

G. A. BOWERS.
Drills for Drilling Metal.

No. 147,473.

Patented Feb. 17, 1874.

Fig- 1 -

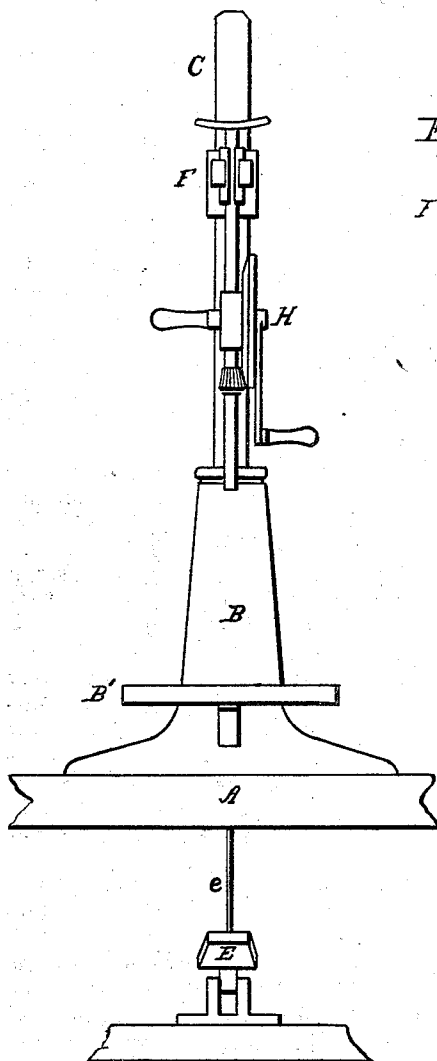


Fig- 2 -

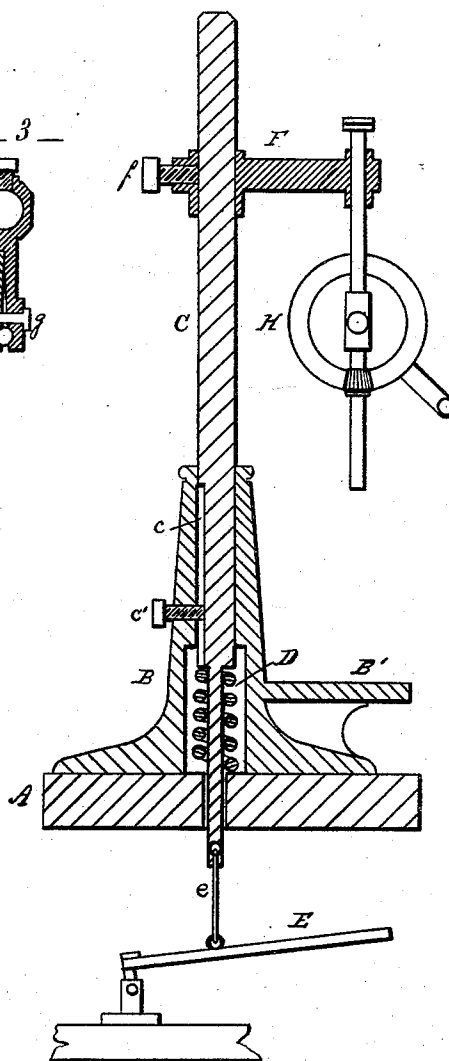
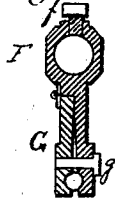


Fig- 3 -



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE A. BOWERS, OF CHICAGO, ILLINOIS, ASSIGNOR TO FRANK STURGES & CO., OF SAME PLACE.

IMPROVEMENT IN DRILLS FOR DRILLING METAL.

Specification forming part of Letters Patent No. **147,473**, dated February 17, 1874; application filed November 13, 1873.

To all whom it may concern:

Be it known that I, GEORGE A. BOWERS, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Drill-Press, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, and in which—

Figure 1 is a front elevation of my improved drill-press having an ordinary breast-drill arranged therein; Fig. 2, a vertical section of the same from front to rear; and Fig. 3, a horizontal central section of the supporting arm or clamp.

Like letters of reference indicate like parts.

The object of my invention is to provide suitable means whereby ordinary breast-drills and braces may be operated both in the usual manner, and in connection with a treadle, so that the necessary pressure may be readily exerted by the foot of the operator; and to that end my invention consists in certain novel features, hereinafter particularly described and set forth, relating to the construction of the press.

In the drawing, A represents a bench or table suitable for the purpose of supporting the press and its attachments. B is a hollow standard arranged on the bench and provided with the platen or table B'. C is a rod or bar arranged in the standard B. *c* is a vertical groove in the rod C, and *c'* is a screw or pin projecting into the groove *c* for the purpose of preventing the rod C from being turned in its bearings. The lower part of the rod C is cut away so as to form a shoulder thereon, as shown in Fig. 2; and D is an open spiral spring resting on the bench and against the said shoulder for the purpose of supporting the rod C and its attachments. The bench A is perforated, as shown, so that the lower end of the rod C may have a bearing in the bench, and so that the treadle may be conveniently connected with the said rod. E is the treadle, and *e* is a rod or cord by means of which it is connected to the rod C. F is a supporting-arm

or clamp on the rod C, and made vertically adjustable thereon by means of the set-screw *f*. G is a hinged piece forming one part of the clamp, and this piece is drawn toward the rigid part of the clamp by means of the screw *g*. The clamp is formed to receive the stem of an ordinary breast-drill, and H is such a drill arranged therein.

The material to be drilled is arranged on the table B', and the drill H, when arranged in the clamp F, is operated in the usual manner, excepting that the pressure is applied by means of the treadle. The action of the spring D will lift the drill from the material being operated upon when the pressure is withdrawn from the treadle.

The breast-drill may be readily attached to, and removed from, the supporting-arm and adjusted at a proper height above the table B'. By this means the mechanic is enabled to use a breast-drill for many purposes without being obliged to bring the drill into contact with his breast for the purpose of exerting the necessary pressure.

It will be perceived that the breast-drill may be attached to the supporting-arm in various ways; but I deem it preferable to attach it thereto in a manner substantially the same as herein shown and described. It will also be observed that pressure may be exerted upon an ordinary brace in a manner similar to that described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The hollow standard B, provided with the supporting table or platen B' and with the screw *c'*, the vertical rod or bar C, provided with a clamp, F, and having the groove *c* therein, the spring D, and the treadle E, connected to the rod or bar C, all combined and operating together substantially as and for the purposes specified.

GEORGE A. BOWERS.

Witnesses:

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F. F. WARNER.