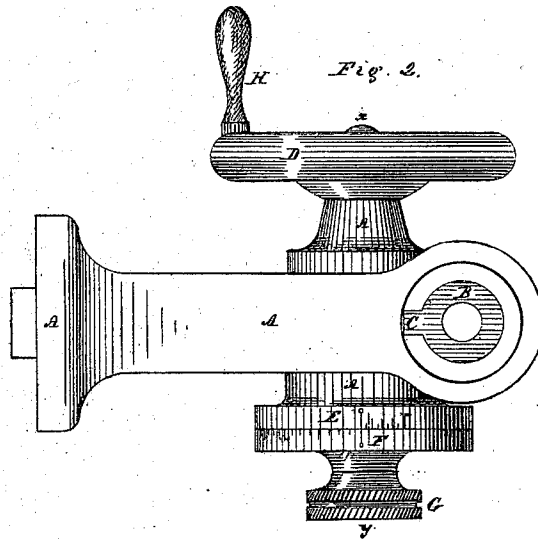
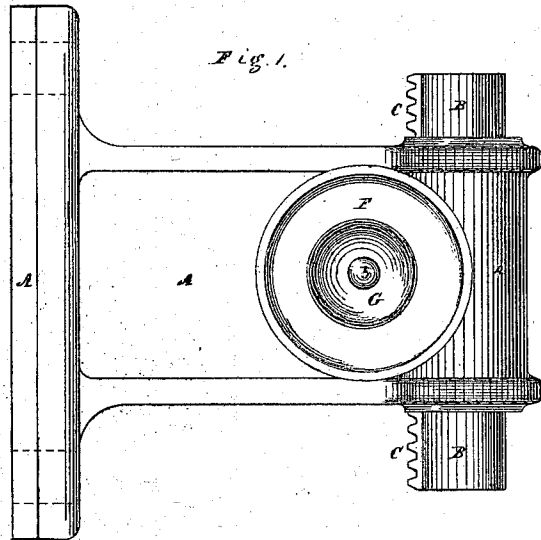


E. G. PARKHURST.

Improvement in Gages for Machine-Drills.

No. 131,775.

Patented Oct. 1, 1872.



Witnesses.

Bens. Cooke
John J. Peters

Inventor.

E. G. Parkhurst
by Theo. G. Ellis
Attorney

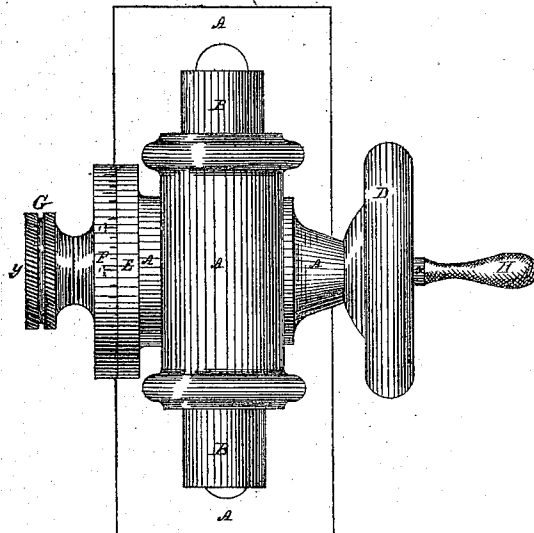
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Fig. 3.



Witnesses.

Burdock
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Attorney

UNITED STATES PATENT OFFICE.

EDWARD G. PARKHURST, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND THE PRATT & WHITNEY COMPANY, OF SAME PLACE.

IMPROVEMENT IN GAGES FOR MACHINE-DRILLS.

Specification forming part of Letters Patent No. 131,775, dated October 1, 1872.

To all whom it may concern:

Be it known that I, EDWARD G. PARKHURST, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machine-Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention consists in an adjustable device for registering the distance the drill penetrates from any given position, and showing at a glance the number of inches and fractions that the drill has bored into the work. The object of my invention is to measure with accuracy the depth of the hole drilled without removing the drill or measuring with any detached instrument the distance any part of the machine has traversed.

In the accompanying drawing on two sheets, Figure 1 is a side view of part of a machine-drill having my invention applied; Fig. 2 is a top view of the same, showing more particularly the zero-point and measures upon the index-wheel; and Fig. 3 is a front view of the same.

A is part of the frame of the machine. B is the sliding sleeve which carries the revolving drill-bar up and down. The drill-bar revolves in the circular opening in the middle of B, and has a collar above and below, so that its motion up and down is controlled by the sleeve. C is a rack, which works in a pinion upon the shaft *x y*, which passes through the frame of the machine. D is a wheel furnished with a handle, H, for turning the shaft or arbor *x y*. E is a fixed circular part of the frame A, having a circumference concentric with the arbor *x y*. F is a circular disk, running loose on the arbor *x y*, and having its circumference turned to correspond with that of E, so that the two surfaces form part of the same cylindrical surface. G is a clamp-nut on the end of the arbor *x y*, for the purpose of firmly clamping the wheel F to the arbor or

loosening it, as desired. When clamped to the arbor the wheels D and F turn together at the same time with the pinion that runs in the rack C. Upon the fixed disk E there is a line marked 0, as shown in Fig. 2, and upon the movable disk F there are graduations, likewise shown in Figs. 2 and 3, which correspond to some definite movement downward of the sleeve B; for instance, the turning of F through one division, from 0 to 1 of the graduations, would move the sleeve downward one inch. In the drawing the graduations are in inches and fractions, as commonly used, but any other units can be used. The zero-point is placed on the fixed disk E, and the graduations on the movable wheel F, but these can be reversed, if desired. A few divisions, from 0 to $\frac{1}{8}$, by sixty-fourths of an inch, are shown in Fig. 2. These measure by the 0 on F passing along them the same as the 0 of E passing over the divisions of F.

The operation of my invention is as follows: When the work to be bored is placed under the drill the drill-bar is lowered by means of the wheel D and handle H until the point of the drill touches the work. The nut G is then loosened and the two zero-points set together. The drill is now revolved and fed downward by any usual method. As it descends the wheel F, being clamped to the same arbor as the pinion running in the rack C, revolves, and the divisions opposite the 0 on E show, in inches and fractions, the exact depth from the starting-point the drill has reached.

It will be observed that, by means of my invention, a hole can be drilled of an exact depth by inspection, with ease and certainty, and without taking any measurements by hand in the usual manner. It will also be observed that whatever be the position of the drill at starting the two zero-points of the wheel F and the circle E can be brought to coincide by loosening the nut G and again clamping it after setting the wheel. The measurement on the wheel then becomes positive and direct without any additions or subtractions on the scale.

In the foregoing description of my invention the devices E and F are both represented as complete circles. In some cases, however, it may be

more convenient to retain only that portion of one or the other which carries the zero-point, dispensing with the remaining portion of the circle. Thus a mark might be made on the frame A, which would take the place of the whole circle E; or E might be made complete and F be simply a revolving pointer or index set by a clamp in any desired position of the drill. The part which is herein shown and described as carrying the zero-point can also be furnished with a vernier for measuring minute divisions, if desired.

Claim.

What I claim as my invention is—

The circle E, fixed to the frame of a machine-drill, in combination with an adjustable index-wheel or its equivalent and a clamping device for measuring the distance moved, substantially as described.

E. G. PARKHURST.

Witnesses:

THEO. G. ELLIS,
FRANCIS A. PRATT.