A. Morgan,

Metal Drill,

No. 3,609. Patented May 30, 1844.

Fig. 2.

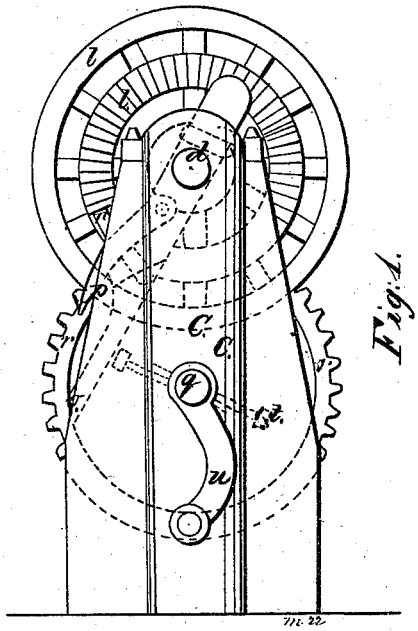
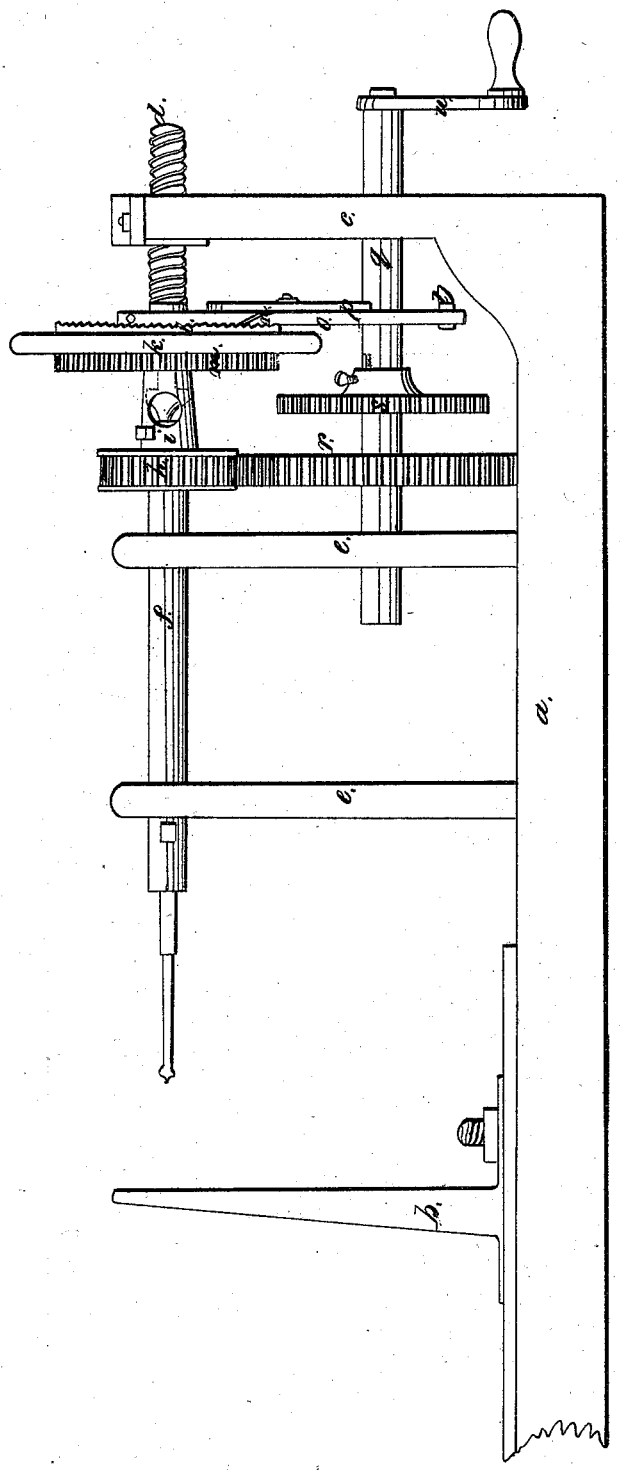


Fig. 1.



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 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 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 standard 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 forth at pleasure by hand; on one side of this there is a ratchet face wheel (*l*) 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 (*l*) falls down over it and holds it there; and when lifted, and the pawl thrown back, it passes down between the lever (*o*) 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.

Below 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 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 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 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 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 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 described 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* & 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.