

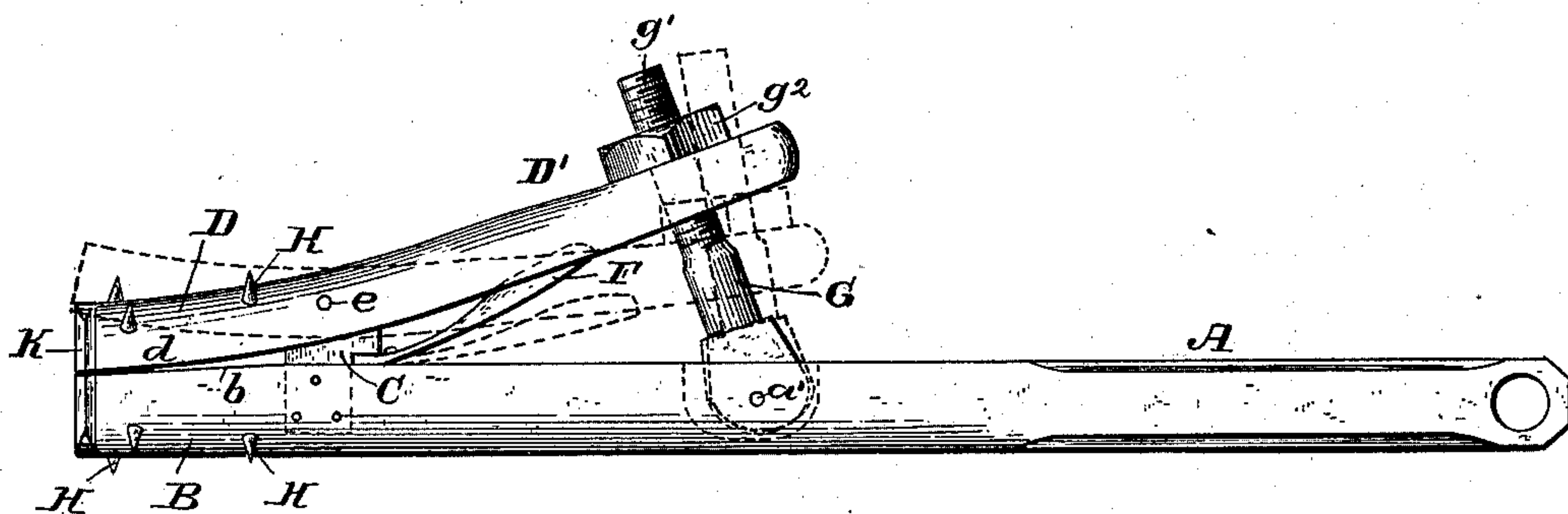
(No Model.)

E. SMITH.  
FASTENING FOR MINING DRILL STOCKS.

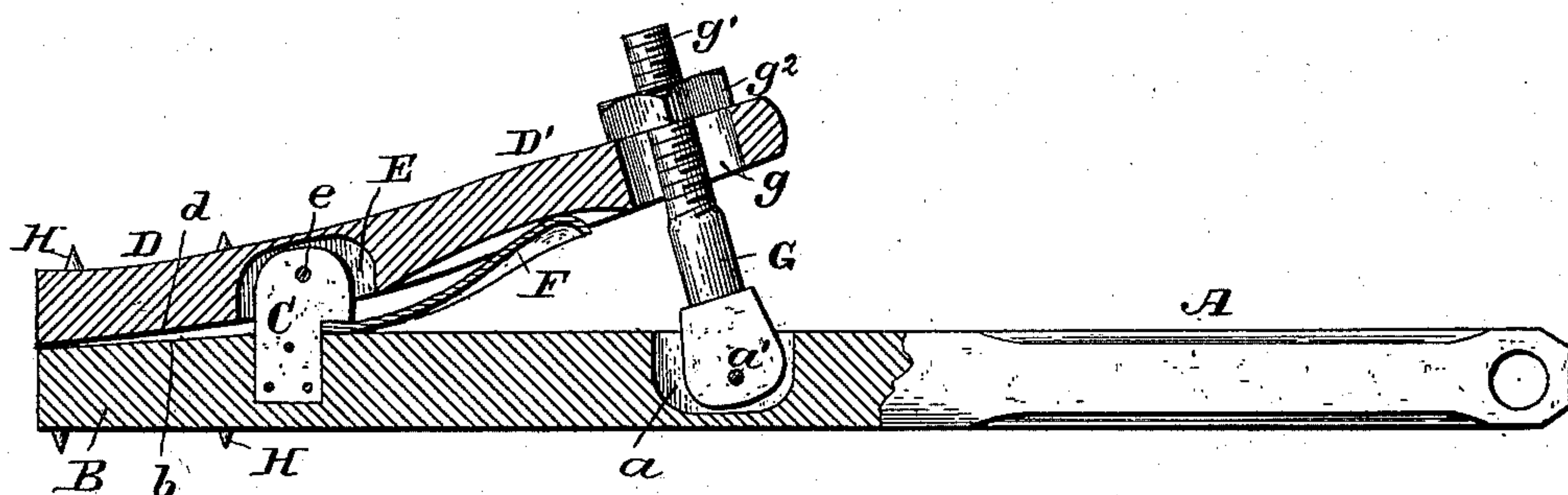
No. 406,782.

Patented July 9, 1889.

FIG.1.



**FIG. 2.**



ATTEST.

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# UNITED STATES PATENT OFFICE.

EDWARD SMITH, OF PLYMOUTH, PENNSYLVANIA.

## FASTENING FOR MINING-DRILL STOCKS.

SPECIFICATION forming part of Letters Patent No. 406,782, dated July 9, 1889.

Application filed April 25, 1889. Serial No. 308,502. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SMITH, a citizen of the United States, residing at Plymouth, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Fastenings for Mining-Drill Stocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the devices employed to secure the stock or frame of a mining-drill in the wall of coal or stone upon which the drill is to be used, and which are generally known as "drill-holding heads," and it more particularly relates to that class of holders in which the head is composed of expansible jaws; and it consists in certain novel construction and arrangement of said jaws and the means employed for operating the same, all of which I will now proceed to point out, describe, and claim, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my said invention, parts of the same being broken away, and dotted lines indicating the position of the jaws when expanded; and Fig. 2 is a partial horizontal section of the same.

Referring to said drawings, A represents the stock of a mining-drill, to the rear end of which the drilling mechanism is adapted to be secured. In the present instance I do not show the same, as it forms no part of my said invention.

On the forward end of the stock, and integral therewith, I form a stationary jaw B, having a rounded outer surface and a flat inner side *b*, slightly cut away toward its outer end. C is a lug or projection having a rounded outer end and rigidly secured to the flat side of the jaw B. To said lug I pivot a movable jaw D, which is similar in construction to the jaw B, having a rounded outer surface and a flat side *d*, in which is formed a recess or slot E, having a rounded bottom, and in which the lug or projection enters, the jaw D being pivoted to said lug by a pin or bolt *e*. When the jaws are closed their ends are close together, thus forming a substantially rounded and wedge-shaped head. The lug or projection

forms the fulcrum of the movable jaw, and, being located between said jaws, presents no projections or shoulders on the outer side of the same which could in any way interfere with the insertion of the head in the hole made for the same in the wall of coal or stone. This is one of the important features of my invention, and its advantages will readily be appreciated.

On the rear end of the jaw D, and formed integral therewith, is a lever-extension D', arranged at an angle to the longitudinal center line of said jaw D and extending out from the stock.

F is a spring secured at one end to the stock, its free end being rounded and engaging with a recess *d* on the inner side of the lever. Said spring serves to force the lever-extension out from the stock and hold the jaws normally closed.

G is an arm or bolt pivoted at one end within a slot *a* in the stock by means of a pin *a'*. Said pivoted arm or bolt projects out from the stock, and extends through an elongated slot *g* in the rear end of the lever D'.

*g'* is a screw-thread on the arm or bolt, and *g''* a nut mounted on the same, which nut engages with the outer side of the lever, and by screwing the same upon the arm or bolt said lever is drawn in toward the stock, and the jaws composing the head expanded, causing them to grip against the sides of the hole in which they may have been placed.

The jaws composing the head are provided on their outer rounded surfaces with spurs or teeth H, and their extreme ends with sharpened calks K, which aid materially in causing the jaws to grip the wall and hold the head in place.

The means I employ in pivoting the jaws together is of great advantage, enabling the head to be easily inserted in the hole prepared for the same and firmly secured therein. The spring I employ between the jaws keeps their ends together until it is desired to expand the same, when by means of the pivoted screw-threaded arm or bolt and its nut their expansion is readily effected.

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

1. The combination, with the stock of a min-



ing-drill having a stationary jaw formed on its forward end and provided with a lug or projection on its inner side, of a movable jaw recessed or slotted on its inner side to receive the lug of the stationary jaw and pivoted to said lug, and provided with a lever-extension, and means for operating said lever to separate the outer ends of the jaws, all constructed, arranged, and operating substantially as shown and described.

2. The combination, with the stock of a mining-drill having a stationary jaw formed on its forward end and provided with a projecting lug on its inner side, of a movable jaw recessed on its inner side to receive the lug of the stationary jaw and pivoted to said lug, and provided with a lever-extension, a spring interposed between said lever and the stock to hold the lever normally away from the stock and the jaws closed, and means for operating said lever against the tension of its spring to separate the forward ends of the jaws, all constructed, arranged, and operating substantially as shown and described.

3. The combination, with the stock of a mining-drill having a stationary jaw formed on its forward end and provided with a projecting lug on its inner side, of a movable jaw recessed on its inner side to receive the lug of the stationary jaw and pivoted to said lug, and provided with a lever-extension having a slot in its rear end, a screw-threaded arm or bolt pivoted at one end to the stock and projecting through the slot in the lever and being provided with a nut adapted to engage with the outer side of said lever, and when screwed upon said pivoted arm to draw the lever toward the stock and separate the forward ends of the jaws, substantially as shown and described.

4. The combination, with the stock of a mining-drill having a stationary jaw B formed on its forward end provided with a projecting

lug C on its inner side, of a movable jaw D, having a recess E on its inner side to receive the lug C, and pivoted to said lug, and provided with a lever-extension D', having a slot *g* in its rear end, and a screw-threaded arm or bolt G, pivoted at one end to the stock and extending through the slot *g*, and provided with a nut *g*<sup>2</sup>, engaging with the outer side of said lever, all constructed, arranged, and operating substantially as shown and described, as and for the purpose set forth.

5. The combination, with the stock of a mining-drill having a stationary jaw B formed on its forward end provided with a projecting lug C on its inner side, of a movable jaw D, having a recess E on its inner side to receive the lug C, and pivoted to said lug, and provided with a lever-extension D', having a slot *g* in its rear end, a spring F, interposed between the stock and lever to hold said lever normally away from the stock and keep the jaws closed, and a screw-threaded arm or bolt G, pivoted at one end to the stock and extending through the slot *g*, and provided with a nut *g*<sup>2</sup>, engaging with outer side of said lever, all constructed, arranged, and operating substantially as shown and described.

6. The combination, with the stock of a mining-drill having a stationary jaw formed on its forward end, of a movable jaw pivoted to said stock and having a lever-extension, a spring interposed between the lever and the stock to hold said lever normally away from the stock and the jaws closed, and means for operating the lever against the tension of the spring to separate the forward ends of the jaws, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD SMITH.

Witnesses:

J. A. OPP,

JOHN B. DAVIES.