

(No Model.)

2 Sheets—Sheet 1.

E. A. COCHRAN.  
HAIR CLIPPER.

No. 526,858.

Patented Oct. 2, 1894.

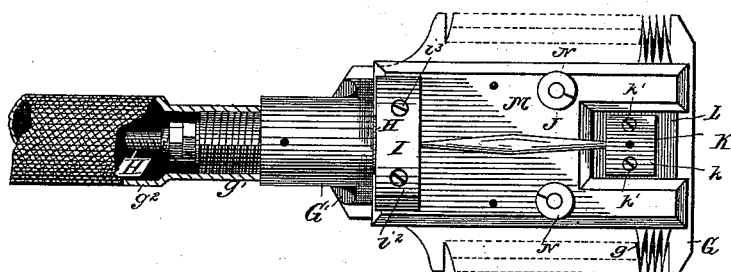


Fig. 1

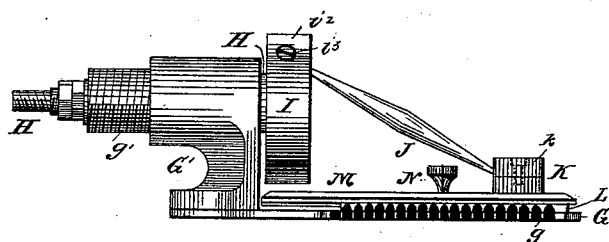


Fig. 2

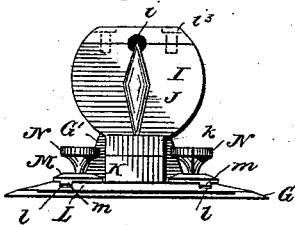


Fig. 3



Fig. 4

WITNESSES:

*Willard A. Baylis*  
*Fors. McPherson*



Fig. 5

INVENTOR

*Edward A. Cochran*

BY

*Henry M. Prigman*  
his ATTORNEY

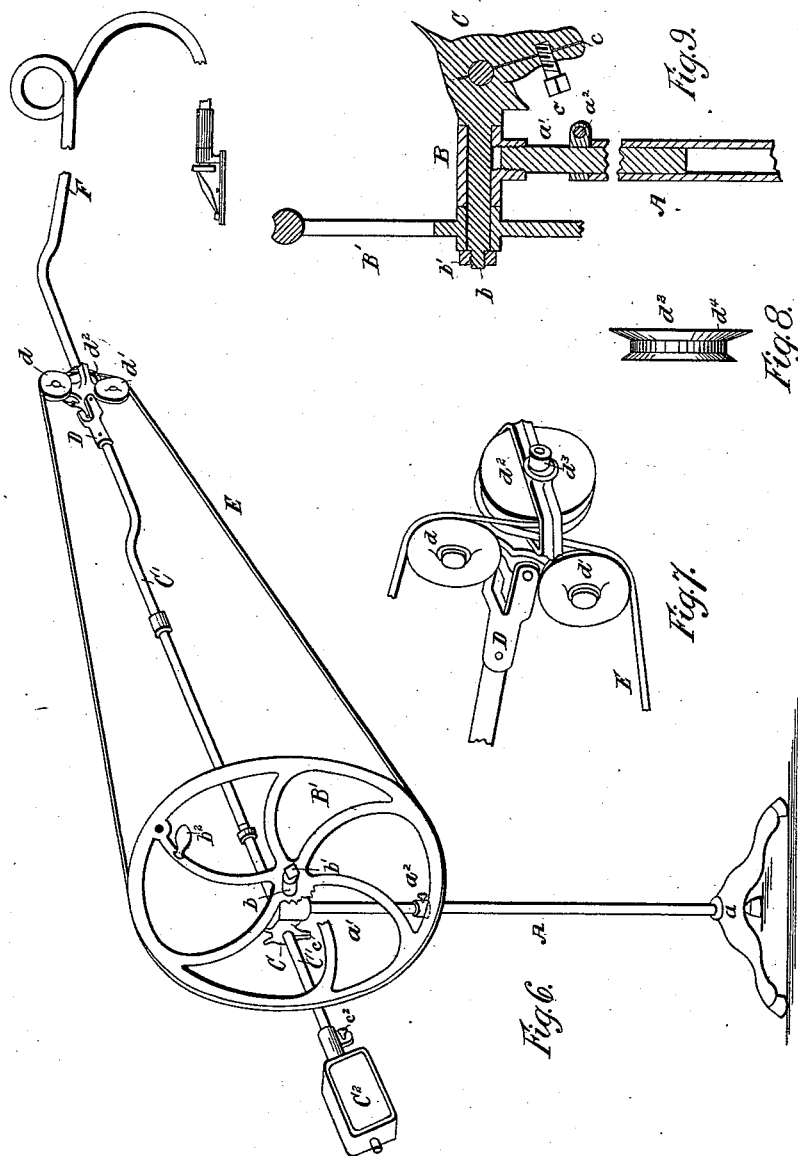
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*Willard N. Baylis.*  
*Fred. Elliot Brigham.*

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# UNITED STATES PATENT OFFICE.

EDWARD A. COCHRAN, OF NEW YORK, N. Y.

## HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 526,858, dated October 2, 1894.

Application filed February 29, 1892. Serial No. 423,106. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD A. COCHRAN, of New York, in the county and State of New York, have invented certain new and useful  
5 Improvements in Hair-Clippers, of which the following is a specification.

My invention relates to hair clippers of the kind commonly used for cutting the hair of horses and other animals and belongs more  
10 particularly to that class of clippers which are operated by a driving wheel which transmits motion to the clipper by means of an endless belt.

The object of the invention is to provide  
15 a clipper, of the class above named, simple and durable in construction, with improved mechanism for effecting its operation.

In this invention the cutter plate is upon the comb-plate and it is reciprocated by a  
20 crank at the end of a revolving shaft with a pitman connecting the crank and the cutter plate, there being ball or universal joint connections at the ends of the pitman to the crank and cutter plate respectively.

25 In the drawings, Figure 1 is a plan view of the clipper proper. Fig. 2 is a side view thereof. Fig. 3 is an end view. Fig. 4 is a view of the pitman disconnected from the clipper. Fig. 5 is a plan view, with cap removed, of the socket or bearing for the ball  
30 at one end of said pitman. Fig. 6 is a perspective view of the stand and its mechanism by means of which motion is transmitted to the clipper. Fig. 7 is an enlarged detail  
35 perspective view of the means for transmitting motion to the flexible shaft. Fig. 8 is a detail view of the pulley  $d^2$ , and Fig. 9 is an enlarged sectional detail view of a portion of the stand illustrated in Fig. 6.

40 Referring to the drawings, in which similar letters of reference denote corresponding parts, A designates a standard supported upon the tripod  $a$  and provided with an extension  $a'$  which is vertically adjustable in  
45 said standard and secured in such adjustment by means of the set screw  $a^2$ . Upon the upper end of this extension is secured, by means of a screw thread or otherwise a sleeve B forming a bearing for the axle  $b$ . On one  
50 end of the latter is mounted the driving wheel  $B'$  having a grooved periphery. This wheel

is retained in position by means of a nut  $b'$  which engages with the screw threaded end of the axle  $b$ . The wheel  $B'$  is provided with  
two or more perforations in one of its spokes 55 at points unequally distant from the center, for the reception of a handle  $b^2$  by means of which the wheel is revolved. The other end of the axle  $b$  is provided with a bearing C here shown in the form of a horse's head, in  
60 which is mounted a longitudinally adjustable arm  $C'$ . The bearing is provided with a longitudinal slot  $c$  which is nominally more or less open but which may be closed or partially closed by means of the screw  $c'$ , the  
65 purpose of which as will be apparent, is to regulate the binding of the bearing upon the arm  $C'$ .

The rear end of the arm  $C'$  is provided with a counter balance here shown as a weight  $C^2$  70 which is adjustable upon said arm and secured in such adjustment by means of the thumb screw  $c^2$ . The forward end of the arm  $C'$  is provided with a bifurcate sleeve D having bearings for two pulleys  $d, d'$ , disposed in  
75 line with the driving wheel  $B'$  and another and preferably larger pulley  $d^2$  arranged in a plane substantially at right angles to that of the pulleys  $d, d'$ .

E designates an endless belt driven by the 80 wheel  $B'$ . This belt passes first over the pulley  $d$ , thence around the pulley  $d^2$  and thence under the pulley  $d'$  the result of which is to cause the revolution of the shaft  $d^3$  to which is secured the flexible shaft F. As shown in  
85 Fig. 8 the pulley  $d^2$  is provided on its outer edge with a flange  $d^4$  of greater circumference than that of the flange of the inner edge, the object of which is to provide against the slipping of the belt E off of such pulley  $d^2$ . 90

Turning now to the clipper proper G designates the comb plate provided upon each side with teeth  $g$ . To the rear end of this comb plate is rigidly secured a bearing  $G'$  in which is mounted a shaft H the rear end of  
95 which is here shown as reduced in diameter for connection with the flexible shaft. The bearing  $G'$  is also provided with a reduced portion  $g'$  which is externally screw threaded to receive the handle  $g^2$  of the clipper. 100

I designates a crank here shown as a disk which is mounted upon the shaft H and ro-

tated thereby. This disk is provided with a socket  $i$  which forms a bearing for the ball  $i'$  at one end of the pitman J.

$i^2$  designates a removable cap forming part of the crank disk and secured thereto by means of screws  $i^3$ .

K designates a bearing rigidly secured to the cutter plate hereinafter described, provided with a removable cap  $k$  secured in position by means of screws  $k'$ . This bearing is provided with a socket  $k^2$  similar to that in the crank disk I for the reception of the ball upon the end of the pitman J. Suitable openings are, of course, left in the crank disk and bearing K to permit of communication with the socket from the outside. In Fig. 4 the pitman J is illustrated and disconnected. This pitman is provided with a ball at each end for engagement with the socket  $i$  and  $k^2$ .

L designates the cutter plate provided with teeth preferably on each side. This plate has reciprocating motion over the comb plate G and is provided with elongated grooves  $l$  one on each side.

M designates a main plate or cover disposed over the cutter plate and provided with downwardly projecting portions  $m$  which fit within the grooves  $l$  to guide and retain in position the cutter plate L.

N designates spring nuts engaging with bolts projecting upward from the comb plate G, the province of which is to guide and hold in place the plate M and cutter plate L.

The operation of my invention is as follows: The driving wheel B' being revolved motion is transmitted to the pulleys  $d, d', d^2$ , thence to the flexible shaft F and thence to the shaft H. The revolution of the latter carries with it that of the crank disk I which, by means of the pitman J, communicates a reciprocating, or to and fro motion to the cutter plate L upon which is rigidly secured the bearing K.

What I claim, and desire to secure by Letters Patent, is—

1. The combination in a hair clipper, of a cutter plate, a comb plate and a bearing for a handle rigidly attached near one end of the comb plate, a flexible shaft and a shaft passing through the bearing, a disk upon the end of the shaft near the bearing provided with a removable cap formed as a segment of the disk and spherically recessed, a pitman having balls at its ends one of which is received into the spherical recess in the disk, a bearing upon the cutter plate with a spherical recess for receiving the other end of the pitman, and means for holding and guiding the

cutter plate as it is reciprocated, substantially as set forth.

2. The combination in a hair clipper, of a cutter plate, a comb plate, and a bearing and a tubular handle screwed upon a projection from the bearing, a flexible shaft passing through the tubular handle, and a shaft passing through the bearing, a disk upon the end of the shaft near the bearing provided with a removable cap formed as a segment of the disk and spherically recessed, a pitman having balls at its ends one of which is received into the spherical recess in the disk, a bearing upon the cutter plate with a spherical recess for receiving the other end of the pitman, and means for holding and guiding the cutter plate as it is reciprocated, substantially as set forth.

3. The combination in a hair clipper, of a cutter plate, a comb plate, both of which are provided with cutting teeth on their opposite edges, a bearing for a handle rigidly attached near one end of the comb plate, a flexible shaft and a shaft passing through the bearing, a disk upon the end of the shaft near the bearing provided with a removable cap formed as a segment of the disk and spherically recessed a pitman having balls at its ends one of which is received into the spherical recess in the disk, a bearing upon the cutter plate with a spherical recess for receiving the other end of the pitman, and means for holding and guiding the cutter plate as it is reciprocated, substantially as set forth.

4. The combination in a hair clipper, of a cutter plate, a comb plate and a bearing for a handle rigidly attached near one end of the comb plate, a flexible shaft and a shaft passing through the bearing, a disk upon the end of the shaft near the bearing provided with a removable cap formed as a segment of the disk and spherically recessed, a pitman having balls at its ends one of which is received into the spherical recess in the disk, a bearing upon the cutter plate with a spherical recess for receiving the other end of the pitman, a main plate or cover over the cutter plate having downward projections entering grooves in the cutter plate to guide the same, and spring nuts and bolts to guide and hold the main plate upon the cutter plate, substantially as set forth.

In witness whereof I have hereunto set my hand and seal this 27th day of February, 1892.

EDWARD A. COCHRAN. [L. S.]

Witnesses:

FANNIE R. PERKINS,  
HENRY M. CUMMINGS.