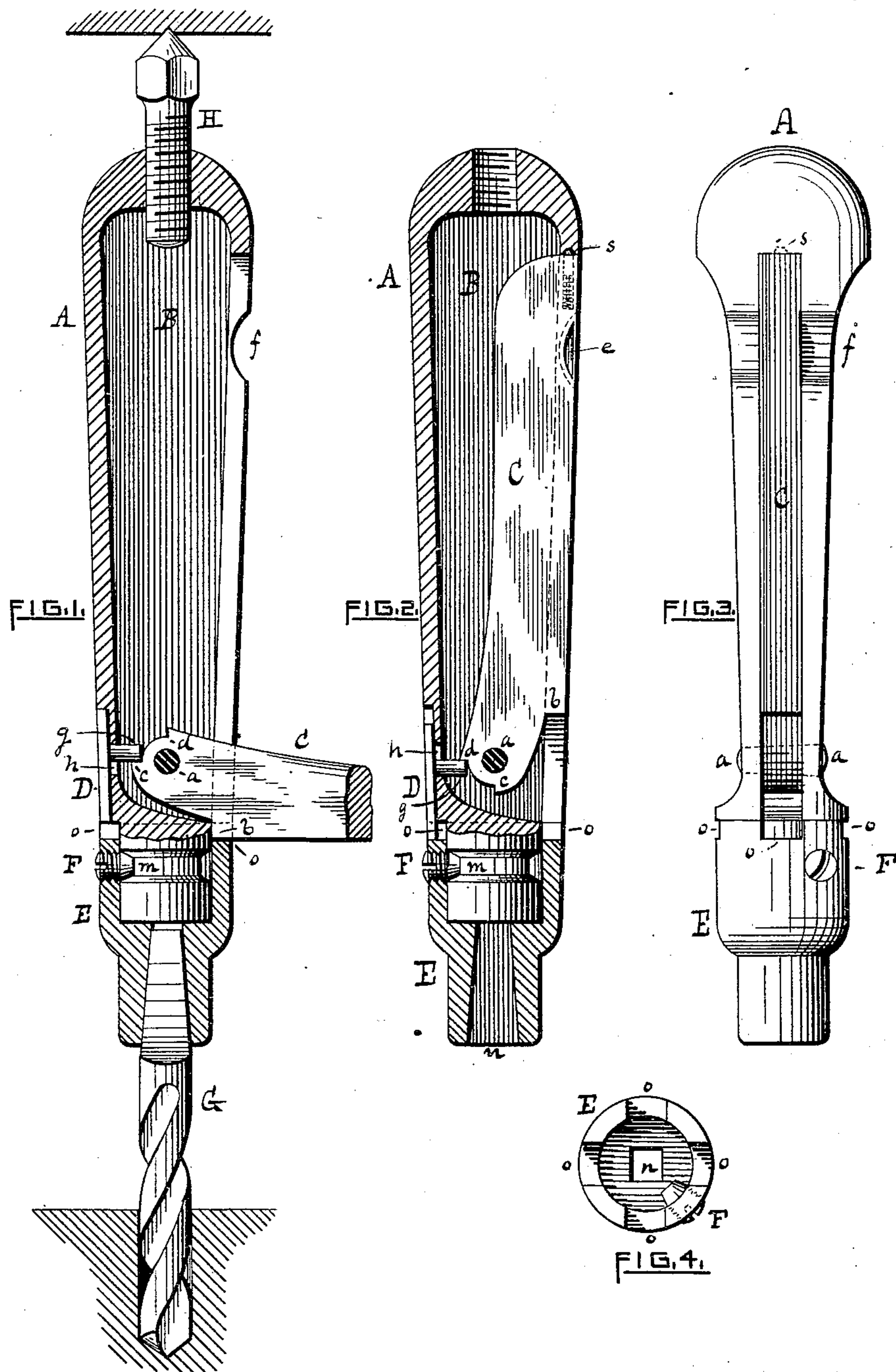


(No Model.)

R. J. BAKER
DRILL STOCK.

No. 354,085.

Patented Dec. 14, 1886.



WITNESSES.

James W. Williams
Warren R. Perce

INVENTOR.

Richard Baker

UNITED STATES PATENT OFFICE.

RICHARD J. BAKER, OF PROVIDENCE, RHODE ISLAND.

DRILL-STOCK.

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To all whom it may concern:

Be it known that I, RICHARD J. BAKER, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in Ratchet-Drills or Bit-Stocks; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

Like letters indicate like parts.

Figure 1 shows, partly in longitudinal section and partly in side elevation, my invention with the lever extended laterally. Fig. 2 shows the same with the lever closed. Fig. 3 is a front elevation of my invention. Fig. 4 is a detail view.

My invention relates to ratchet-drills or bit-stocks, to which power is applied by a lever or arm engaging with ratchet or teeth.

It is the purpose of my invention to produce a handle which may be used as an ordinary rigid straight handle or as a ratchet-drill or rotating bit-stock at will.

It consists of a hollow handle having a lever-arm pivoted therein, which may be closed into the handle or extended laterally therefrom, as desired, a rotating bit stock having ratchets or slots in its upper or larger end, and mounted upon the end of the handle by a screw passing through the bit stock into a circumferential groove or channel in the inclosed portion of the handle, and a locking-bar operated by said lever to slide into one of the slots of the bit-stock when the lever is folded into the handle, or to withdraw from said slot when the lever is extended, all as hereinafter fully described, and specifically pointed out in the claims.

In the drawings, A represents the handle, which may be made of metal or wood, as preferred. It has a deep longitudinal slot, B, as shown in Figs. 1 and 2. A lever or arm, C, is pivoted to the handle in the slot B by the pin *a*. The lever has the shoulders *b*, *c*, and *d* and the nail-crease *e*. The handle A is cut away at *f* to allow the thumb-nail to enter the crease *e* of the lever C when said lever is closed into the handle.

The handle A in the rear is grooved and slotted to receive the locking-bar D with its pin *g*. The pin *g* is shouldered or otherwise adapted to confine the bar D from outward displacement. The pin *g* has a limited movement in the slot *h* of the handle A.

The lower end of the handle A is cut down to a smaller diameter to enter the central bore of the bit-stock E, and has a circumferential channel or groove, *m*, into which enters the beveled end of a screw, F, passing through the bit-stock E. This screw holds the bit-stock to the handle; and yet allows it to rotate upon the handle.

The bit-stock E has the usual socket, *n*, to receive the bit G. Upon the inner or larger end of the bit-stock E are ratchets or transverse slots *o*, preferably a quarter of a circle apart. A feed-screw, H, extends through the top of the handle A. A spring-teat, *s*, inserted in the free end of the lever C and slightly projecting therefrom, enters a corresponding depression in the handle to confine the lever in position when closed.

The operation of my improved implement is as follows: When used as a ratchet-drill or rotating bit-stock, the lever C extends laterally from the handle A, as seen in Fig. 1. The locking bar D is lifted by the engagement of its pin *g* with the shoulder *c* of the lever. The shoulder *b* of the lever is brought down into one of the slots *o* of the bit stock E, power is applied to the lever, and the whole handle, stock, and bit are turned together, driving the bit in the usual manner, the screw H being turned as usual to furnish the upper bearing against any suitable surface. When the lever has completed its transverse movement, it is slightly raised to disengage its shoulder *b* from the slot *o*, in which it has rested, and is turned to the next slot *o*, (the handle A moving with it at the same time,) and, being engaged by depression into that slot, turns the bit-stock again, as before. During such rotation the beveled end of the screw F travels in the channel *m* of the handle A.

To use the handle as an ordinary straight tool-handle, the lever C is raised longitudinally and closed into the handle like a knife-blade, the spring-teat *s* holding it in place sufficiently. This movement of the lever C brings its shoulder *d* down on the pin *g* of the locking-bar D, driving it into a slot, *o*, of the bit-stock E, as shown in Fig. 2. The handle and bit-stock are thus fastened together, and cannot rotate independently of each other.

The distance between the shoulders *c* and *d* of the lever C is long enough to allow the slight

elevation of the lever and the free rotation of the handle A, which is necessary in passing the lever from slot to slot to turn the bit-stock; but the full longitudinal sweep of the lever in closing into the handle forces down the bar D into a slot, *o*, of the stock E, and confines them rigidly together. This handle is thus convertible at will into a ratchet-drill and bit-stock of great power, and useful for many purposes. For instance, if a screw-driver is inserted into the socket *n* of the stock E, a screw may be driven by it in the usual manner as far as the usual hand-grip upon the straight handle will force it; but by letting down the lever C and operating the bit-stock, as above described, a great leverage is obtained, which will tighten the screw or drive it yet further.

It is common in ratchet-drill stocks as heretofore constructed to have the operating lever-arm project at an angle from the stem and to rotate around it; but by my contrivance the lever has free movement up and down, forward and back, and folds into the handle, thus making the tool more compact and more easily portable when not in use as a ratchet-drill.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. In a ratchet-drill or bit-stock, the combination of the handle A, having the longitudinal slot B, the lever C, having the shoulder *b*, and pivoted to said handle at *a*, and capable of swinging into the slot B of said handle and to be extended laterally therefrom at will, the rotatable bit-stock E, mounted upon the handle A by the screw F engaging with the channel *m*, and having slots *o*, adapted to receive and engage with the shoulder *b* of the lever C, substantially as described.

2. The combination of the handle A, slotted at B and *h* and channeled circumferentially at *m*, the lever C, having shoulders *b c d*, and pivoted at *a* within said handle, the rotatable bit-stock E, having slots *o* at its inner end and

the socket *n* at its outer end, and mounted upon the handle A by the screw F engaging with the channel *m*, and the locking-bar D, having the pin *g* engaging the lever C and movable in the slot *h* of the handle A, substantially as specified.

3. The combination of the handle A, slotted at B and *h* and channeled circumferentially at *m*, the screw H in the end of said handle, the lever C, having shoulders *b c d*, and pivoted at *a* within said handle, the rotatable bit-stock E, having slots *o* at its inner end and socket *n* at its outer end, and mounted upon the handle A by the screw F engaging with the channel *m*, and the locking-bar D, having the pin *g* engaging the lever C and movable in the slot *h* of the handle A, substantially as shown.

4. The combination of the handle A, having the slot *h*, the bit-stock E, mounted and rotatable upon said handle and having slots *o* upon its inner end, and the locking-bar D, mounted upon said handle and movable longitudinally by its pin *g* in the slot *h*, and the lever C, pivoted to said handle and having shoulders *c d*, to engage with the pin *g* to bring the bar D into and out of engagement with the slots *o* of the bit-stock, substantially as described.

5. The combination of the handle A, having the slots B and *h* and the circumferential channel *m*, the screw H at the end of the handle, the lever C, pivoted at *a* to said handle and having the shoulders *b c d*, the rotatable bit-stock E, having slots *o*, for axially locking the stock of the handle and socket *n*, and mounted upon the handle A by the screw F entering into the channel *m*, and the locking-bar D, having the pin *g* and movable in the slot *h*, substantially as specified.

RICHARD J. BAKER.

Witnesses:

JAMES W. WILLIAMS,
WARREN R. PERCE.