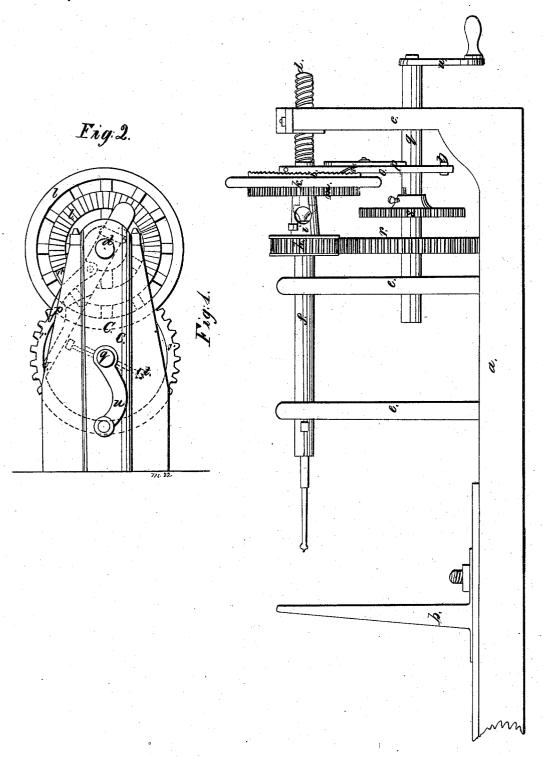
A. Morgan, Metal Drill,

Nº 3, 609.

Patented May 30, 1844



UNITED STATES PATENT OFFICE.

AMOS MORGAN, OF WOOSTER, OHIO.

DRILLING-MACHINE.

Specification of Letters Patent No. 3,609, dated May 30, 1844.

To all whom it may concern:

Be it known that I, Amos Morgan, of Wooster, in the county of Wayne and State of Ohio, have invented a new and useful Improvement in Machines for Drilling Iron or Boring Wood; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which 10 form a part of this specification, in which-

Figure 1, is a side elevation; Fig. 2, end

elevation.

The nature of my invention consists in

gearing up the drill and regulating the feed. The construction of my machine is as follows: there are ways (a) on which the rest (b) slides, and from one end of it a puppet head projects up at right angles thereto. This puppet head (c) has a female 20 screw at its upper end, in which a horizontal screw (d) runs, which is parallel with the ways (a); there are two other puppet heads, or standards (e) between the one first named and the rest (b); in these, the mandrel (f)turns and is guided—said mandrel is on a level with the screw (d) and is forced forward by the screw sliding in the standard. The screw is pointed on the end which bears against the mandrel, and they are coupled together by a box (i) so that when the screw is run back it draws the mandrel back with it; in the opposite end of the mandrel, the drill or auger is fixed. Upon the mandrel, between the puppet head (c) and the stand-35 and there is a pinion (h) which has two flanches projecting out on each side of the cogs to their face. To the screw a hand balance wheel (k) is affixed near the coupling, by which the screw &c., is moved back and 40 forth at pleasure by hand; on one side of

this there is a ratchet face wheel (1) cast and on the other a spur wheel (m) the ratchet wheel (l) has a pawl (n) that takes into it, which is jointed to the side of a lever

(o) the fulcrum of which is formed by the screw shaft from which it hangs down; above the pawl a straight piece (p) is jointed to the lever, that when the pawl rests against the wheel (1) falls down over it 50 and holds it there; and when lifted, and the

pawl thrown back, it passes down between the lever (0) and pawl, and holds it off from

the wheel; it is thus made to answer the double purpose of keeping the pawl in or out of action.

55Below the screw and mandrel there is a shaft (q) parallel with them, and having its bearings in the puppet head (c) and standard, in which it turns and slides; on this shaft, there is a spur wheel (r) that works 60 into the pinion (h) and turns it; this wheel is kept in gear with said pinion by means of the flanches thereon and together with the shaft (q) slides back and forth with it. On the same shaft there is a smaller spur 65 wheel (s) that is made to slide back and forth on said shaft and into gear or out with wheel (m) connected with the screw; this is used when wood is to be bored and causes the screw to feed up with a regular and 70 rapid motion for that purpose; this is not used in drilling iron, but instead thereof, the lever and pawl are brought into action; they are moved by two cams (t) which are put through the shaft (q) and are adjusted 75 by sliding in or out at pleasure so as to make the machine feed fast or slow; the cams are fastened by a set screw. On the end of the shaft (q) that projects through the puppet head a crank (u) is fixed by 80 which motion is given.

What I claim as my invention and desire

to secure by Letters Patent is-

1. The screw (d) and mandrel (f) constructed and combined in the manner de- 85 scribed in combination with and driven and fed up to the work by means of a driving shaft (q) and spur wheels and adjustable cams thereon, the said cams driving the screw by means of the lever o, pawl m & 90 ratchet l the shaft being moved in a lateral direction by the pinion on said mandrel, the whole being constructed, combined and arranged in the manner and for the purpose herein described.

2. I also claim the piece (p) in combination with the lever (o) and pawl for holding the pawl to or from the ratchet wheel as

herein set forth.

AMOS MORGAN.

Witnesses:

J. J. Greenough, LAFAYETTE CALDWELL.