(No Model.)

J. CHANTRELL.

BIT STOCK.

No. 284,275. Patented Sept. 4, 1883.

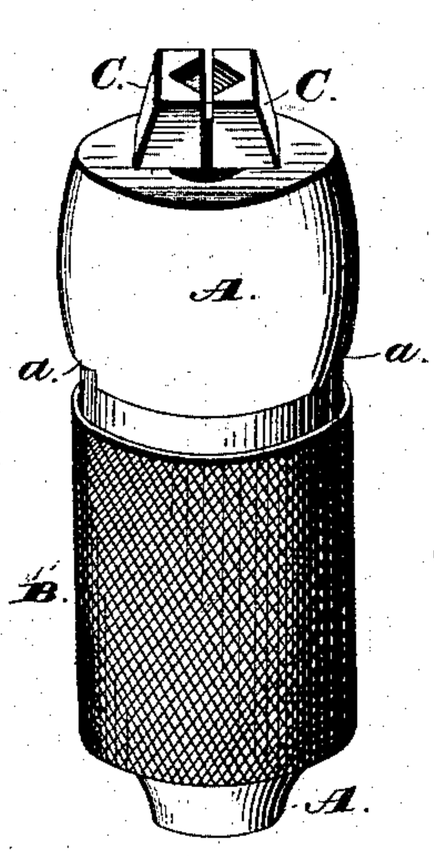


Fig. 1.

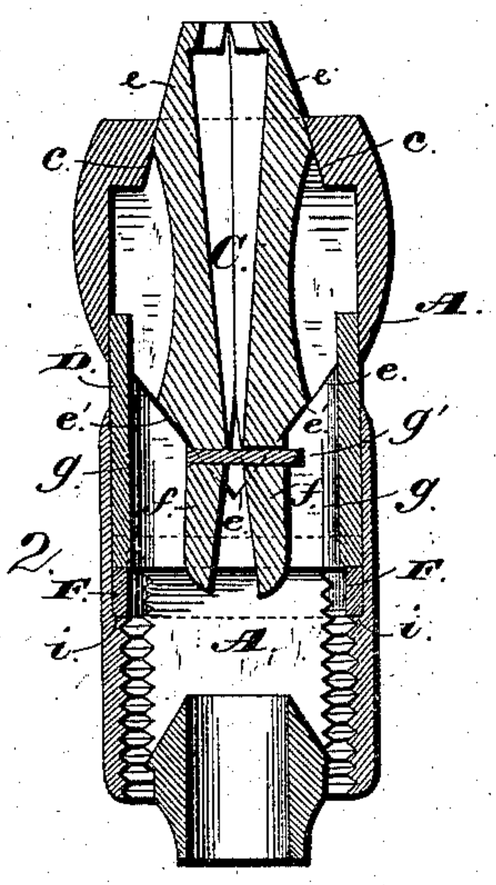
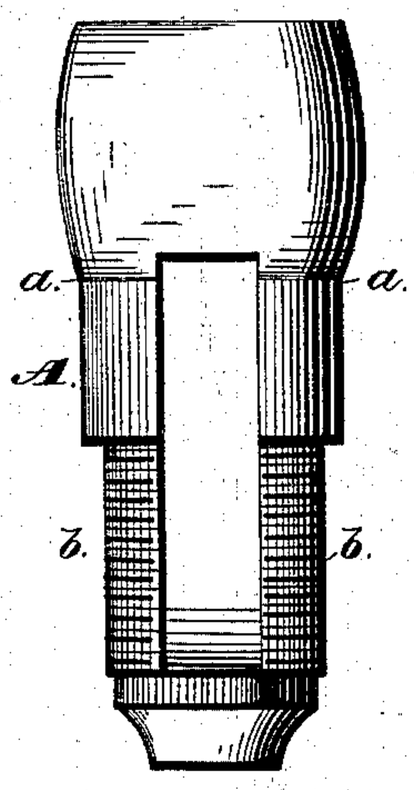
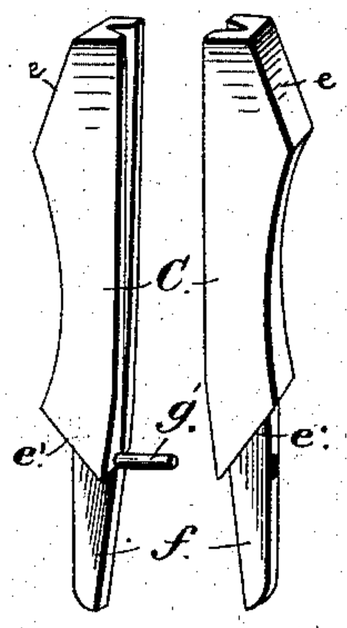
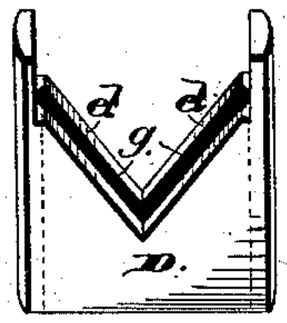
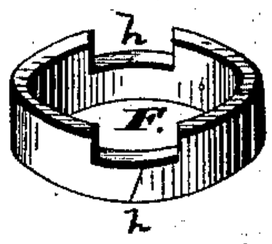


Fig. 2.









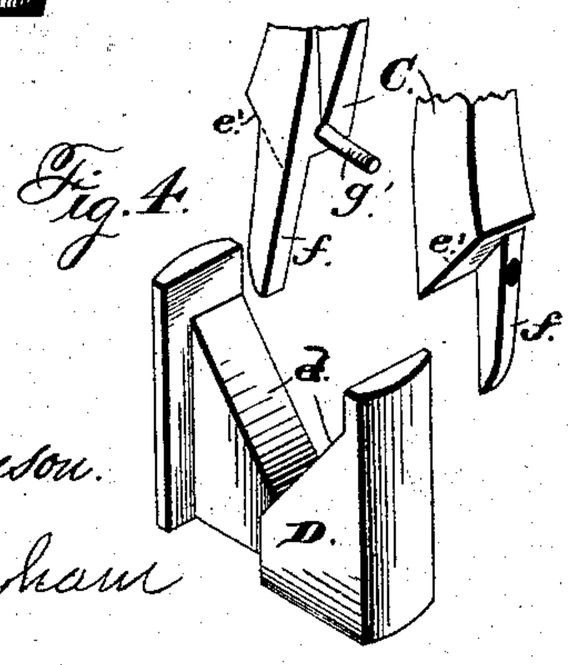


Fig. 4.

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN CHANTRELL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO HAZELTINE & CHANTRELL, OF SAME PLACE.

BIT-STOCK.

SPECIFICATION forming part of Letters Patent No. 284,275, dated September 4, 1883.

Application filed May 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHANTRELL, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Bit-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 an improvement in bit-stocks, the object of the same being to provide a simple and convenient stock that will clamp the shank of the bit at its upper and lower ends and hold it solidly in position. A further object is to provide means whereby the holding-jaws are caused to separate when the holding-pressure on the bit is released; and with these ends in view my invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my improved stock. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 shows the parts detached, and Fig. 4 is a view showing a modified form of the follower and holding-jaws.

A represents a bit-stock of ordinary shape, the outer or free end of which is enlarged and provided with a socket for the reception of the holding-jaws and follower. This hollow end or head is open on opposite sides nearly throughout its entire length, and is provided about midway with the shoulders *a*, which limit the upward movement of the sleeve B, and with the screw-threaded portion *b*, with which the said sleeve engages. This head is provided internally, near its outer end, with the outwardly-converging inclined bearing-surfaces *c*, against which the outer ends of the holding-jaws C bear, while the lower or inner ends of the said jaws are supported on the inwardly-converging inclined surfaces *d* of the follower D. The holding-jaws C are each provided, near their outer ends, with the beveled or inclined bearing-faces *e*, which latter rest and bear against the inclined bearing-surfaces *c* of the head. The inner faces of both holding-jaws are recessed for the reception and retention of the bit. The inner ends of the holding-jaws are provided with the inclined bearing-faces *e'*, which latter rest and move on the inwardly-converging inclined surfaces *d* of the follower D. Each jaw is provided at its inner end with a downward extension or continuation, *f*, which latter rest in the open slot *g* of the follower D and hold the jaws in position against displacement. The inner or adjacent edges of the jaws C are made parallel with each other throughout that portion of their length that is employed in grasping the shank of the bit, while their lower portions diverge, and hence there is insured a rocking movement of the jaws on one another. The follower D rests and is adapted to be moved in the slotted head and force the holding-jaws toward the outer open end thereof. The inclined inner or lower faces of the holding-jaws, being supported on the inclined faces of the follower, will allow the jaws to descend by their gravity, and by reason of the diverging faces of the lower ends of the jaws their upper ends will be separated for the insertion of the shank of the bit. When the bit-shank is inserted and forced downwardly between the jaws, the lower ends thereof are forced apart, and hence are moved outwardly on the inclined faces of the follower. This movement serves to force the outer ends of the jaws together, and hence the simple act of inserting the shank causes the jaws to grip it evenly throughout its length. By lowering the sleeve B the follower is then forced outwardly, which has the effect of forcing both ends of the jaws together, and thus tightly clamping the entire length of the bit-shank. As soon as the bit is released, the jaws are also released and settle down on the follower, the lower inclined ends thereof seeking the lowest possible position. This forces together the lower ends of the jaws and opens the upper ends thereof, and leaves the bit free to be withdrawn. The jaws are also retained against accidental displacement by the pin *g'*, which latter is rigidly secured to one jaw near its lower end, and passes through a corresponding opening in the other jaw.

The follower D rests on and is supported by the collar F, which latter encircles the screw-threaded portion *b* of the head of the stock, and is free to move longitudinally thereon. This collar is provided on its outer edge, on diametrically-opposite sides, with

the open slots or recesses *h*, in which the inner ends of the follower rest. As the follower is only free to move longitudinally, it follows that the collar F is only free to move in the same direction. The collar F rests on the annular shoulder *i* of the sleeve G, and its movement, and consequently the movement of the follower and holding-jaws, is dependent on the movement of the sleeve. The lower half of the sleeve B, or the portion thereof below the shoulder *i*, is internally screw-threaded for engagement with the screw-threaded portion *b* of the head of the stock, while that portion thereof above the shoulder *i* is adapted to overlap the smooth portion of the head outside or beyond the shoulder *a*. The outer surface of the sleeve is roughened to enable it to be grasped without slipping. When the sleeve B is turned in the proper direction, the collar is forced outwardly, and in turn moves the follower and the holding-jaws. When the motion of the sleeve is reversed, the sleeve moves inwardly on the screw-threaded portion of the head of the stock and leaves the jaws, follower, and collar free to follow by gravity. By means of the pin *g'*, the jaws are caused to move simultaneously, which not only prevents one jaw from falling lower than the other, but also automatically centers the bit and obviates trouble and inconvenience, which would necessarily result if the jaws were not held in the same plane.

Instead of slotting the follower and passing the jaw extensions *f* through the said slots, the follower can be cut away on opposite sides, and the extensions *f*, instead of branching from the center of the inner ends of the jaws, can connect therewith, respectively, on opposite sides, so as to straddle the follower instead of passing through the same. This construction is shown in Fig. 4 of the drawings.

The device is exceedingly simple in construction, is durable and effective in use, and can be manufactured at a small initial cost.

I am aware that bit-stocks have been constructed with jaws that are forced together by means of inclined faces on the jaws and the socket in which the jaws are located, and that a screw-threaded sleeve has been employed to open and close the jaws, and hence I would have it understood that I make no broad claim to such construction and combination of parts.

It is evident that slight changes in the construction and relative arrangement of the several parts might be resorted to without departing from the spirit of my improvement, and hence I would have it understood that I do not confine myself to the exact construction shown and described, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a bit-stock, the combination, with a stationary socketed head provided with an external screw-thread, and having inclined bearings at its outer end, of a screw-threaded sleeve, a follower provided with converging inclined bearings, and holding-jaws provided with inclined bearings that engage the inclined bearings on the head and the follower, said jaws being constructed with their adjacent sides outwardly diverging at their lower ends, substantially as set forth.

2. In a bit-stock, the combination, with a stationary socketed head, an adjustable screw-threaded sleeve engaging therewith, and a ring supported on a shoulder formed on said sleeve, said ring provided with slots, of a follower adapted to engage in the slots in said ring, said follower constructed with converging inclined bearings, and holding-jaws having inclined bearings that engage with inclined bearings on the head and the follower, substantially as set forth.

3. In a bit-stock, the combination, with a stationary socket-head having inclined bearings *c c*, the adjusting-sleeve B, ring F, and follower D, having inclined bearings *d d*, of the jaws C, having inclined bearings *e e e' e'*, extensions *f*, and pin *g'*, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN CHANTRELL.

Witnesses:
F. B. KEPPY,
H. E. BOWSER.