

T. Frusser,

Pin Drill.

No. 89,502.

Patented Apr. 27, 1869.

Fig. 1.

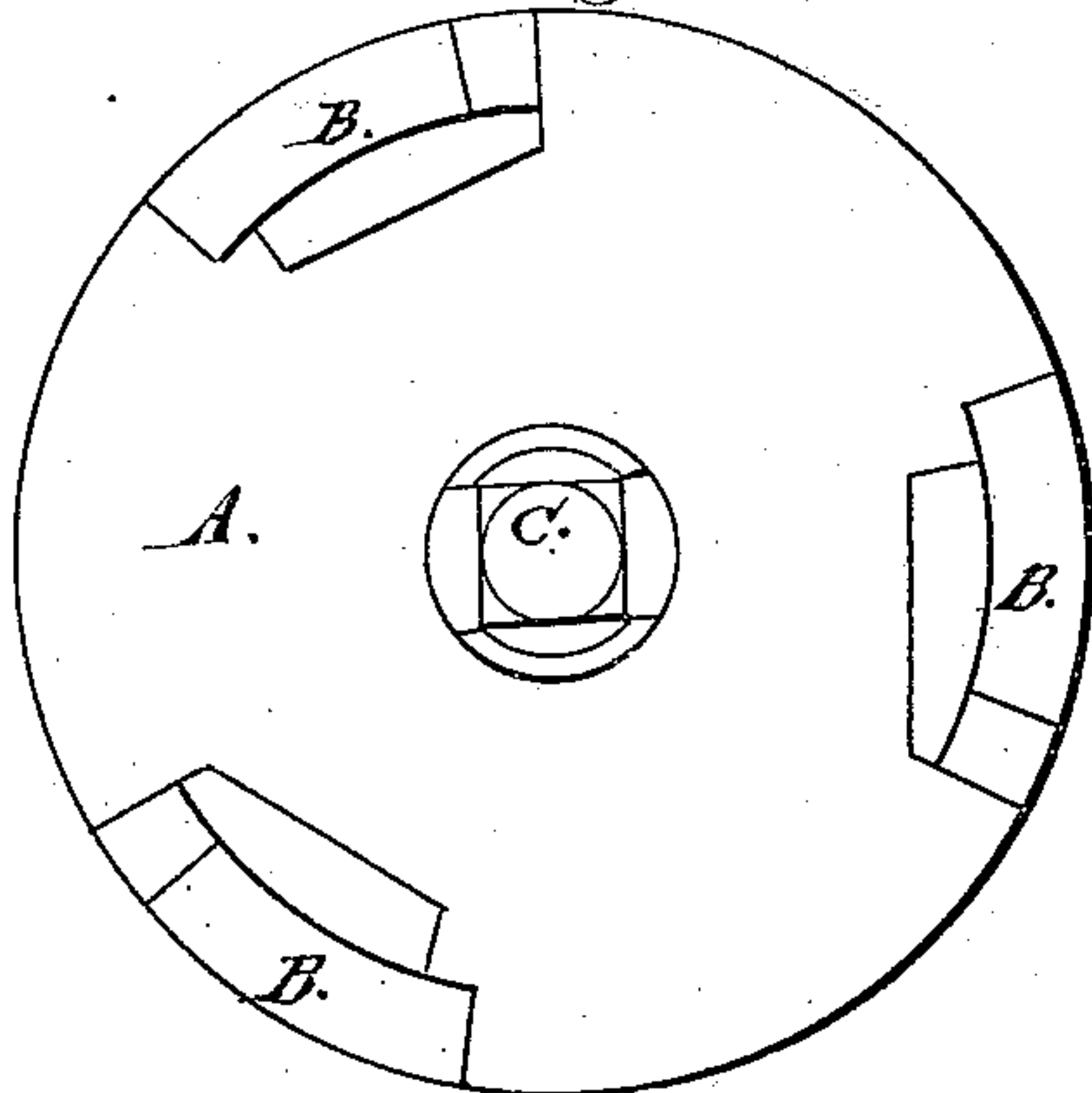
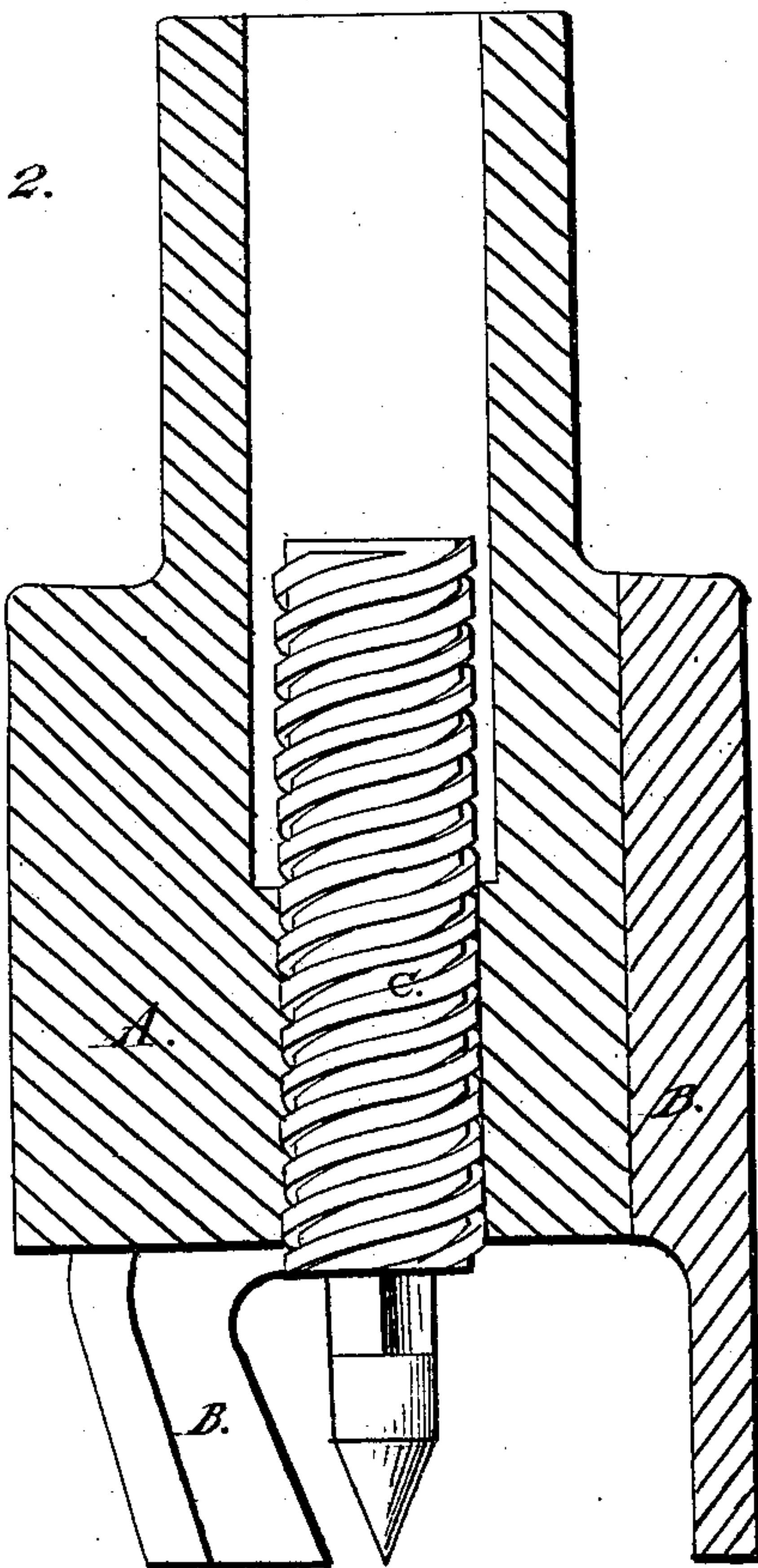


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS PROSSER, OF NEW YORK, N. Y.

IMPROVED PIN-DRILL.

Specification forming part of Letters Patent No. 89,502, dated April 27, 1869.

To all whom it may concern:

Be it known that I, THOMAS PROSSER, of the city, county, and State of New York, have invented a new and useful Improvement in Pin-Drills; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an end view of a drill constructed according to my improvement, as seen from below; and Fig. 2 is a vertical section of the same.

Similar letters of reference represent corresponding parts in both figures.

The object of this invention is to provide for the drilling of holes of large size into iron, stone, or other material, without the necessity of first drilling a smaller one, as is necessary for the guidance of the fixed center-pin of an ordinary pin-drill.

The invention consists in furnishing the drill with a central pin, composed of a separate piece fitted into the stock or body of the drill, with a screw-thread or spiral guide, in such manner that while the said pin serves to center the drill at the commencement of its operations by working on a bearing produced in the surface of the material to be drilled, by a center-punch or other means, it recedes within the drill relatively to the cutting-edges as the drilling proceeds, and so retains its proper bearing on the material and continues to center the drill.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A is the stock or body of the drill, provided with cutting-points, or fitted with cutters B B B, substantially like those of the pin-drill in common use, or of any suitable construction.

C is the center-guide pin, which may be screwed into the stock or body in the usual manner of screw and nut, and with single, double, or treble, or any number of threads; or it may have but one thread working into the stock, as a helical feather may be fast to the stock; or, instead of a feather, a pin may replace it and run in the groove forming the female part of the screw, whether the one or the other is in the guide-pin or the stock of the drill.

The outer extremity of the guide-pin may have a smooth, plain conical point, as repre-

sented; or faces may be ground upon the conical end of the pin, to form pyramidal reamers or countersinks; or the cone may be fluted for that purpose, if it is desirable to obtain more frictional hold upon the material to be drilled than could be obtained with a smooth cone, in which case a less pitch of the screw will be desirable, according to circumstances.

To use this improvement, the material to be drilled should first receive an indentation, by means of a center-punch or otherwise, in the center of where the hole is to be drilled, for the reception of the point of the guide-pin C. The center-guide pin C must then be turned backward, and out of the stock only so far as will project its cone-point a little beyond the points of the cutters B. The material may then be applied so that the point of the center-pin will come in contact with and enter into the indentation made therein by the center-punch or otherwise, as above described, and the drill may either be fed down to the material or the material fed up to the drill. In either case the center-point C will cease to turn with the same velocity of the stock, but will be somewhat retarded by friction of the point against the material, and by which means, though still having, in some degree, the rotary motion of the stock, it is not progressive in its movement, as are the cutters, and, though occupying the same position relative to the material, yet recedes relatively to the cutting-points B, by means of the forward feed-motion of the drilling operation, and is by degrees screwed back into the stock in a degree proportionate to the feeding process of the drilling performance, retaining all the while its point within the center indentation in the material, and guiding the cutters thereby.

By means of this improvement holes of large size may be drilled more truly than with the ordinary pin-drill, which requires the preparatory drilling of guide-holes for the center-guide pin, besides saving the time and labor in the drilling of such guide-holes.

What is here claimed as my invention, and desired to be secured by Letters Patent, is—

The combination of the hub A and its bits B with the spirally-guided center-pin, all constructed and arranged substantially as set forth.

THOS. PROSSER.

Witnesses:

A. LE CLERC,
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