(No Model.)

C. H. CURTIS & C. E. ATWATER.

CLIPPER.

No. 567,583. Patented Sept. 15, 1896.

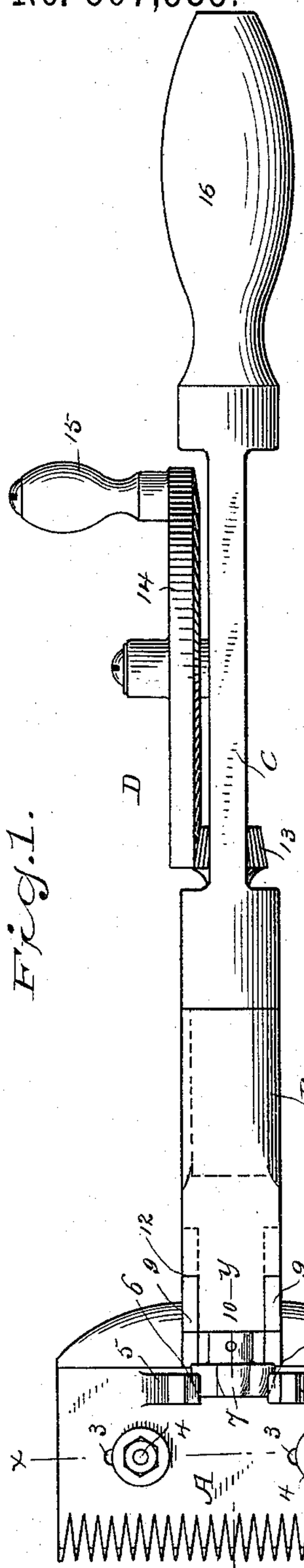

Fig. 1.

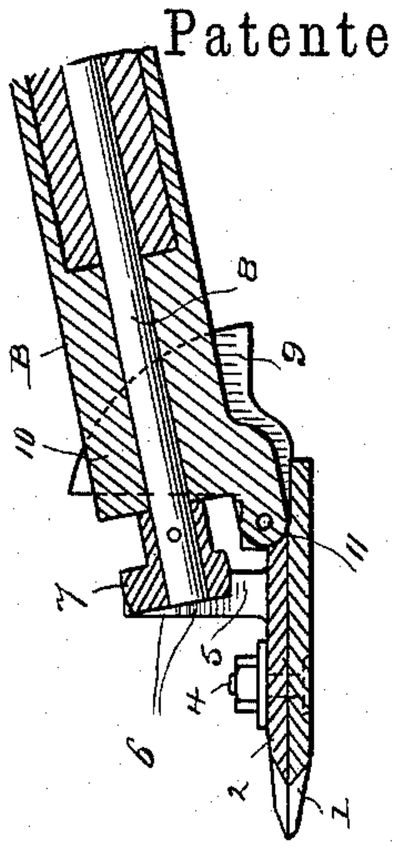

Fig. 4.

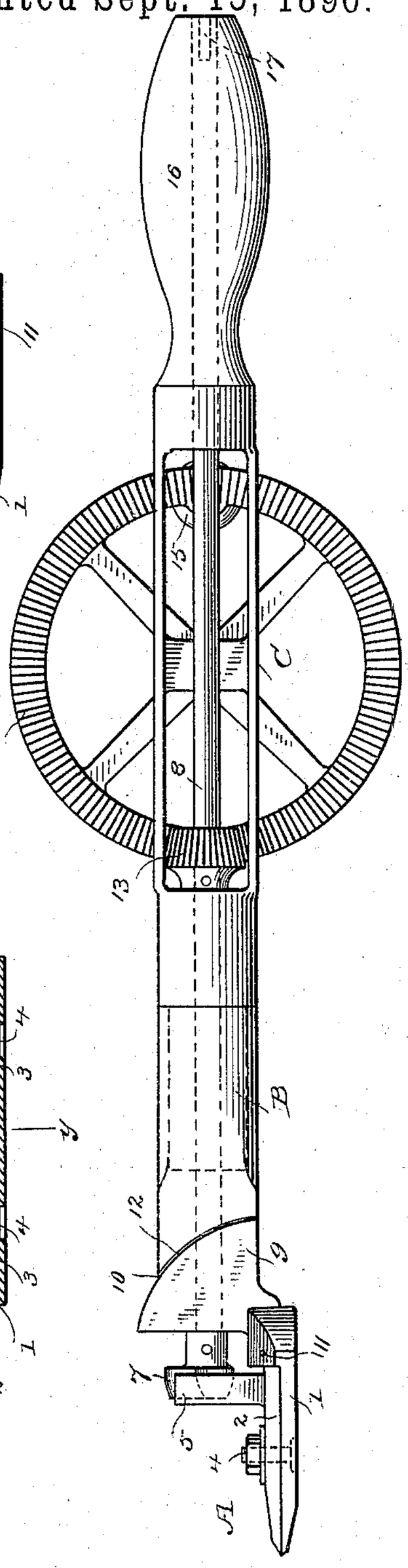

Fig. 2.

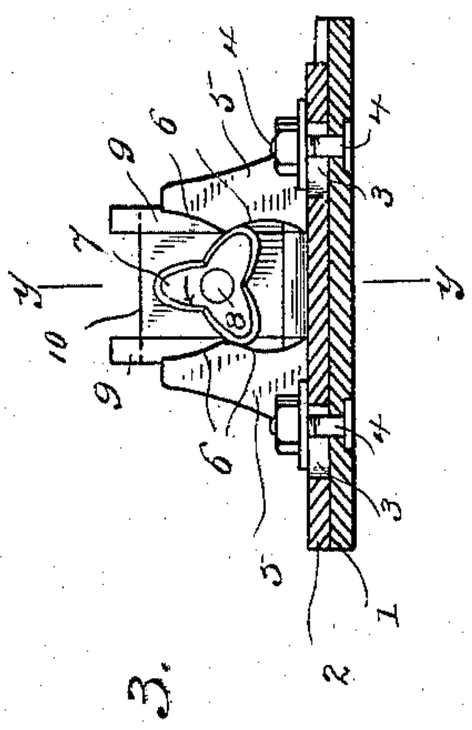

Fig. 3.

WITNESSES

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CLIPPER.

SPECIFICATION forming part of Letters Patent No. 567,583, dated September 15, 1896.

Application filed February 17, 1896. Serial No. 579,498. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. CURTIS, residing at Derby, and CHARLES E. ATWATER, residing at New Haven, in the county of New Haven and State of Connecticut, citizens of the United States, have invented certain new and useful Improvements in Clippers; 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.

Our invention has for its object to provide a clipper adapted for general use, but more especially adapted for horse-clipping, which may be driven either by hand or by power, and which shall be so constructed as to permit universal movement of the clipper-head relatively to the body.

With these ends in view we have devised the novel clipper of which the following description, in connection with the accompanying drawings, is a specification, letters and numerals being used to designate the several parts.

Figure 1 is a plan view of the cutter-head with the driving-gear in edge view; Fig. 2, an edge view of the cutter-head with the driving-gear in plan; Fig. 3, a section on the line $x\ x$ in Fig. 1, and Fig. 4 is a section on the line $y\ y$ in Figs. 1 and 3.

A denotes the cutter-head; B, a sleeve by which it is carried; C, the body, and D driving mechanism. The cutting mechanism is of ordinary construction and consists of a guard-plate 1 and a cutter-plate 2, having slots 3 and bolts 4, passing through said slots, by which the plates are secured together, leaving the cutter-plate free to reciprocate on the guard-plate. The cutter-plate, as shown, is provided with two uprights 5, having cam-surfaces 6, which are engaged by a cam 7, in the present instance a triple cam, carried by a driving-shaft 8, which has its bearings both in the body and in the sleeve, as clearly shown in Fig. 4, it being understood that the sleeve, and with it the cutter-head, may oscillate freely relatively to the body.

The cutter-head is shown as provided with side plates 9, which, in the present instance, are made integral with the guard-plate, and the sleeve is shown as provided with a central plate 10, lying between plates 9. The construction may of course be reversed and the side plates placed upon the sleeve and the central plate on the cutter-head, if preferred. Plates 9 and 10 are pivoted together, as at 11. The edges of the side plates are shown as curved in an arc of a circle, of which pivot 11 is the center, and the sleeve as provided with corresponding recesses 12 to receive them. It will be seen that this construction permits free oscillation of the cutter-head relatively to the sleeve and body in a plane at right angles to the plane of oscillation of the sleeve, the center of oscillation of the cutter-head being at pivot 11, as clearly shown in Fig. 4. It will be noticed in Fig. 3 that the bearing-surfaces of the cam upon cam-surfaces 6 are beveled, so that the cam will act equally well at any angle in which the sleeve may be placed relatively to the cutter-head. This oscillatory movement of the cutter-head relatively to the sleeve, in connection with the oscillatory movement of the sleeve relatively to the body, enables us to place both body and cutter-head in any position that may be most convenient in clipping a horse without stopping the movement of the cutters. In Figs. 1 and 2 we have shown the driving-shaft as provided with a bevel-pinion 13, which engages a bevel-gear 14, which is pivoted upon the body.

15 denotes a handle placed at the edge of the bevel-gear, which serves as a crank.

In Fig. 2 we have shown the driving-shaft as extending entirely through the body, which is provided with a hand-piece 16 for convenience in manipulation. The outer end of the driving-shaft is shown as provided with a socket 17 (see dotted lines Fig. 2) to receive a head at the end of a flexible shaft or for the application of power in any ordinary or preferred manner.

Having thus described our invention, we claim—

1. The combination with the body and a driving-shaft having at its outer end a cam, of a sleeve adapted to freely oscillate rela-

tively to the body, a cutter-head pivoted to the sleeve so that it may freely oscillate in a plane at right angles to the plane of oscillation of the sleeve and a cutter-plate having uprights provided with cam-surfaces adapted to be engaged by the cam so that the cutter-plate may be reciprocated in any position in which the sleeve may be placed relatively to the cutter-head.

2. The combination with the body and a driving-shaft having a cam at its outer end, of a sleeve adapted to freely oscillate relatively to the body and a cutter-head comprising a guard-plate and cutter-plate, said cutter-plate having uprights provided with cam-surfaces which are engaged by the cam.

3. In a clipper the combination with a sleeve B having a plate 10, and a driving-shaft, of a cutter-head comprising a guard-plate and a cutter-plate, said guard-plate being provided with side plates pivoted to plate 10 so that the cutter-head may oscillate in a plane at right angles to the plane of the sleeve.

4. In a clipper the combination with a sleeve B having a plate 10, and a driving-shaft having a cam at its outer end, of a cutter-head comprising a guard-plate and a cutter-plate, said guard-plate being provided with side plates pivoted to plate 10 so that the cutter-head may oscillate, and said cutter-plate being provided with uprights having cam-surfaces which are engaged by the cam to reciprocate the cutter-plate at any angle at which the cutter-head may lie relatively to the sleeve.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES H. CURTIS.
CHARLES E. ATWATER.

Witnesses:
REUBEN M. ROSE,
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