

United States Patent Office.

WILLIAM D. GRIMSHAW, OF NEWARK, NEW JERSEY.

Letters Patent No. 68,362, dated September 3, 1867; antedated August 18, 1867.

IMPROVED DRILLING MACHINE.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM D. GRIMSHAW, of the city of Newark, in the county of Essex, and State of New Jersey, have invented, made, and applied to use, a certain new and useful improvement in Drilling Machines; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a side elevation of the drilling machine complete.

Figure 2 is a plan of the same.

Figure 3 is an elevation of the bed-plate and drill-holder; and

Figure 4 is a detached plan of the bed-plate and holding-slide.

Similar marks of reference denote the same parts.

My improved drill is so arranged that it may be worked by the foot or by a belt, and the drill is kept up by a lever and weight or spring, so as to be out of the way while the article to be drilled is being adjusted upon the bed; but said lever also is employed by the attendant for forcing the drill to its work. I mount the bed for receiving the article to be drilled upon an adjustable slide that is clamped to a vertical standard at any desired height, and the bed can be slidden nearer to or further from the said standard, as occasion requires, in presenting the article to be drilled to the action of the tool, or said slide can receive a vise for holding any article, or the slide can be turned aside and the bed or vise be used for any ordinary purposes.

In the drawing, *a* is a three-cornered foot to the standard *b*. *c* is a hollow arm carrying the driving-shaft, at one end of which is a truncated cone of pulleys, *d*, which also acts as a fly-wheel. These pulleys are to be driven by a belt to the pulleys *e e*, or by the crank-handle *f*, or by the foot of the workman applied to the treadle *g*, that passes through a mortise in the lower part of the standard, and has its fulcrum at *1*, and is connected by the link *h* to the crank-pin *2* at the end of the said driving-shaft. *i* is the drill or boring instrument mounted in the drill-stock or shaft *k* that is set to revolve and to slide vertically in the bearings *l l* that extend as arms from the standard *b*. The drill-stock *k* has a groove around its upper end, taking the point of a screw, *3*, in the head *m*, that is jointed to the lever *n*, working through a jaw, *p*, at the top of the standard *b*, the fulcrum-pin *4* of which is changeable, so as to give greater or less leverage for the action of the spring *o* in raising the drill-stock and parts connected thereto. The drill-stock is rotated by a band, *q*, passing from the pulleys *d* over the guide-pulleys *r*, to the truncated cone of pulleys *s* on the stock *k*. The guide-pulleys *r* are upon arms extending from the standard *b*. *t* is a slide formed of two parts clamped by screws *5 5* and *6* to the standard *b* at any desired height, and *u* is the bed for supporting the article to be bored. This bed *u* has on its under side dove-tail ribs, taking the similarly formed upper edges of the slides *t*, so that it can be slidden nearer to or further from the standard *b*; and hence, when any article is secured to said bed, any required number of holes can be bored in it, all parallel to each other, without detaching it from said bed, within a space to which the capacity of the machine may be adapted, because the bed and slides can be turned around horizontally upon the standard *b*, or the bed be slidden nearer to or further from said standard. If desired, the slides can be turned aside from below the drill and the bed *u* be used for ordinary work, or a vise with dove-tail lugs fitting the slides *t* may be slipped on when the bed *u* is removed.

What I claim, and desire to secure by Letters Patent, is—

1. The slides *t*, clamped to the standard *b*, and receiving the bed *u*, constructed and arranged in the manner and for the purposes specified.

2. I claim the pulleys *d*, *r*, and *s*, arranged as set forth, in combination with the drill-stock *k*, treadle *g*, and crank *2*, as and for the purposes specified.

In witness whereof I have hereunto set my signature this first day of November, A. D. 1866.

WILLIAM D. GRIMSHAW.

Witnesses:

GEO. D. WALKER,

CHAS. H. SMITH.