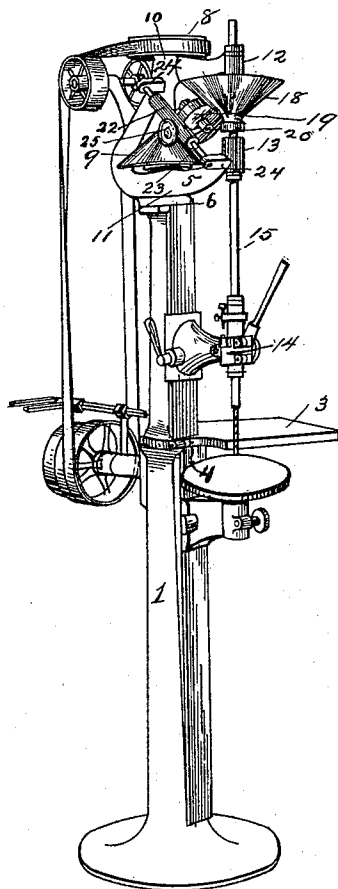


Fig. 1.

Fig. 3.

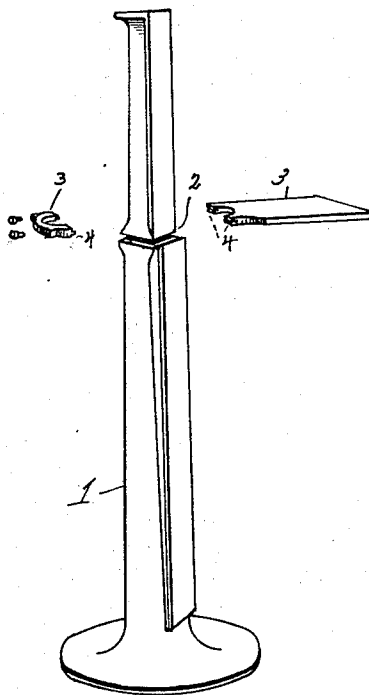
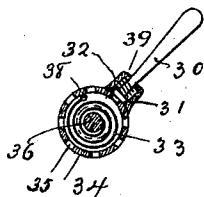


Fig. 4.



Witnesses
Geo. B. Kane
Geo. O. Willet.

Inventor
J. Wesley Hawkins
By Wm. M. Monroe
Attorney

(No Model.)

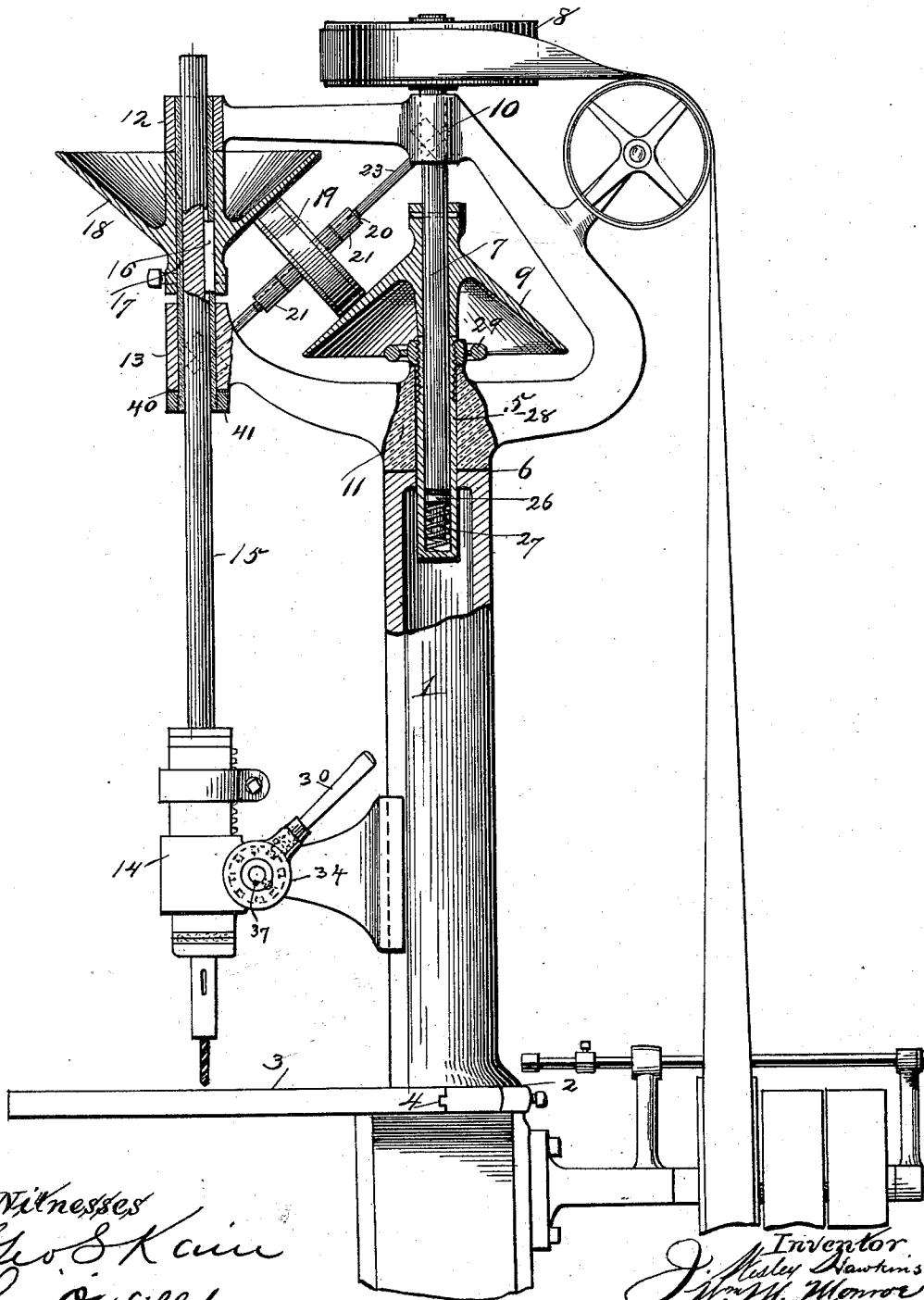
2 Sheets—Sheet 2.

J. W. HAWKINS.
DRILL PRESS.

No. 585,384.

Patented June 29, 1897.

Fig. 2.



Witnesses
Geo. S. Kain
Geo. O. Willet

Inventor
J. W. Hawkins
Wm. H. Monroe
Attorney

UNITED STATES PATENT OFFICE.

JOHN WESLEY HAWKINS, OF KENT, OHIO.

DRILL-PRESS.

SPECIFICATION forming part of Letters Patent No. 585,384, dated June 29, 1897.

Application filed June 13, 1895. Serial No. 552,624. (No model.)

To all whom it may concern:

Be it known that I, JOHN WESLEY HAWKINS, a citizen of the United States, and a resident of Kent, county of Portage, State of Ohio, have invented certain new and useful Improvements in Drill-Presses, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in drilling-machines; and the objects of the invention are to provide means for obtaining the maximum variation of speed in the drill-shaft with the minimum complication of mechanism.

My invention also has reference to the construction of standard and head and drill-shaft bearings. To obtain this result, I employ the friction-cones and intermediate roller with the combination and arrangement of the various parts and construction of details, as hereinafter described, shown in the accompanying drawings, and more specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the device, and Fig. 2 is a vertical elevation with upper portions of the figure in vertical central section. Fig. 3 is a detail of the standard, and Fig. 4 of the drill-feeding device.

In the figures, 1 is the standard, cast in one piece and annularly slotted at 2 to receive the drill-platform 3, which is divided at 4 to inclose the slot. 5 is a head securely bolted to the top of the standard at 6 and supporting the vertical driving-shaft 7, to which are secured the pulley 8 and friction-cone 9, inclosed between vertical bearings 10 and 11.

Upon bearings 12 and 13 and adjustable bearing 14 is supported the drill-shaft 15, moving upon the spline 16, secured to the sleeve 17. Between the bearings 12 and 13 is secured the inverted cone 18, having the same angle of revolution as cone 9, and since their axes of revolution are parallel their opposite surfaces will be parallel. Between these cones is secured the disk 19, mounted upon the spindle 20 in bearings 21 upon the sleeve 22. This sleeve is movable upon the inclined shaft 23, parallel with the opposite surfaces of the cones, and secured in the bearings 24 upon

the head 5. A set-screw 25 secures the sleeve movably upon the shaft 23, and the disk can be readily moved up and down the cones by hand while in engagement with the peripheries of both.

It will be seen that when the disk engages the smaller portion of the driving-cone 9 near its apex a slow movement will be given the disk, which in turn will transmit it to the broadest portion of the periphery of the cone 18, and hence a very slow movement will be given to the drill-shaft. Again, in a central position an equal movement of both cones of moderate speed will be obtained and transmitted to the drill-shaft; but when the disk is engaged by the lower and broader edge of the driving-cone it will engage the cone 18 near its apex and thus transmit a very rapid movement to the drill-shaft.

It will also be obvious that any intermediate degree of speed can be obtained at pleasure by this means from fast to slow by moving the disk up and down the cones.

In order to vary the tension of the disk upon the cones and to increase it when great power is required, the driving-shaft is supported upon the foot-rest 26, supported by the intermediate coiled spring 27 in the sleeve 28, which is screw-threaded at its upper end and provided with the wheel-nut 29, which rests upon the bearing 11.

By means of the spring the pressure of the disk is maintained constant and by means of the sleeve and nut may be increased or diminished at pleasure.

A brass washer 40 between the collar 41 and bearing 13 sustains the thrust of the disk 19 against the cone 18.

In Fig. 4 is seen a vertical section through the gear-shaft and operating-handle for raising and lowering the drill-shaft. In this figure, 30 is the handle, provided with collar 31, against which the spring 32 presses to make the inner extremity of the handle-bar engage the notches 35 in the disk 34, which is keyed at 37 to the shaft 36. 33 is the counterbalance-spring, which is secured to the disk at 38 and at the other end to the shaft 36. Bearing 39 supports the handle on the periphery of the disk. The advantages of this form of device are that the handle can be adjusted to any angle on the shaft without removal,

thus being always accessible to the operator when at work.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a drill-press, in combination with the head 5, the parallel driving-shaft 7 and drill-shaft 15, having cones 9 and 18 reverse in position and with opposite surfaces parallel, the intermediate disk 19 bearing upon the parallel surfaces of the cones, and the adjustable bearing for the driving-shaft consisting of foot-rest 26 spring 27 screw-threaded sleeve 28 and wheel-nut 29 substantially as and for the purposes described.

2. In a drill-press, in combination with the head 5, the driving-shaft and drill-shaft having cones 9 and 18 reverse in position and having opposite surfaces parallel, the intermediate disk 19 mounted on spindle 20 upon sleeve 22 having set-screw 25, and the adjustable bearing for the driving-shaft, consisting

of foot-rest 26, spring 27, screw-threaded sleeve 28 and wheel-nut 29, substantially as shown and for the purposes described.

3. In a drill-press, in combination with the head 5 and integral standard 1 annularly slotted to receive a removable platform, the parallel driving-shaft 7 and drill-shaft 15, having cones 9 and 18 reverse in position and with opposite surfaces parallel, the intermediate disk 19 bearing upon the parallel surfaces of the cones 9 and 18, and the adjustable bearing for the driving-shaft, consisting of foot-rest 26 spring 27 screw-threaded sleeve 28 and wheel-nut 29, substantially as and for the purposes shown and described.

In testimony whereof I hereby set my hand on the 8th day of May, 1895.

J. WESLEY HAWKINS.

Witnesses:

WM. M. MONROE,
GEO. O. WILLET.