

J. O. BROWN.
Cutter and Cutter Fingers.

No. 230,858.

Patented Aug. 10, 1880.

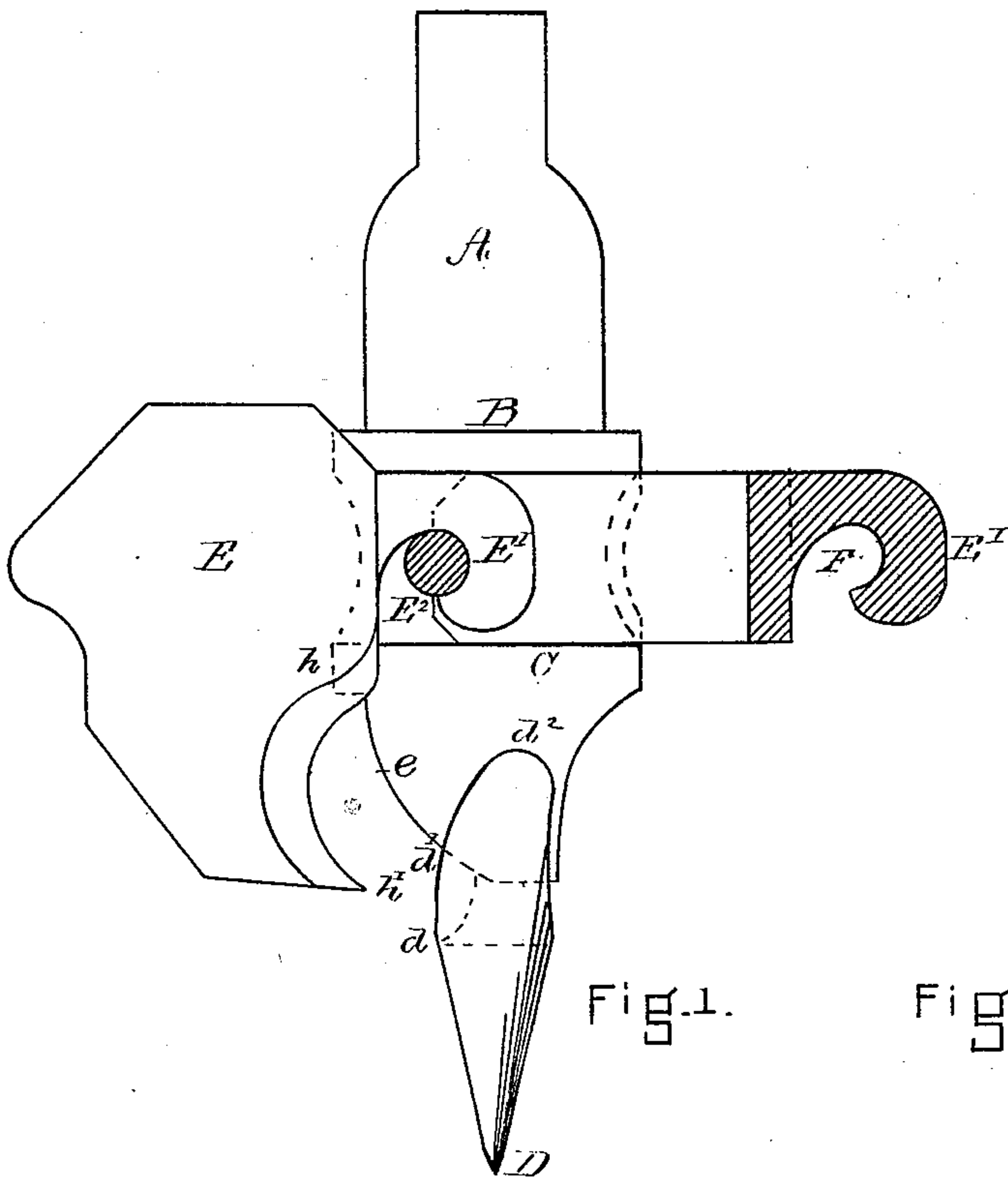


Fig. 1.

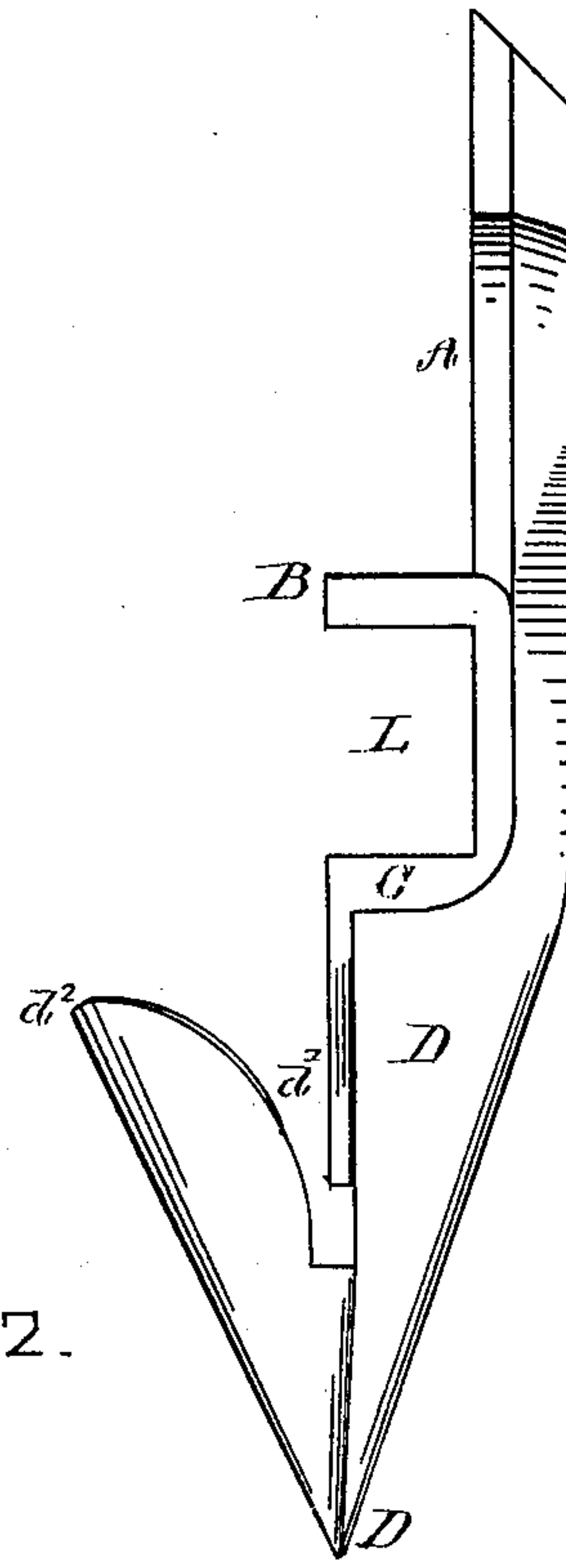


Fig. 2.

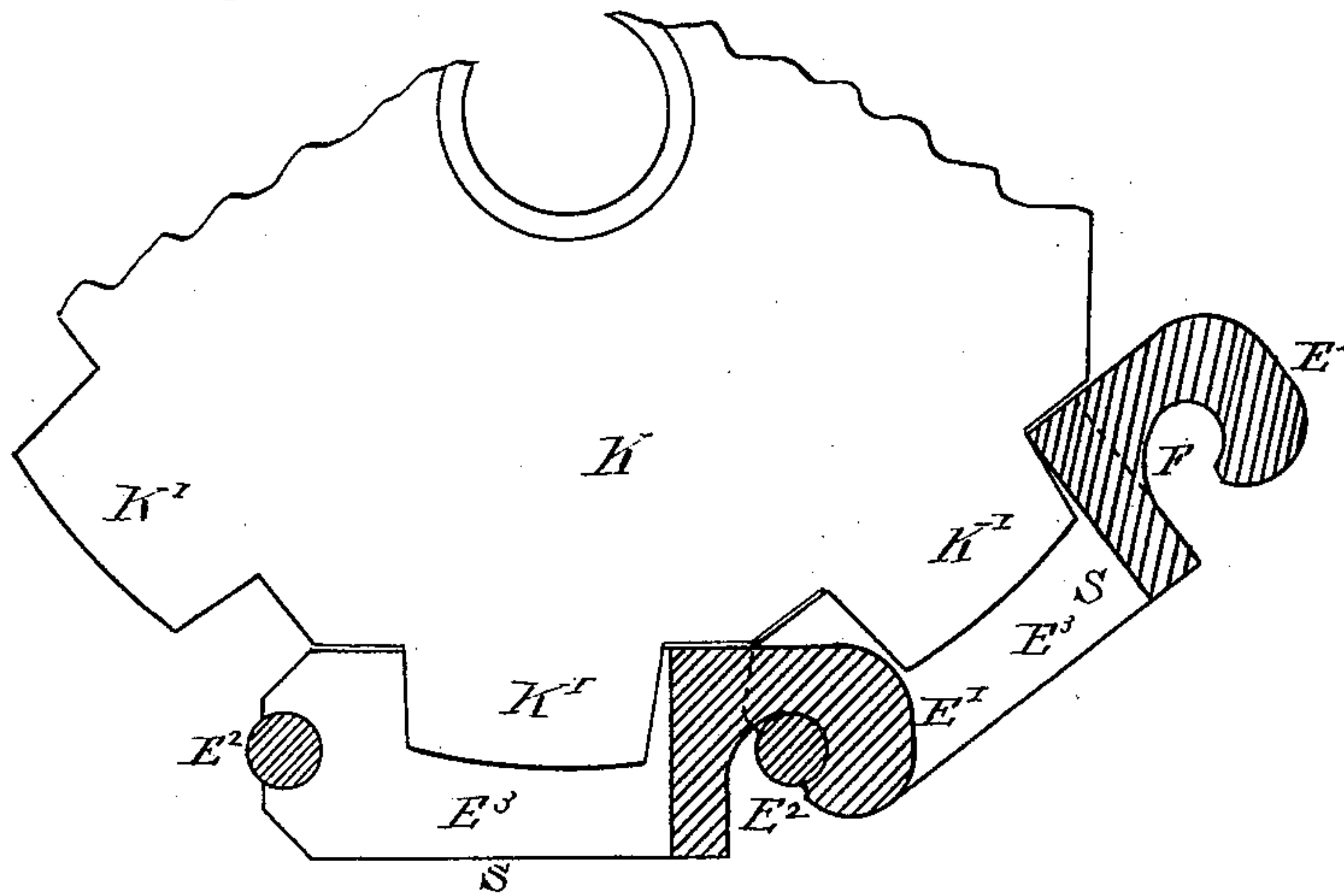


Fig. 3.

WITNESSES

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INVENTOR

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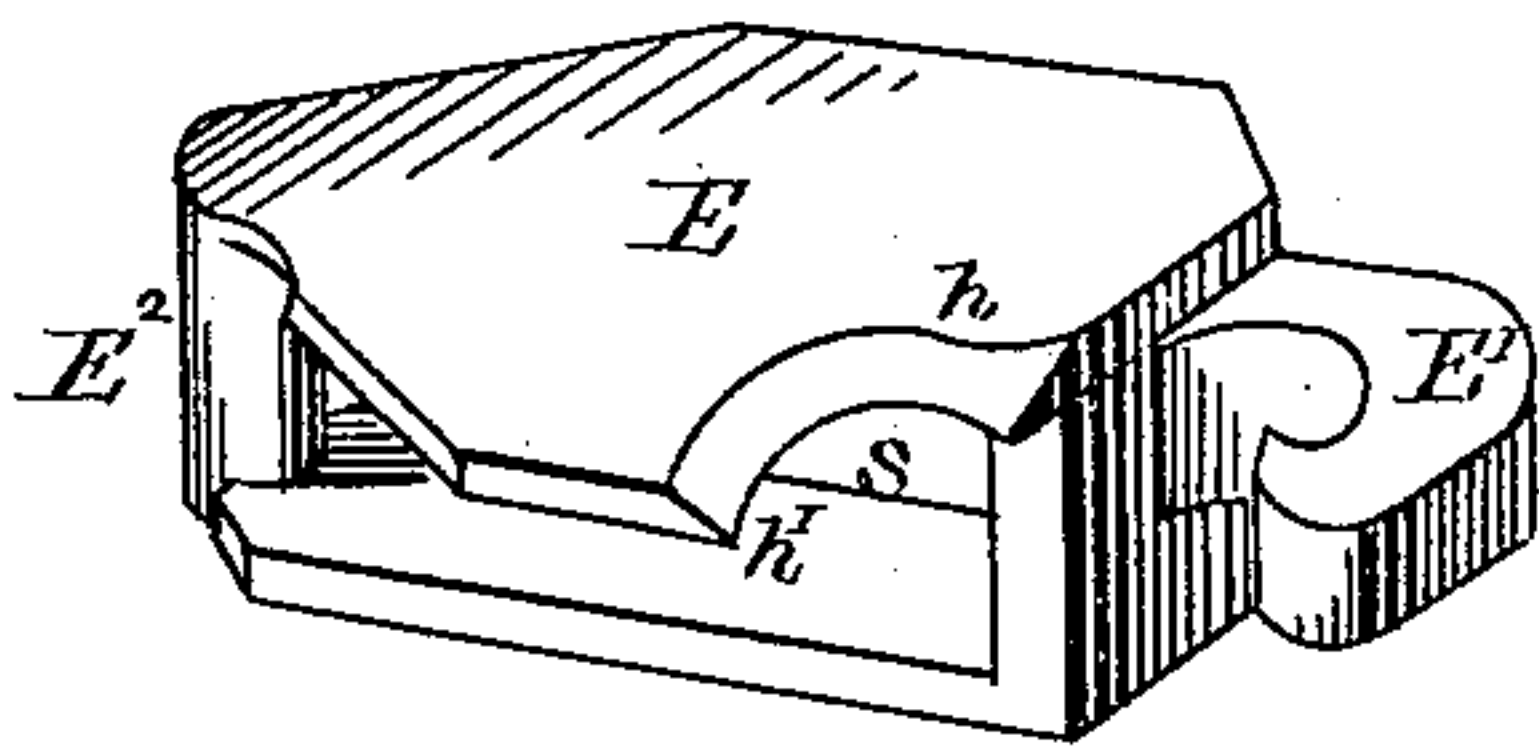


Fig. 4.

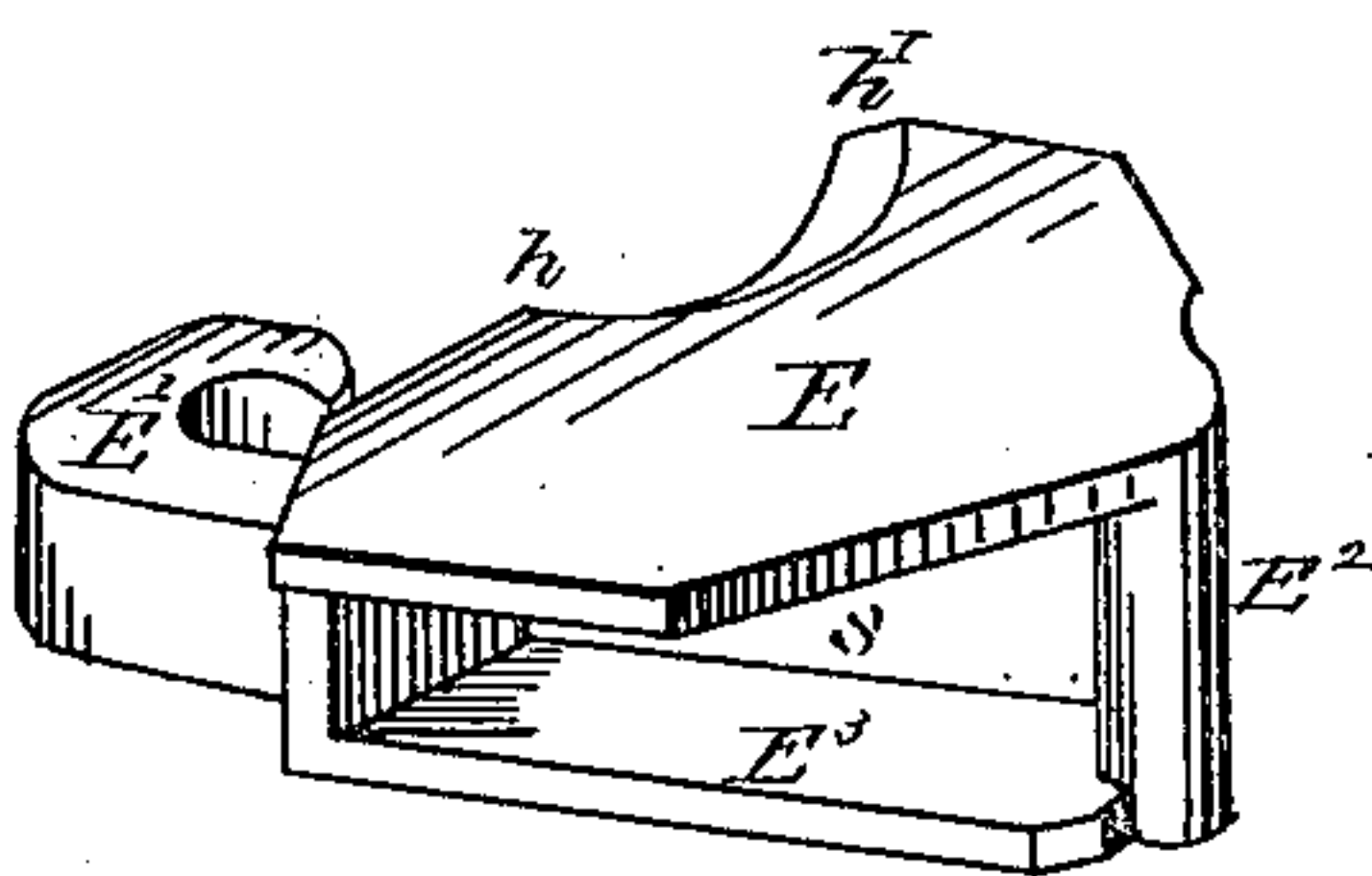


Fig. 5.

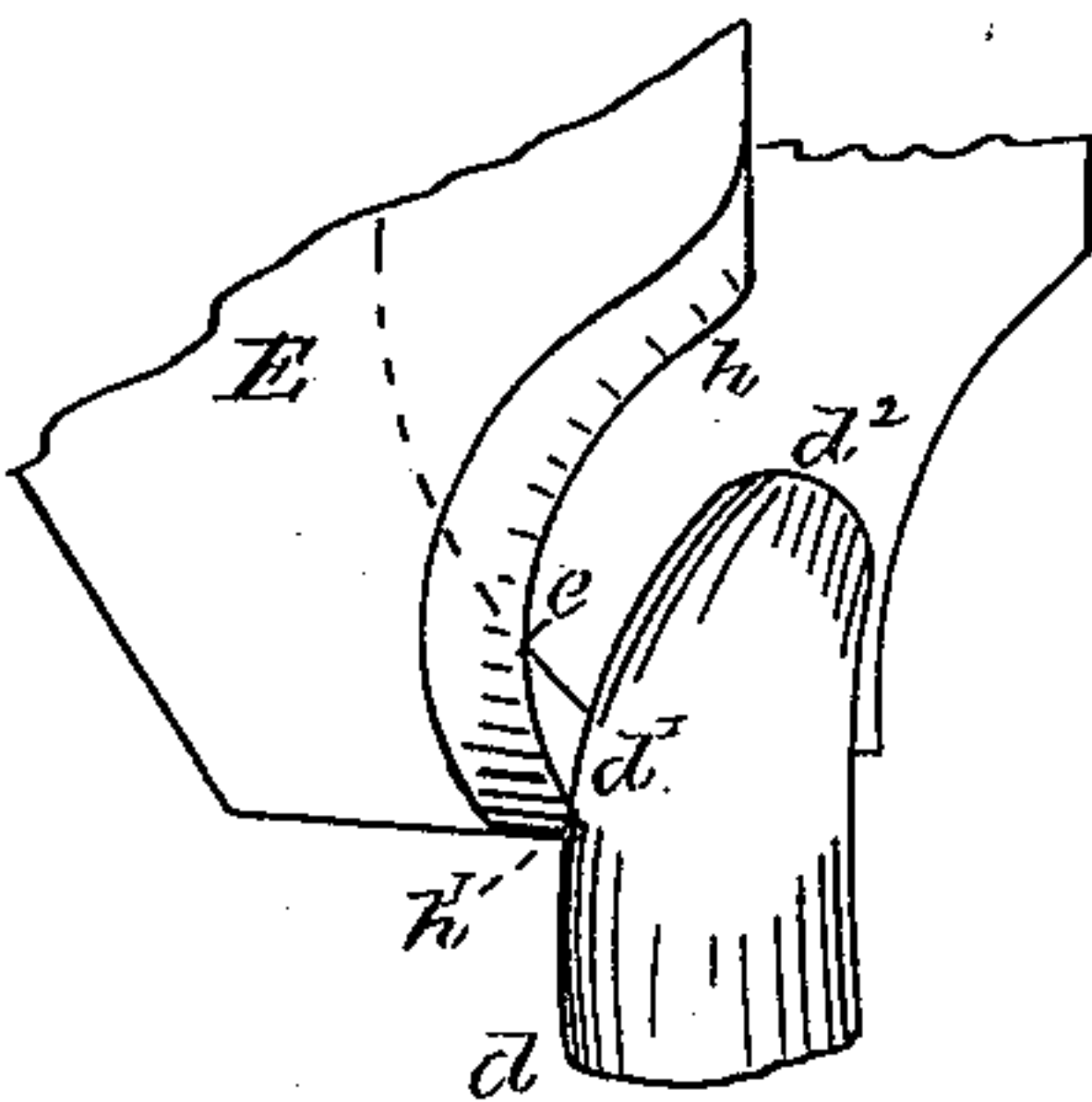


Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES O. BROWN, OF BANGOR, MAINE.

CUTTER AND CUTTER-FINGER.

SPECIFICATION forming part of Letters Patent No. 230,858, dated August 10, 1880.

Application filed December 11, 1879.

To all whom it may concern:

Be it known that I, JAMES O. BROWN, of Bangor, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Cutters and Cutter-Fingers, of which the following is a specification.

My invention relates to that part of the mowing-machine the immediate function of which is to cut the grass, to direct its fall, and to guard against entanglement; and it consists, first, in the shaping and combining of the cutting-blades; second, in the shaping adaptation of the blades and the rear part of the guard or finger for the purpose of giving direction to the fall of the grass and for preventing the entanglement; third, in the construction of what I call my "cutter-link," namely, the combination, in a single piece, of the knife, the sprocket-recess, the hook, and the hook-pin, all of which constitute a knife and a detachable link for the sprocket-chain.

In the drawings, Figure 1 is a plan showing one of the fingers, one of the cutting-links in full, and a horizontal section of a second link, the knife on this second link not being shown. Fig. 2 is a side view of one of the fingers. Fig. 3 shows a part of a sprocket-wheel and two of the links in horizontal section, the knives not showing. Figs. 4 and 5 are perspective views, showing my cutter-link in different positions. Fig. 6 is a sketch to illustrate the action of the cutters and the fingers in giving direction to the falling grass.

A D in Figs. 1 and 2 is one of the fingers of my machine. The exact shape and size of the part A are of little importance; but the shape and arrangement of the part D $d d^2$, that covers the knife and is called the "cap," Fig. 1, are of great importance, as will be hereinafter explained.

The cap $d d^2$ of the finger which coacts with the cutting device is formed as shown in Figs. 1 and 2. In Fig. 2 it is seen that the cap $d d^2$ has an under surface which curves upwardly, and in Fig. 1 it may be seen that the left-hand-side contour $d d^2$ of the cap curves to the right, or toward the line of motion of the knives, as well as upwardly. In other words, the under surface of the cap is a warped surface curving upwardly and twist-

ing toward the right, or in the direction of the motion of the knives, Figs. 1 and 6.

e represents the fixed cutting-edge, and is a part of the finger.

A slot, L, Fig. 2, is made in the finger between the parts B and C, Figs. 1 and 2. This slot governs the position of the chain-cutter.

The chain-cutter consists of a series of links, each link being a cutter, and is made as follows: The part E, Figs. 1, 4, and 5, forms the upper side of the link and the blade of the cutter. In connection with this part E, I form the hook E' , the hook-pin E^2 , and the bottom plate, E^3 , of the link. These several parts being all in one piece and together, they form a complete knife and a detachable link of a sprocket-chain, the recess S being so formed that when the hook E' of the next link is connected to the hook-pin E^3 , as shown in Fig. 3, then the sprocket K' fits the remaining space in S, so that the chain will be accurately adjusted to the sprocket K' of the sprocket-wheel K, as shown in Fig. 3.

The knife E has a curved cutting-edge, $h h'$, Figs. 1, 4, 5, and 6, so that in action it has a tendency to draw the top of the grass over toward the machine and cause it to fall backward and thus clear of the machine. This result is greatly enhanced by the shape of that part of the finger marked $d d^2$, Figs. 1 and 2.

Heretofore the trouble in endless-chain mowing-machines has been that the space left between the cap and the fixed blade for the passage of the cutters would soon clog up and prevent the action of the machine.

In perfecting the endless-cutter movement I found that the old guard with a closed top would not work without clogging, because the steady movement of the knife will draw the grass under the caps and clog it at once. In order to perfect a finger or guard for this movement to prevent its clogging or drawing the grass under the caps on the guard over the knife, I use the cap with the under-curved and twisted surface on the guard or finger over the knife, which causes the cut grass or grain to pass away from the knives without clogging. (See Fig. 6.)

I claim—

1. In a mowing-machine, the combination of

the knife E, having a concaved cutting-edge, *h h'*, with the convex cutting-edge *e* of the finger, operating together substantially as described, and for the purpose set forth.

5 2. In a mowing-machine, the combination of the cutting device E, *h h'*, and *e* with the cap *d d' d²*, all operating together substantially as described, and for the purpose set forth.

10 3. In a mowing-machine, the combination of the finger A D with the cap *d d' d²*, said cap being provided with an under surface which curves upwardly and toward the direction of

the motion of the knives, substantially as described, and for the purpose set forth.

4. In combination with the mechanism of a 15 mowing-machine, the combined cutter and sprocket link, consisting of a blade, E, hook E', hook-pin E², base E³, and sprocket-recess S, made in a single piece, substantially as described, and for the purpose set forth.

JAMES O. BROWN.

Witnesses:

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