I. W. Ward,

Boring Wood.

No. 14,479. Patented Mar. 18, 1856.

Fig 2

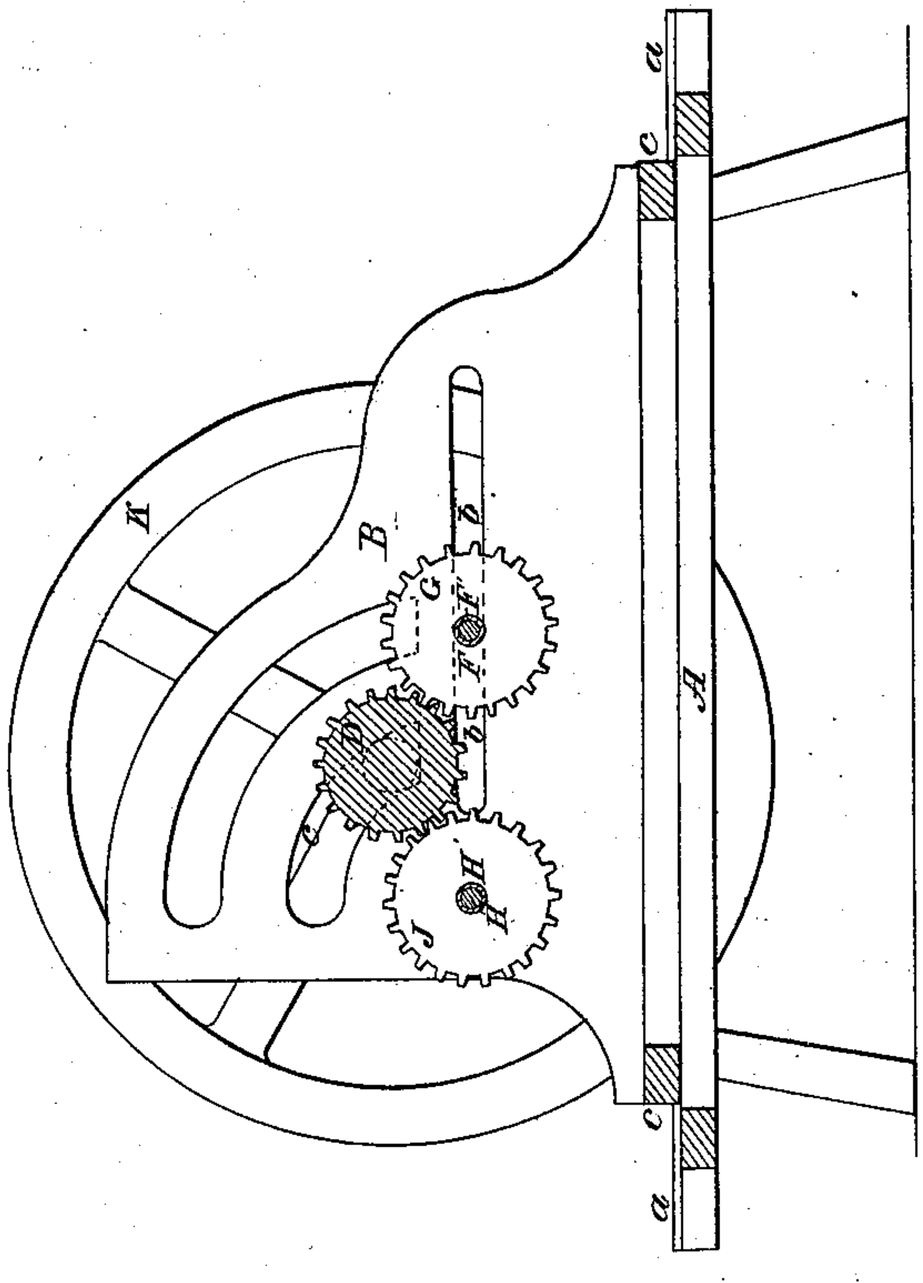


Fig 3

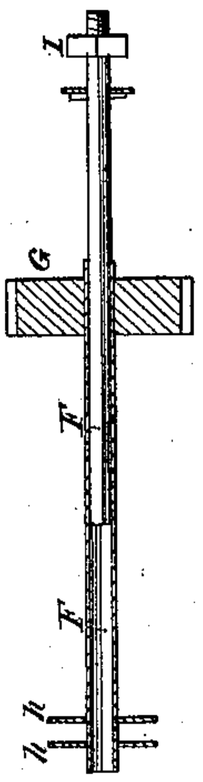
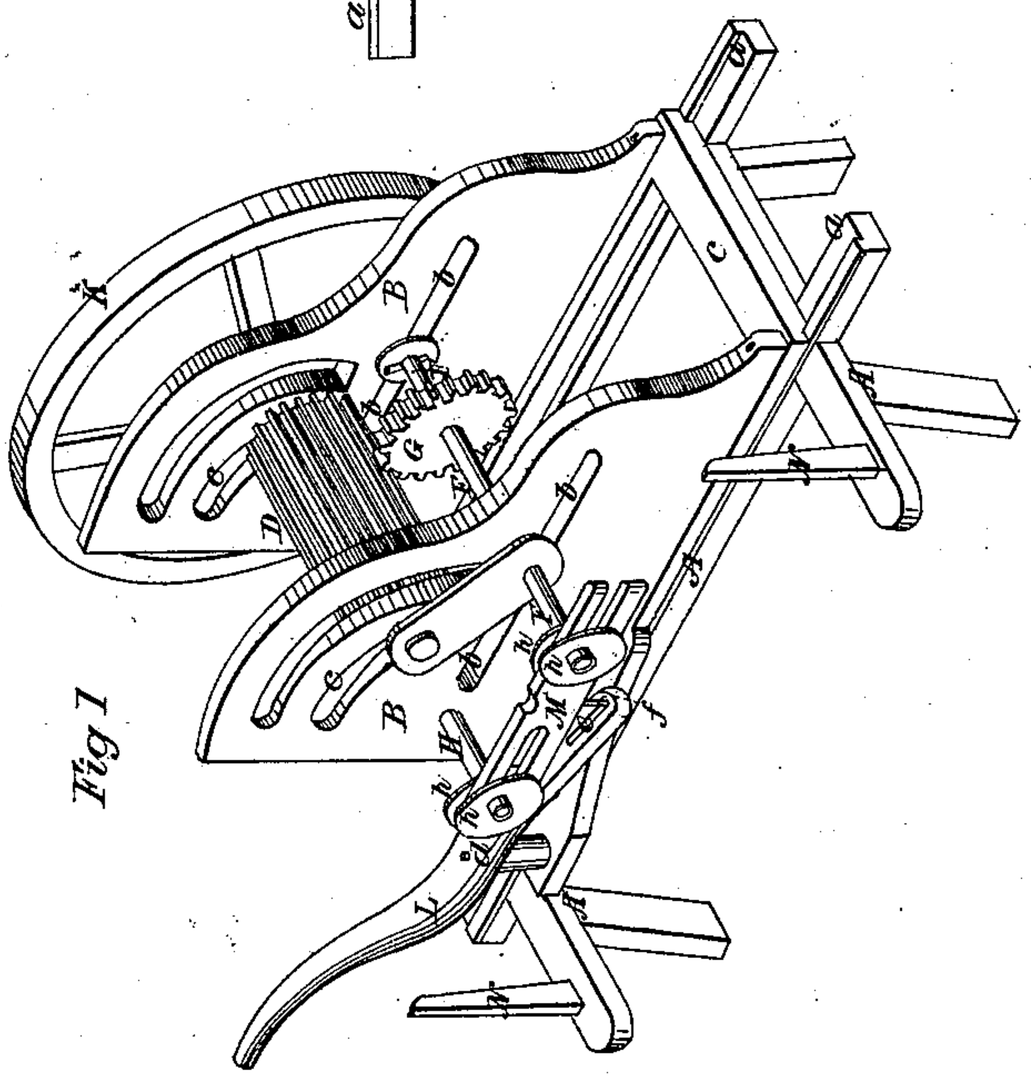


Fig 1



UNITED STATES PATENT OFFICE.

ISRAEL W. WARD, OF BIRMINGHAM, PENNSYLVANIA.

ADJUSTMENT IN BORING-MACHINES.

Specification of Letters Patent No. 14,479, dated March 18, 1856.

To all whom it may concern:

Be it known that I, ISRAEL W. WARD, of Birmingham, in the county of Huntingdon and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Boring Holes in Fence-Posts; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1, represents a perspective view of the entire machine. Fig. 2, represents a vertical and longitudinal section, taken centrally through the machine. Fig. 3, represents one of the auger shafts detached, and partly in section.

Similar letters where they occur in the several figures denote like parts in all.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings, as follows.

A represents a substantial frame, having ways *a*, *a*, upon its longitudinal pieces, in which the pillar blocks B, B, of an upper carriage slide. These pillar blocks are firmly connected together by cross ties C, and are provided with two slots each, which are directly opposite each other, viz: the straight slots *b*, *b*, and the segmental curved slots *c*, *c*.

D, is a cogged cylinder, whose journals pass through the curved slots *c*, *c*, and are then supported in one end of the braces E, (one only being seen, but both precisely alike) the other ends of said braces holding the shaft F, which passes through the straight slots *b*, *b*. By thus connecting the cogged cylinder, with the shaft F, said shaft having connected with it, a gear wheel G, which meshes with the cylinder, the two may be moved through their respective slots at pleasure, changing their relative positions toward each other, but always kept in gear by the braces E.

H, is another auger shaft, which may have a permanent position in the pillar blocks B, B, or, it may be made adjustable if found expedient. When it is desired to bring the two auger shafts close together, the nut I, Fig. 3 on the end of the shaft F, is loosened, and said shaft pushed toward the other shaft H. The journals of the long cogged cylinder D, being connected to the shaft F, by the braces E, the said cylinder will move up in the arc of a circle through the slots *c*, *c*, and still be held in gear with the wheel G, and thus the two auger shafts may be adjusted nearer to, or farther from each other as may be desired.

J, Fig. 2, is a gear on the shaft H, which also meshes with the long cogged cylinder D, and K, is a balance or fly wheel, on the end of one of the journals of D, to give the machine steady motion.

L, is a lever pivoted at *d*, and having a slot *e*, near its end through which a pin *f*, fastened to a slotted yoke M, passes. The slotted ends of the yoke M, straddle the shafts F′, H′, and are confined thereto by the collars *h*, *h*, on each side of them. The shafts it will be seen can approach each other, by means of the slots in the yoke, while the yoke can move both shafts in or out simultaneously, whatever may be their distance apart. The post to be bored is held against the uprights N, N, and the auger shafts, and their augers being adjusted to the proper distance apart, motion is communicated to them through D, and two holes are bored through the post. The carriage is then slid along on the ways *a*, *a* the proper distance, and two more holes are bored, and so on in the usual manner.

I have called the auger-stocks, or shanks, shafts. They are shafts, but peculiarly constructed ones, as will appear by reference more especially to Fig. 3.

F, is the shaft, and F′, a tube fitting over it. On this tube is arranged the gear wheels G, J, respectively, and in the ends of these tubes the augers are to be arranged. By this method of construction the shafts proper are immovable, and serve as guides and supports for the tube, sleeve, or boss which slides over them.

H, in Fig. 2, and H′, in Fig. 1, represent the nonadjustable auger shaft, and tube, corresponding with F F′, of Fig. 3. By simply rolling the long cogged cylinder up through the segments *c*, the two augers are brought closer together, but still in gear with D, and when at the proper distance apart, the nut I, is run up and the whole machine is ready for use.

I have described the machine as arranged for boring holes in fence posts, it may be used for boring holes in general in any kind of timber.

Having thus fully described the nature of my invention, I would state that, I am

aware augers have been so arranged as to be made to approach, or recede from each other, and still remain in gear, with the driving cylinder, but in practice, as heretofore arranged they are too expensive, and troublesome to go into general use. This I do not therefore claim, but

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

1. Hanging the cylinder D, in the curved arcs *c*, and the shaft F, in the straight slots *b*, cut in the pillar blocks B, and uniting the journals of D and F, by the braces E, so that they may be adjustable, but always be held in gear with each other, substantially as described.

2. I also claim the hollow auger shanks F′, H′, so arranged as to slide over the stationary shafts F, H, as they are forced out or drawn back, substantially as described.

ISRAEL W. WARD

Witnesses:
THOMAS SCOTT,
THOS. WARD.