W. STIVERS.

Drill.

No. 41,546. Patented Feb. 9, 1864.

Fig. 1.

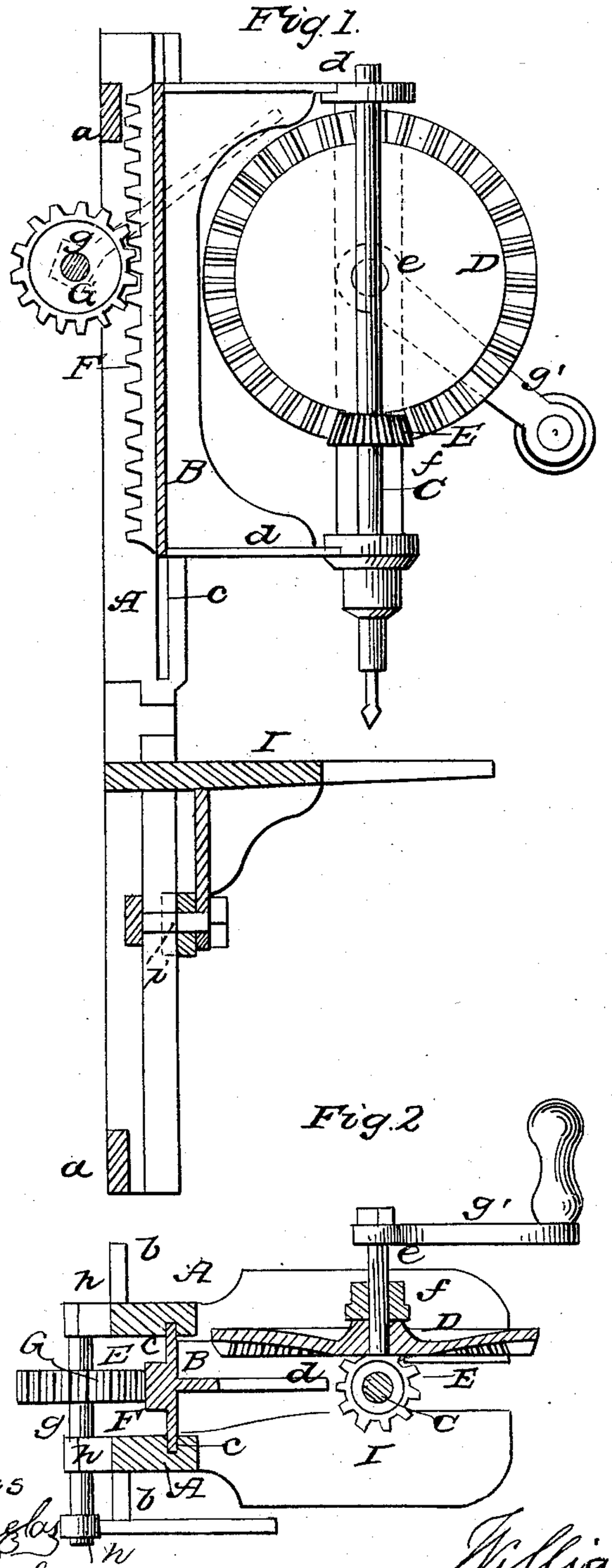

Fig. 2.

Witnesses
Thos. H. Douglas
Geo. A. Reed

Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM STIVERS, OF NEW YORK, N. Y.

IMPROVEMENT IN DRILLS.

Specification forming part of Letters Patent No. **41,546,** dated February 9, 1864.

To all whom it may concern:

Be it known that I, WILLIAM STIVERS, of the city, county, and State of New York, have invented a new and Improved Hand Drilling-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of my invention. Fig. 2 is a horizontal section of the same.

Similar letters of reference indicate corresponding parts in both figures.

The object of this invention is an improvement in that class of boring or drilling machines which are provided with a vertically-adjustable carriage, furnished with arms to form the bearings for the bore-spindle, and with an adjustable table, and which are particularly intended to drill holes of various depth by hand in wood or metal.

The nature of my invention and its peculiar advantages will be readily understood from the following description.

A A represent two upright guide-pieces, which are connected at top and bottom by cross-bars *a a*, and provided with ears *b*, all cast in one piece.

B is a carriage, which moves up and down in grooves *c* in the upright guide-pieces, and this carriage is provided with two horizontal arms, *d d*, the outer ends of which form the journal-boxes for the bore-spindle C. The lower journal of this spindle may be made tapering, so that in drilling the upper bearing is relieved from pressure, and said upper bearing may consist of a center point, or the spindle may be journaled in the upper arm in any other convenient manner.

A rotary motion is imparted to the bore-spindle by means of a bevel-gear, D E. The wheel D is secured to a horizontal shaft, *e*, which has its bearings in an upright bar, *f*, secured to or cast solid with the carriage B, and this shaft carries a crank, *g'*, by means of which the wheel D can be rotated. The pinion E is fastened on the bore-spindle C in such a position that it meshes into the wheel D. It is obvious that by changing the proportion between the wheel D and pinion E the speed of the bore-spindle can be regulated at pleasure.

The feeding mechanism consists of a toothed rack, F, which is cast in one piece with the carriage and arms *d d*, and extends the entire length of the carriage, as clearly shown in Fig. 1 of the drawings, and this rack gears into a pinion, G, which is mounted on a horizontal shaft, *g*, that has its bearings in journal-boxes *h*, secured to the upright guide-pieces A. A hand-lever, H, serves to impart a rotary motion to the pinion G in either direction, and by these means the carriage C can be raised or lowered, and the drill can thus be fed to the work or taken off from it at pleasure.

The work is placed on a slotted table, I, which is secured to the upright guide-pieces by means of a clamp-screw, *i*, or in any other convenient manner, so that it can be adjusted up and down, according to the work to be drilled.

By the combined action of the adjustable table and adjustable carriage this machine can be set for any kind of work, and it can be used to drill holes of greater or smaller depth with the greatest ease and facility.

The whole machine can be made very cheap, all its parts with very few exceptions being cast and so constructed that they can be fitted together without much labor or loss of time.

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

As a new article of manufacture, the hand drilling-machine, constructed substantially as hereinbefore described.

WILLIAM STIVERS.

Witnesses:

THOS. S. J. DOUGLAS,

M. M. LIVINGSTON.