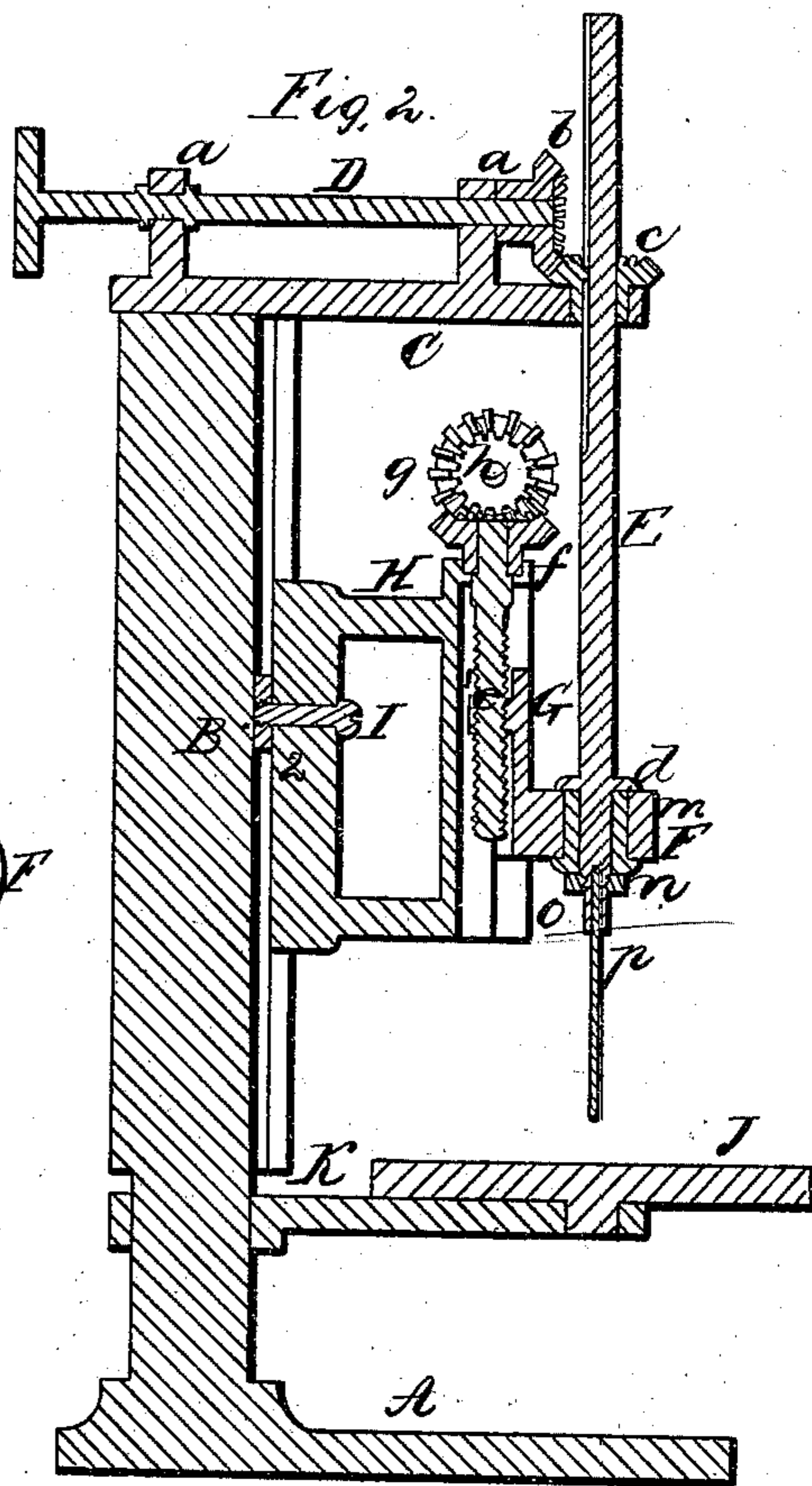
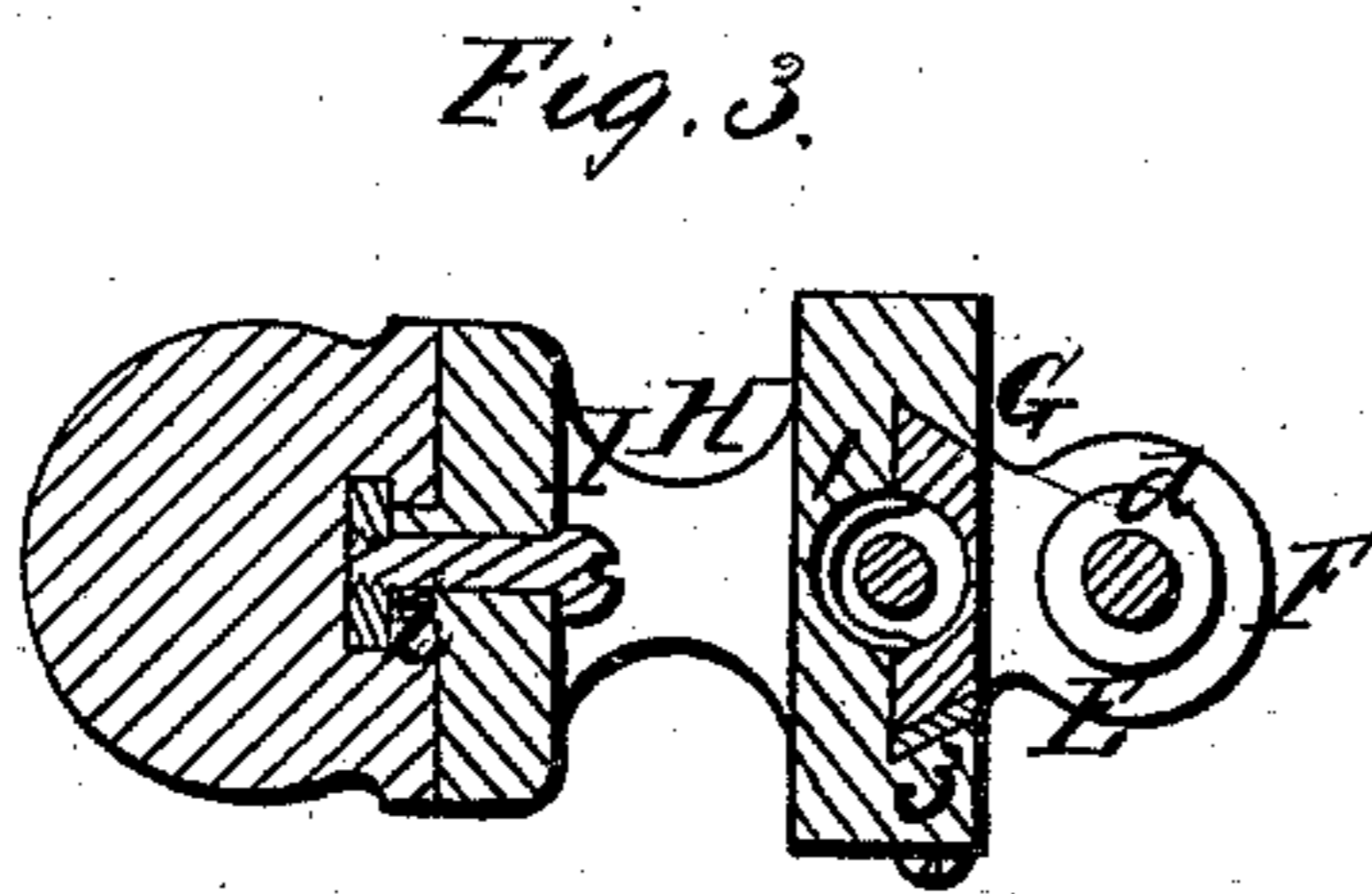
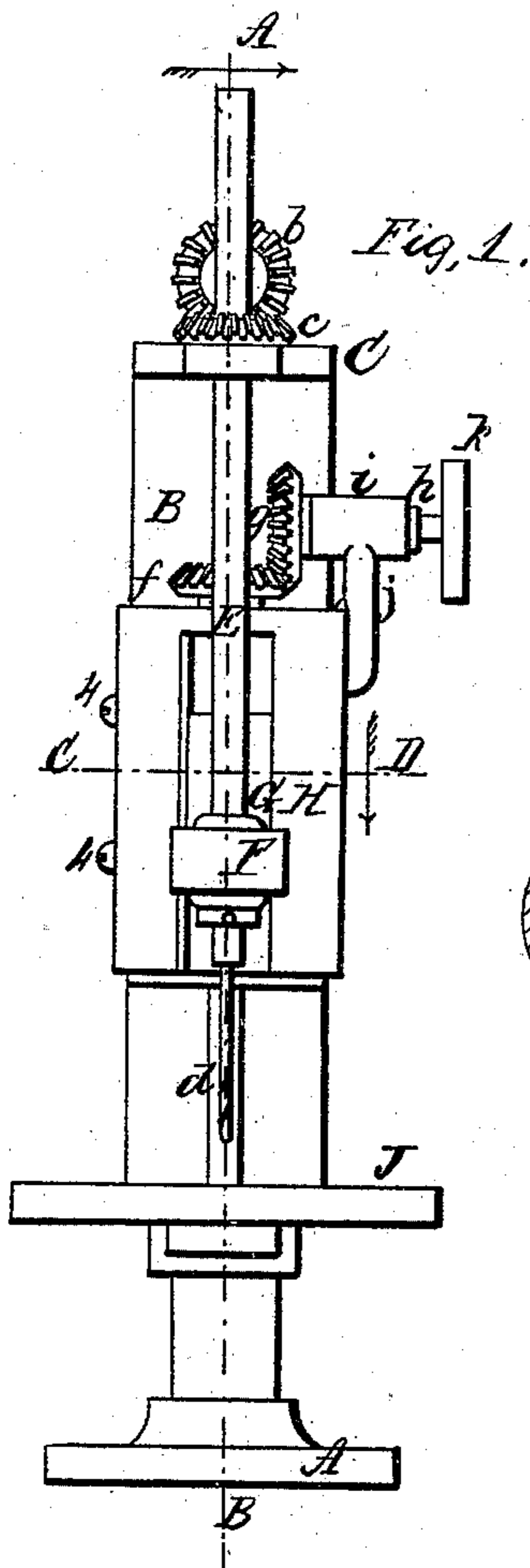


P. Blaisdell,

Metal Drill,

N^o 66,672.

Patented July 16, 1867.



Witnesses;
Thos. H. Dodge,
Geo H. Miller

Inventor;
Parritt Blaisdell

United States Patent Office.

PARRITT BLAISDELL, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 66,672, dated July 16, 1867.

IMPROVEMENT IN UPRIGHT DRILLS.

The Schedule referred to in these Letters Patent and making part of the same.

KNOW ALL MEN BY THESE PRESENTS:

That I, PARRITT BLAISDELL, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Upright Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a front view of an upright drill with my improvements applied thereto.

Figure 2 represents a longitudinal central section on line A B, fig. 1; and

Figure 3 represents a cross-section on line C D, same figure.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

In the drawings the part marked A is the base of the frame B, to the top of which is cast or fastened the arm C, upon which are placed or fastened the bearings *a a*, in which the driving-shaft D runs, and upon the end of which is gear *b*, which takes into gear *c*, which is also supported by arm C, as fully indicated in the drawings. For the purposes of enabling the spindle E to be moved longitudinally when in motion, gear *c* is provided with a spline, which fits into a slot in the drill-spindle E, the lower end of which is provided with a tight collar, *d*, which rests upon the top of the stand F attached to the sliding-head G, which is moved up and down by the screw-spindle or shaft *e* which passes through a projection on, or a nut, *l*, attached to the back of the sliding-head G. The screw-spindle *e* has a gear, *f*, which takes into another gear, *g*, on the end of shaft *h*, which is supported in a bearing, *i*, on the piece *j* attached to the adjustable frame H. A hand-wheel, *k*, is placed upon the end of shaft *h*. A steel collar-piece, *m*, having a shoulder, *n*, is fitted upon the spindle E and placed upon the end of shaft *h*. The lower end of spindle E is turned down somewhat, and has a screw-thread cut thereon to receive a nut, *o*, which, in connection with a collar, *d*, keeps the drill-spindle E from longitudinal play, so that the drill *p* is kept from dropping as soon as its point breaks through the article being bored, upon the table J, which is supported by arm K attached to frame B. In the upright drills in common use the points of the drills are often broken in this way, in consequence of "back-lash" in the spindle. By the use of nut *o* the lower bearing of the spindle can be kept so adjusted as to prevent all such breakages. The frame H has a tongue, *2*, which enters a slot or groove in the frame B, which retains the frame in a vertical position; while, by means of a bolt, *l*, it can be held in any desired position as respects the frame B. The back of head-piece G is made in dove-tail form to fit a dove-tail groove in the frame H. A packing-piece, *3*, is inserted upon one side of the dove-tail part G, so that by means of screws *4 4* said packing-piece can be forced in to compensate for any wear of the parts.

It will be observed that as the drill-spindle is fed down to the work the lower bearing moves down with it, and consequently the lower end of the spindle is kept steady, which renders the action of the drill more perfect than if the end of the spindle was not thus supported.

I have shown my improvements applied to an upright drill; but they may be applied to a drill in an inclined or horizontal position. The sliding head-piece G may have a rack attached to it so as to be moved up and down by a pinion, the shaft of which rests and turns in bearings attached to frame H.

Having described my improvements in drills, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the sliding head-piece G and bearing F, of the upright spindle E, provided with the collars *d m* and nut *o*, substantially as set forth.
2. The combination, with the adjustable frame H and spindle E, of the sliding head-piece G, screw-shaft *e*, collars *m d*, and nut *o*, constructed and arranged substantially as and for the purposes set forth.
3. The combination of the sliding head-piece G and bearing F with the adjustable frame H and spindle E, arranged as and for the purposes set forth.

PARRITT BLAISDELL.

Witnesses:

THOS. H. DODGE,

GEO. H. MILLER.