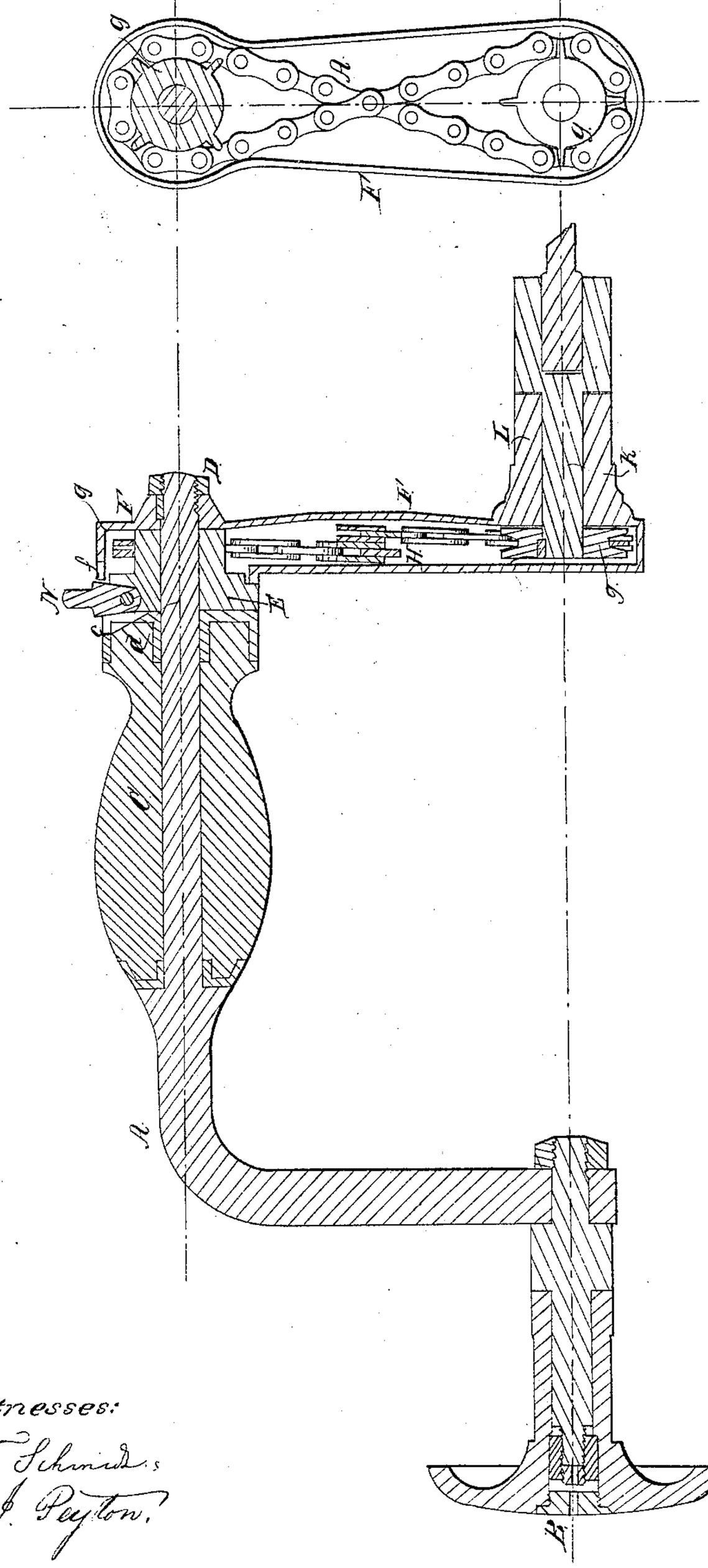
J. A. & H. A. House,

Bit Stock.

No. 49,758. Patented Sep. 5, 1865.



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UNITED STATES PATENT OFFICE.

J. A. HOUSE AND H. A. HOUSE, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN BORING-BRACES.

Specification forming part of Letters Patent No. **49,758**, dated September 5, 1865.

To all whom it may concern:

Be it known that we, J. A. HOUSE and H. A. HOUSE, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Braces for Boring and Drilling; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal central section through our brace, and Fig. 2 is a plan view of the pulleys and multiplying-chain.

It is the object of our invention to give a single brace the three following capabilities: first, to give the bit or drill one revolution with the handle, as in the common brace; second, to multiply the revolutions of the bit or drill without increasing the speed of the handle; and, third, to use either the bit or drill in positions where the handle cannot be made to perform a whole revolution; and to this end our invention consists in a mechanism for locking the handle and stock together, so that the brace can be used with a revolving or with a fast handle; second, in so attaching the lock that when the handle revolves on its axis the bit or drill will make one revolution with each turn of the stock of the brace, and when the handle is locked it will bring into action a mechanism that will multiply the revolutions of the bit or drill; and, third, in so combining the lock with the handle and stock that it will act as a pawl and ratchet, and thus the bit or drill may be effectually used in angles and other places where the brace can perform but a portion of and not an entire revolution.

The stock A carries a breast-shield, B, arranged in the most approved manner to permit the shield to turn freely upon the stock and be retained securely in place.

The handle C is fitted neatly to the forward end, *a*, of the stock, and rests against a socket, E, that is held in position securely by a nut, D, on the extreme forward end of the stock A. The handle is made to revolve freely on the stock, as in the common brace.

The socket E has secured to it a box, F, which rotates with it, and the socket E also carries a toothed wheel, G, which is made fast to it in such a position as to rotate in the center of the thickness of the box F when attached to the socket. The box is made of a suitable width and thickness to carry a link-chain, H, and a second toothed wheel, J, which is pivoted upon a stud, K, that rotates in a collar, L, secured to the outer surface of the box F, and the stud K terminates in a socket, M, which receives the bit or drill, and in which either can be secured by a set-screw, care being taken to have the axis of the shield B and stud K parallel with the axis of the handle C and the stock A.

The flat link-chain H is crossed within the box and receives a motion of rotation from the toothed wheel G and imparts whatever rotary motion it receives to the toothed wheel *g* and the stud on which the wheel is fastened.

To the socket E is securely pivoted a sliding stop, N, that vibrates longitudinally in notches in the box F at *f* and in the handle at *c*. Thus when the stop N is in the notch *f* the handle is free to revolve on its axis, and the bit or drill only receives the same number of rotations that are imparted to the stock; but when the stop N is in the notch *c* the socket E is coupled and rotates with the handle, and imparts, through the flat link-chain, an accelerated rotation to the bit or drill, and the degree of this rotation may, of course, be varied by varying the dimensions of the toothed wheels G and *g*; but, as shown in the drawings, their relative sizes are such as to give two revolutions of the bit or drill to one of the stock.

It will readily be perceived that when it is desired to bore in positions that will admit but a vibration, and not a full revolution, of the handle the bit or drill may be kept moving in its proper progression by simply allowing the handle to turn in the hand on its backward movement and holding the handle firmly on the forward movement, so as to give the bit or drill the forward progressive motion required. Thus the stop supplies the place of a pawl and ratchet, and also controls the velocity of rotation of the boring-instrument used in our brace.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Locking the stock of the brace with the drill-stock, substantially in the manner described, for the purpose set forth.

2. The combination of the handle, the flat link-chain, and the drill-stock, substantially in the manner described, for the purposes set forth.

3. The sliding stop or its equivalent, substantially as and for the purposes set forth.

In testimony whereof we have hereunto subscribed our names.

JAS. A. HOUSE.
H. A. HOUSE.

Witnesses:
GEORGE C. BISHOP,
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