

(No Model.)

A. & A. FRANKLIN.
Grain Drill Teeth

No. 230,184.

Patented July 20, 1880.

FIG. 1

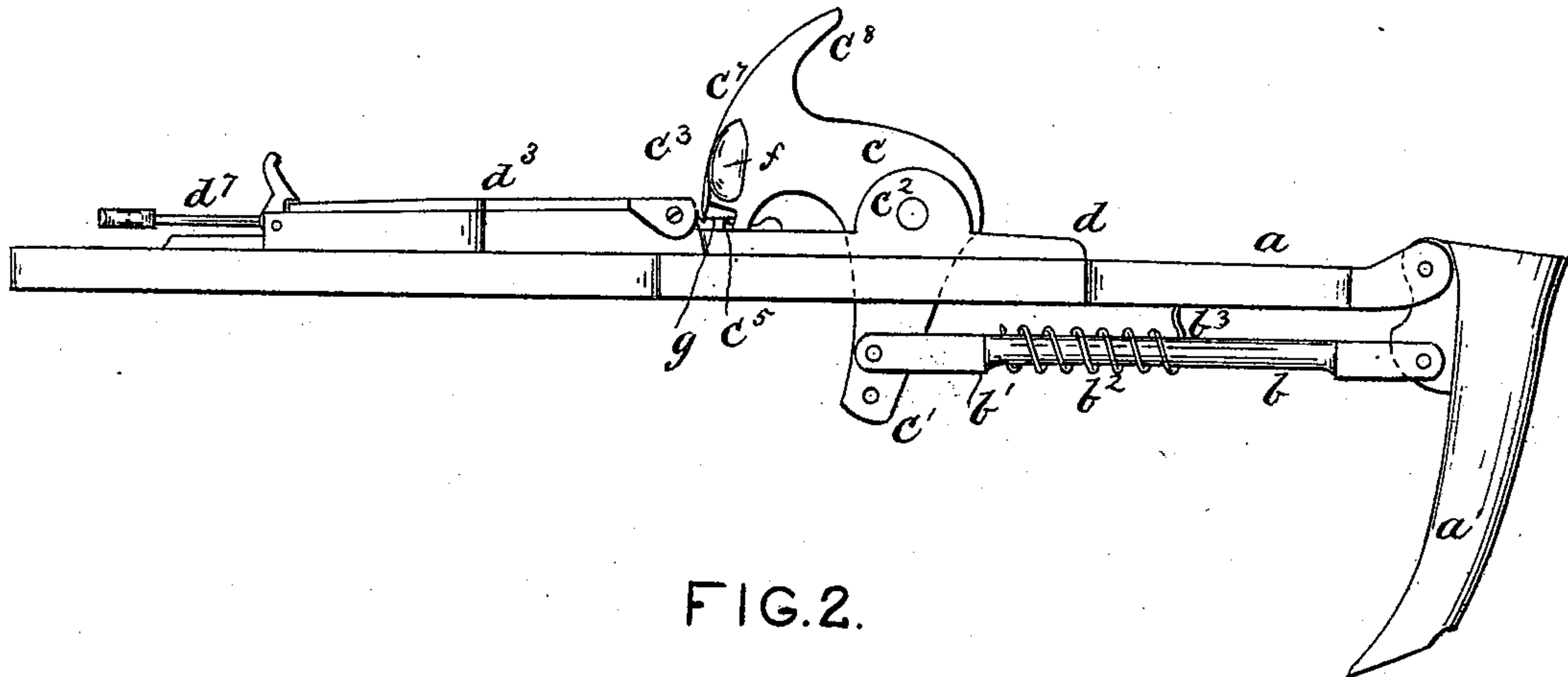


FIG. 2.

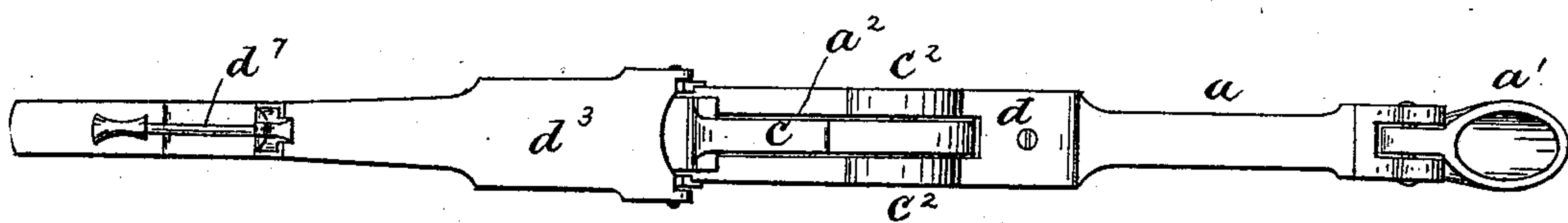
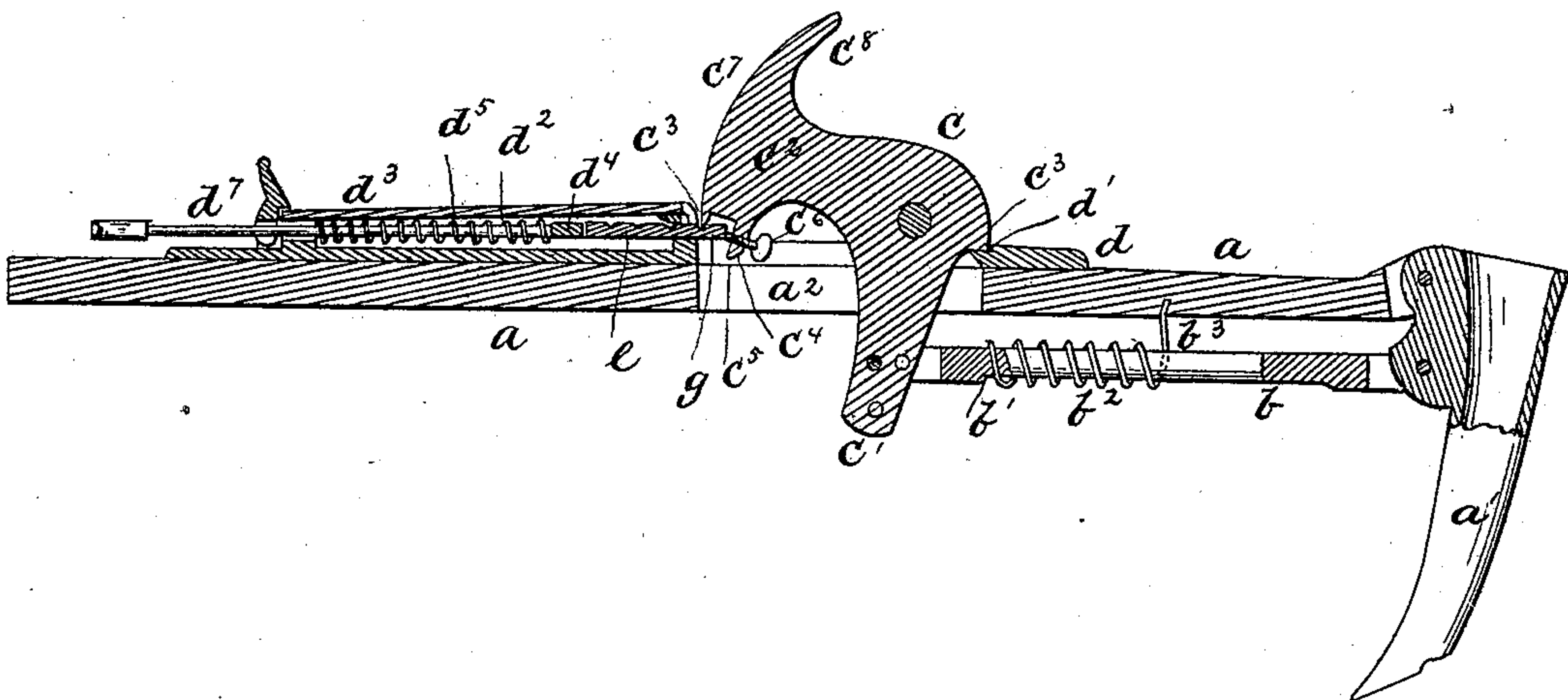


FIG. 3.



Witnesses:

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By R. B. & A. Lacey Attys.

UNITED STATES PATENT OFFICE.

ALBERT FRANKLIN AND ALVIN FRANKLIN, OF WESTERVILLE, OHIO.

GRAIN-DRILL TOOTH.

SPECIFICATION forming part of Letters Patent No. 230,184, dated July 20, 1880.

Application filed May 31, 1880. (No model.)

To all whom it may concern:

Be it known that we, ALBERT FRANKLIN and ALVIN FRANKLIN, citizens of the United States, residing at Westerville, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Grain-Drill Teeth; and we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has for its object to provide a means whereby there will be automatically supplied wooden fastenings for holding the drill-hoe; and it consists in the construction and arrangement of the several parts herein-after explained, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a plan, and Figure 3 is a vertical longitudinal section.

a is the arm or drag-bar, one end of which is attached to the sulky-frame, while on its opposite or rear end is pivoted the drill-hoe a' . To the drill-hoe is fitted a short retaining-arm, b , which extends forward immediately under the drill-arm a , and is furnished with a shoulder, b' , against which abuts one end of a coil-spring, b^2 . The coil-spring is wound around the retaining-arm, and has its rear end, b^3 , fixed to the drill-arm a , so that it operates to hold the drill-hoe in the proper position for drilling seed, as shown in the drawings. The spring is intended to hold the drill-hoe rigid in position when the machine is in use, but has sufficient power to retract the hoe when its point has been forced to the rear out of line by contact with an obstruction.

The forward end of the retaining-arm b is pivoted to the lower wing, c' , of a bell-crank lever, c , which is pivoted between two lugs, c^2 , formed, by preference, on a base-board, d , which is fastened on the upper side of the drill-arm a . The wing c' passes down through a mortise in the board d , and through a mortise, a^2 , in the arm a . The lever c is provided with a shoulder, c^3 , which abuts against a stop, d' , on the rear end of the board d , and

is thereby prevented from turning backward. The upper wing, c^2 , of the lever c is extended forward, and is provided with a knife-edge, c^3 , and with a flange, c^4 , arranged to form a notch, c^5 , between it and the edge c^3 .

c^6 is a set-screw put through the flange c^4 . The head c^7 of the lever c is curved backward from the knife c^3 , and is extended upward in a long wing, c^8 . The head c^7 will pass down into the mortise a^2 , and the wing c^8 serves as a guide to prevent it from catching on the arm a or on the board d , and to aid in its easy return into its position, above shown. On the forward end of the board d , I form a small chamber, d^2 , closed by a cap, d^3 , and in which I place a small follower, d^4 , which is actuated by a spring, d^5 , which is held in place by a stem, d^7 , fixed to the follower and passing through a bearing in the rear end of the chamber. The forward end of the chamber is open, so that a pin-block, e , will slide readily through it and under the knife c^3 on the lever c . The pin-block e is made of light material, and just wide enough to reach across and rest on the board d on opposite sides of the mortise a^2 . It is slightly grooved on its upper surface, as shown in Fig. 3, so that the knife-blade c^3 will more readily cut through it. On the sides of the head of the lever c , just above the knife-blade c^3 , I form recesses f , which receive the broken ends of the retaining-pin and carry them down through the mortise a^2 . Without such recesses the mortise a^2 would have to be made wider than otherwise necessary.

The pin-block e is placed in the chamber d^2 so that the follower d^4 presses against it. The edge of the pin-block is pressed outward and under the knife c^3 and against the end of the set-screw c^6 .

When the machine is started and the point of the drill-hoe enters the ground the force exerted causes the knife c^3 to cut through and split off a small section, g , of the block e . The cut-off section is held in the notch c^5 , and serves as the pin to hold the drill-hoe in place. When the drill-hoe strikes an obstruction and its point is turned back the force exerted operates on the lever c , which breaks the pin g , and the head c^7 turns down through the mortise a^2 , carrying the broken pin with it. As

soon as the hoe is released the spring b^2 throws the several parts back into the position shown in Fig. 1, and the spring d^5 pushes the edge of the block e under the knife, and another pin is thus automatically provided. By means of the set-screw c^6 the size and strength of the pin g can be fully and easily regulated.

The set of the drill-hoe a' may be changed by means of a series of holes formed in the wing c' of the lever c , as shown.

By this construction there is provided an automatic means for immediately providing a new pin in place of the broken one, thereby saving the annoyance and delay attending the ordinary methods.

The spring b^2 is employed to give an automatic action in returning the hoe to its place after the breaking of a retaining-pin. The return could be made by the hand, but we prefer the automatic action hereinbefore described.

The lever c , with its board d , the follower d^4 , and its spring d^5 , can all be constructed together, so that they can be fastened to the drill-frame in machines where the arm a is not employed. The connecting-bar b would, in such cases, have a slight vertical movement on its pivotal fastenings. The application of the device to such machines requires but slight skill.

The automatic feeding of the block e could be dispensed with and the block be fed by hand, or separate pins could be provided and inserted in the notch c^5 by the hand; but we prefer to have the entire mechanism operated automatically, as described.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a drill, a cutting-lever pivoted to the drill-frame and connected by bar or link with the drill-hoe, and provided with a knife or cutting-edge adapted to automatically cut a retaining-pin from a block of wood prepared for the purpose and hold it, substantially as set forth.

2. An automatic device for cutting retaining-pins for drill-hoes, consisting of the lever c , provided with a blade, c^3 , flange c^4 , and set-screw c^6 , combined with the drag-bar of a grain-drill, substantially as set forth.

3. In an automatic device for cutting retaining-pins for drill-hoes, the follower d^4 and spring d^5 , arranged in a chamber formed on the base-board d , in front of the cutting-lever, substantially as set forth.

4. In combination with the drag-bar of a grain-drill, the follower d^4 , spring d^5 , with its inclosing-chamber, and lever c , with blade c^3 , substantially as described.

In testimony that we claim the foregoing we have hereunto set our hands this 29th day of April, 1880.

ALBERT FRANKLIN.
ALVIN FRANKLIN.

Witnesses:

M. CLOSSON,
RALPH SMITH.