(No Model.)

E. FORD.

EXPANSIBLE BIT.

No. 525,386. Patented Sept. 4, 1894.

Fig. 1.

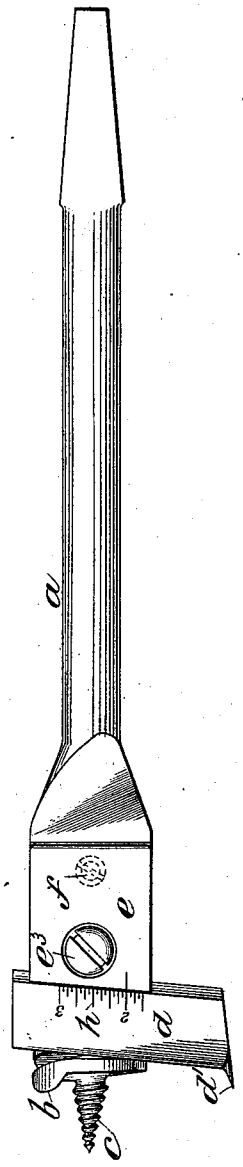
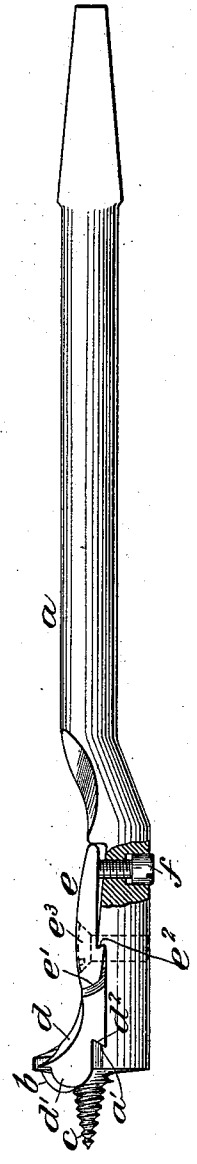


Fig. 2.



Witnesses:-
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UNITED STATES PATENT OFFICE.

ELLSWORTH FORD, OF NEW HAVEN, CONNECTICUT.

EXPANSIBLE BIT.

SPECIFICATION forming part of Letters Patent No. 525,386, dated September 4, 1894.

Application filed March 9, 1893. Serial No. 465,230. (No model.)

To all whom it may concern:

Be it known that I, ELLSWORTH FORD, a citizen of the United States, and a resident of the city and county of New Haven and State of Connecticut, have invented new and useful Improvements in Expansible Bits, of which the following description, taken in connection with the drawings herewith accompanying, is a specification.

My invention relates to that class of bits known as expansible bits, which are usually provided with a stationary cutter and an adjustable cutter; the latter being located on a laterally sliding plate which is supported and adjustable in a suitable groove or way in the shank of the bit, in which it is adjustably locked to hold the cutter carried thereby in a desired position, by means of a suitable locking device; and my present invention consists in the construction and combination of the several parts forming such locking device for securing the adjustable cutter, in a manner as will hereinafter be described in detail and pointed out in the claims.

The object of my invention is to provide a cheap and simple device for the purpose above referred to, that may be easy and convenient of adjustment and positive in its operation.

Referring to the drawings:—Figure 1, represents a plan view of my improved bit, and Fig. 2, a side view of the same, partly in section.

To explain in detail,—*a* represents the shank of the bit, *b* the fixed cutter, *c* the gimlet, and *d* the adjustable cutter, which latter consists of a plate as shown having the cutting lip or spur *d'* thereon. This adjustable cutter is provided with a tapering shoulder d^2 on its forward edge which is adapted to engage with a correspondingly shaped under-cut shoulder *a'* on the body of the bit, against which it is adapted to be forced and adjustably held in a desired stationary position by means of a locking lever *e*. This locking lever *e* is hinged or pivoted upon the bit in a manner as will hereinafter be set forth, and is provided at one end with a cam surface *e'*, as shown in Fig. 2, which is adapted to engage with the rear edge of the adjustable cutter *d*, when the lever is properly adjusted, to force the cutter against the said under-cut shoulder *a'* on the body of the bit and securely lock the same in a desired position, as will be readily understood. The lever *e* is adjusted or operated to act upon the adjustable cutter as described, by means of an adjusting-screw *f* which is located in the bit in a position, as shown in Fig. 2, to engage at one end with the under side of the lever *e* and be operated from that side of the bit opposite the lever *e*. The cam lever *e* may thus be operated to act upon the adjustable cutter with any required degree of pressure and be held in such position by its said operating screw *f*. The lever *e*, in the present instance shown, is provided with a transversely arranged shoulder e^2 on its under side having an inwardly tapering and slightly rounded or curved surface, which is adapted to engage with a correspondingly shaped shoulder on the bit, on which latter the lever is adapted to hinge or pivot for its operation as before described. The lever is held in position on the bit by a screw e^3. The connection between the parts being somewhat loose in order to allow for the proper movement of the lever. This described form of pivotal connection between the lever *e* and the bit I consider the most desirable for strength and simplicity, although it is obvious that it may be otherwise hinged without departing from the spirit of my invention.

The adjustable-cutter is provided with gage-marks thereon, as shown at *h*, as a convenient means whereby it may be adjusted to bore different sized holes.

Having thus set forth my invention, I do not wish to be understood as confining myself to the particular details of construction as shown and described, as it is obvious that various modifications might be made without departing from the spirit of my invention, but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In an expansible-bit, the combination with the adjustable cutter, of a centrally pivoted rocking lever provided with a cam surface at one end for engaging with said adjustable cutter, and with a shoulder on its under side adapted to engage with an opposing shoulder on the bit on which the lever pivots and has its bearing, and means for engaging

the opposite end of said lever to adjust the same, substantially as described and for the purpose set forth.

2. In an expansible bit, the combination with the adjustable cutter, of a centrally pivoted rocking lever provided with a cam surface at one end for engaging with said adjustable cutter, and an adjusting-screw located in the bit for engaging the opposite end of said pivoted lever to adjust the same, substantially as described and for the purpose set forth.

3. In an expansible bit, the combination with the adjustable cutter, of a pivoted lever adapted to engage at one end with said adjustable cutter, provided with a shoulder thereon adapted to engage with a shoulder on the bit, on which the lever pivots and has its bearing, a screw connecting said lever with the bit at the point of its pivotal connection with the latter, and means for adjusting the lever, substantially as and for the purpose set forth.

ELLSWORTH FORD.

Witnesses:
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