

(No Model.)

H. C. FRASER.
RATCHET BRACE.

No. 460,005.

Patented Sept. 22, 1891.

Fig. 1.

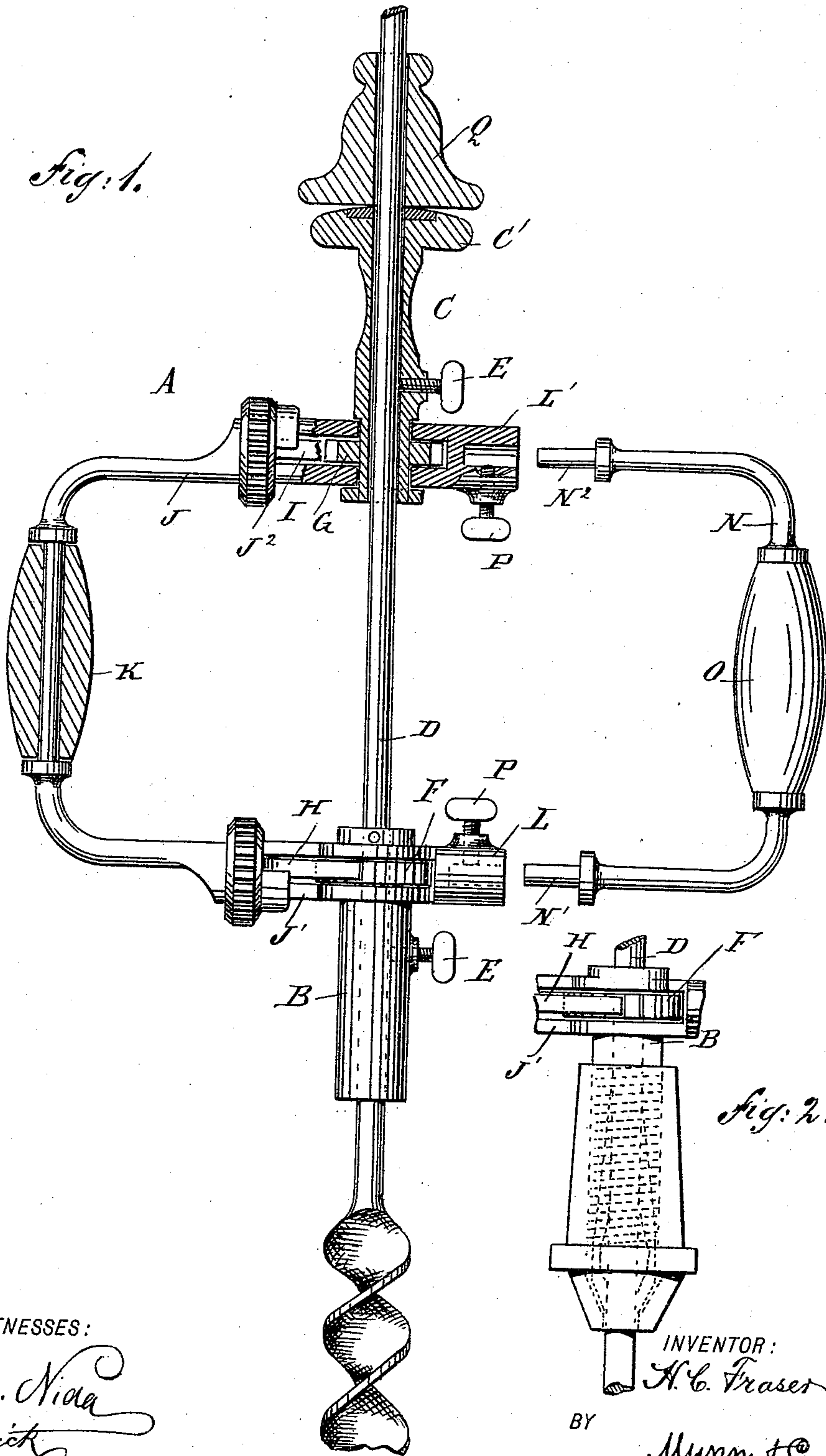
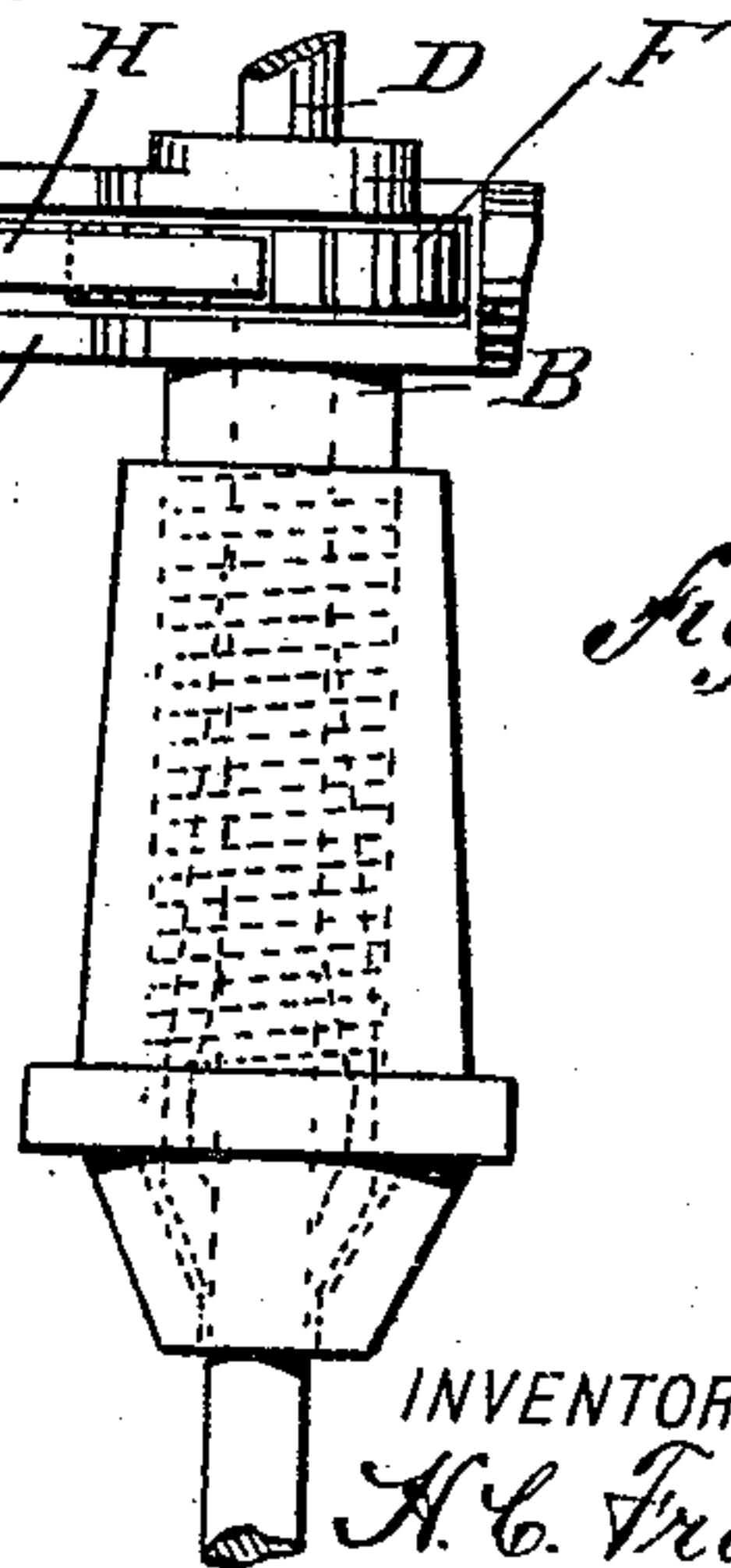


Fig. 2.



WITNESSES:

Chas. Nida
C. Sedgwick

INVENTOR:

H. C. Fraser

BY

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY C. FRASER, OF CHARLESTON, SOUTH CAROLINA.

RATCHET-BRACE.

SPECIFICATION forming part of Letters Patent No. 460,005, dated September 22, 1891.

Application filed May 15, 1890. Serial No. 351,892. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. FRASER, of Charleston, in the county of Charleston and State of South Carolina, have invented a new and Improved Ratchet-Brace, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved ratchet-brace which is simple and durable in construction, easy to operate, and which permits of using long augers or bits.

The invention consists of two sleeves, each carrying a ratchet-wheel and adapted to be fastened to the tool-shank, and a U-shaped arm mounted to turn at its ends on the said sleeve and carrying pawls engaging the ratchet-wheels.

The invention also consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a side elevation of the improvement with parts in section, and Fig. 2 is a side elevation of a modified form of bit-holder.

The improved ratchet-brace A is provided with two sleeves B and C, fitted to slide on the shank of the tool D and adapted to be secured thereon by set-screws E or other suitable means—such, for instance, as shown in Fig. 2, in which the ordinary clamping-jaws and threaded collar are used. On the sleeves B and C are secured the ratchet-wheels F and G, respectively engaged by pawls H and I, respectively secured on the ends J' and J², respectively, of a U-shaped arm J, provided in its middle with a handle K, mounted to turn thereon.

On the ends J' and J² of the arm J are formed sockets L and L', respectively, adapted to be engaged by the shouldered ends N' and N², respectively, of a U-shaped arm N, provided in its middle with a handle O, similar to the handle K. Set-screws P, held in the sockets L and L', serve to fasten the ends N'

and N² in the sockets, so that the arm N stands opposite the arm J to permit the operator to use both hands in operating the ratchet-brace, as hereinafter more fully described.

On the upper end of the sleeve C is formed a handle C', adapted to be engaged by the operator when the arm N is not used. A separate handle Q is adapted to slip onto the shank of the tool D to rest on top of the handle C', as is plainly shown in the drawings.

The operation is as follows: The sleeves B and C of the brace are slipped onto the shank of the tool D and fastened thereon by the set-screws E near the cutting end of the tool, as shown in the drawings. The operator then takes hold of the head C' of the sleeve C with one hand and with his other hand takes hold of the handle K and then moves the arm J forward and backward, so that the pawls H and I, by the action of the ratchet-wheels F and G, turn the tool D. After the cutting part of the tool has passed into the material to be operated on the operator loosens the set-screws E, slips the brace upward on the shank of the tool D, and again fastens the brace to the latter by the set-screws, after which the above-described operation is repeated, so that the tool advances farther into the material. By thus providing for resetting the brace on the shank of the tool the latter may be of any desired length, so as to bore deep holes. After the drilling-tool is started in the material the operator may use the arm N by fastening the latter at its ends N' and N² into the sockets L' and L². The operator then uses one hand on the handle K and the other on the handle O to conveniently move the arms J and N forward and backward to turn the tool D.

It is understood that when the arm J is moved in one direction the pawls H and I glide over the teeth of the ratchet-wheels F and G, and when moved in an opposite direction the pawls carry the ratchet-wheels with them, so as to turn the tool D. It will be seen that by this arrangement the brace can be conveniently shifted on the shank of the tool, so as to permit of using tools of considerable length for boring deep holes. It will further

be seen that by the double sets of ratchet-wheels and pawls on the arm J a double purchase-power is had.

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

1. A ratchet-brace comprising two spaced and aligned sleeves in which the tool-shank is adapted to be secured, a ratchet-wheel carried by each sleeve, and a handle-arm mounted to turn on the sleeves and provided with pawls engaging the ratchet-wheels, substantially as described.

2. In a ratchet-brace, the combination of two spaced and aligned sleeves in which a tool-shank is adapted to be adjustably secured, a ratchet-wheel carried by each sleeve, and a U-shaped arm having its ends mounted to turn on the sleeves and provided with pawls engaging the ratchet-wheels, substantially as herein shown and described.

3. In a ratchet-brace, the combination, with two sleeves held adjustably on the tool-shank, of ratchet-wheels secured on the said sleeves, pawls engaging the said ratchet-wheels, a U-shaped arm mounted to turn at its ends on the said sleeves and carrying the said pawls, sockets formed at the ends of the said arms,

and a second U-shaped arm adapted to be secured at its ends to the said sockets, substantially as shown and described.

4. In a ratchet-brace, the combination, with two sleeves adapted to be fastened to the tool-shank and of which the upper sleeve is provided with a hollow head, of ratchet-wheels secured on the said sleeves, pawls engaging the said ratchet-wheels, and a U-shaped arm mounted at its ends to turn on the said sleeves and carrying at its ends the said pawls, substantially as shown and described.

5. In a ratchet-brace, the combination, with two sleeves adapted to be fastened to the tool-shank and of which the upper sleeve is provided with a head, of ratchet-wheels secured on the said sleeves, pawls engaging the said ratchet-wheels, a U-shaped arm mounted at its ends to turn on the said sleeves and carrying at its ends the said pawls, and a loose handle fitted to slide on a tool-shank and adapted to rest on the head of the upper sleeve, substantially as shown and described.

HENRY C. FRASER.

Witnesses:

C. M. THORP,
ROBT. H. EASEN.