(No Model.) 3 Sheets—Sheet 1.

C. W. POTTER.

BALANCE ARM FOR POWER GROOMING AND CLIPPING MACHINES.

No. 588,706. Patented Aug. 24, 1897.

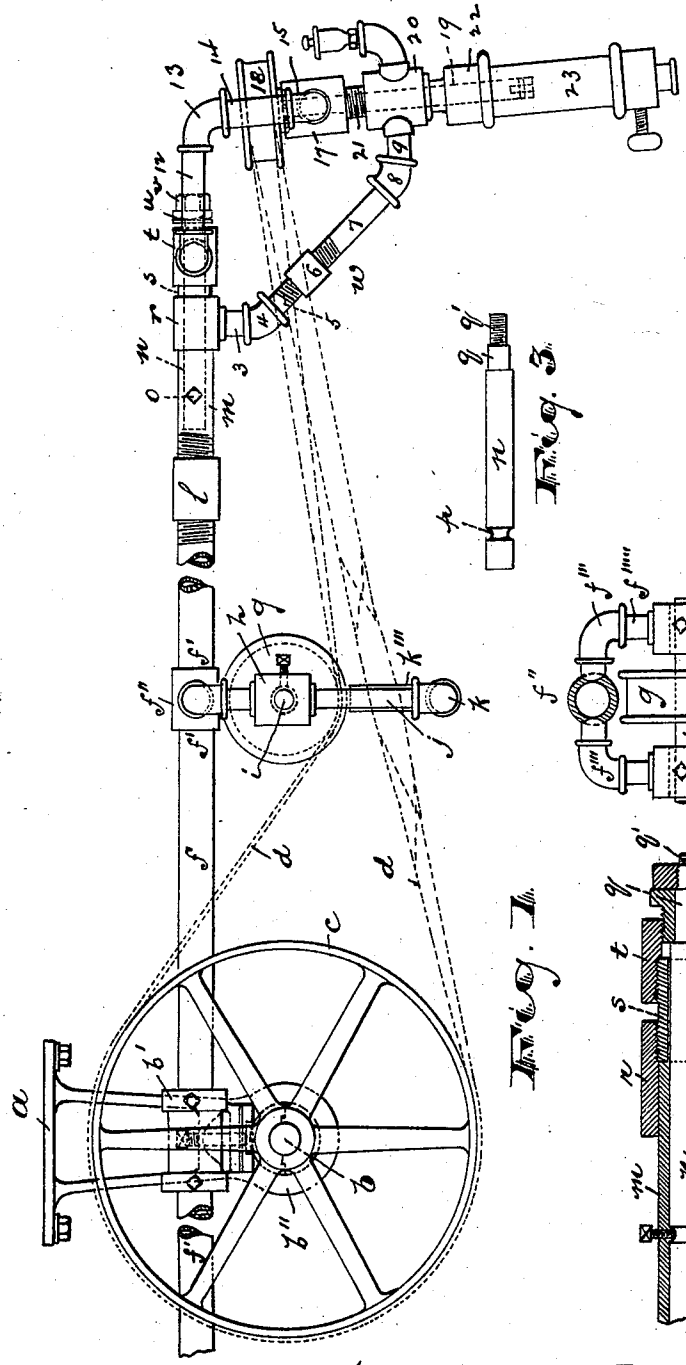


Fig. 1.

Fig. 3.

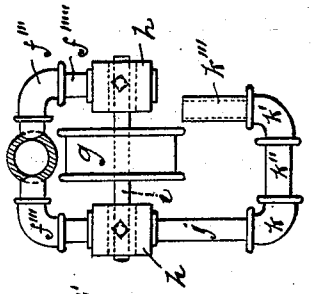


Fig. 2.

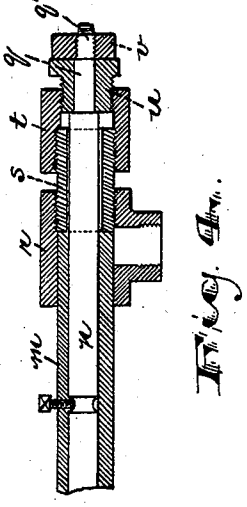


Fig. 4.

WITNESSES:

A. R. Krouse.

C. E. Liming.

Charles W. Potter, INVENTOR.

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(No Model.) 3 Sheets—Sheet 2.

C. W. POTTER.

BALANCE ARM FOR POWER GROOMING AND CLIPPING MACHINES.

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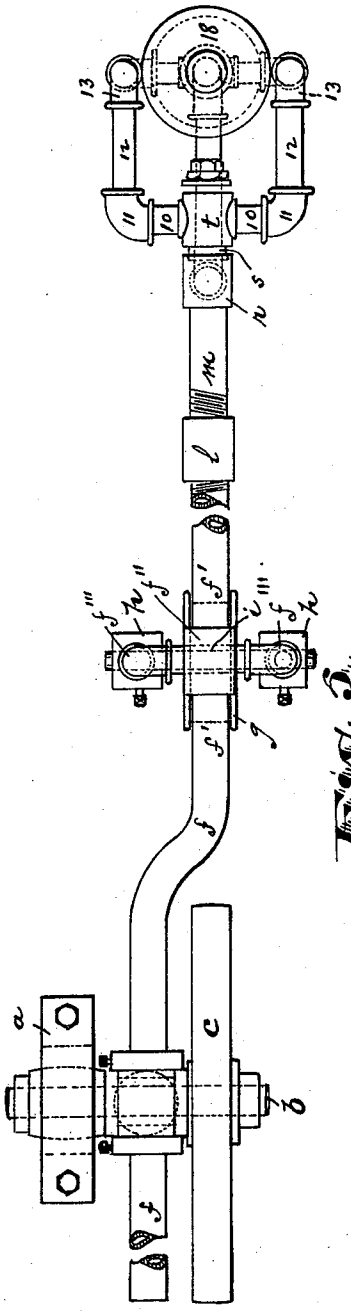


Fig. 1.

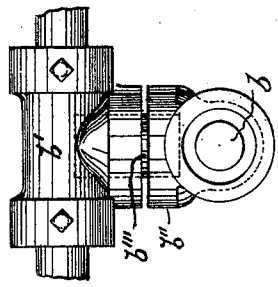


Fig. 4.

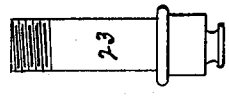


Fig. 7.

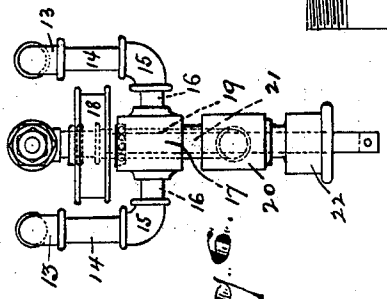


Fig. 6.

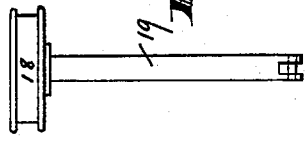


Fig. 8.

WITNESSES:

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(No Model.) 3 Sheets—Sheet 3.

C. W. POTTER.

BALANCE ARM FOR POWER GROOMING AND CLIPPING MACHINES.

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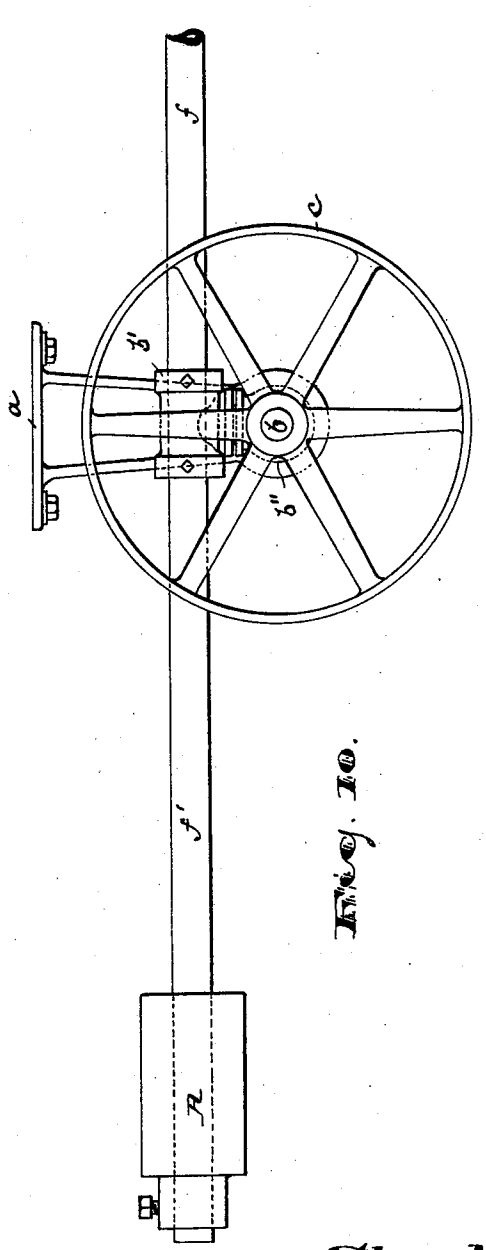


Fig. 10.

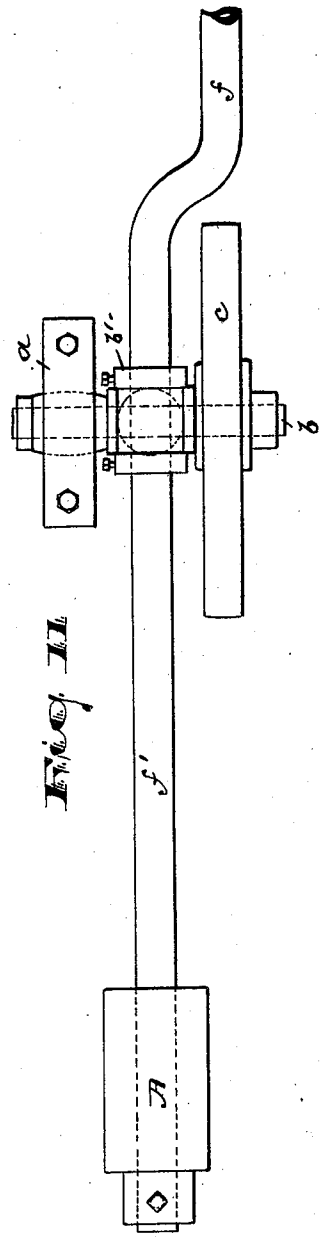


Fig. 11.

WITNESSES:

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Charles W. Potter, INVENTOR:

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ATTORNEYS

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UNITED STATES PATENT OFFICE.

CHARLES W. POTTER, OF MONTCLAIR, NEW JERSEY.

BALANCE-ARM FOR POWER GROOMING AND CLIPPING MACHINES.

SPECIFICATION forming part of Letters Patent No. 588,706, dated August 24, 1897.

Application filed April 22, 1897. Serial No. 633,233. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. POTTER, a citizen of the United States, residing at Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Balance-Arms for Power Grooming and Clipping Machines; and I 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 and numerals of reference marked thereon, which form a part of this specification.

The object of this invention is to secure a more uniform trim or cut in the operation of clipping horses, to avoid slipping of the belt and the consequent irregularities of cut and the other objections incident to the use of ordinary round belts in transmitting power to the clipper, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved clipping-machine for trimming the fur of animals and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters and numerals of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of the balance-arm upon which the clipping attachment is secured. Fig. 2 is a side view of a portion of said arm carrying the idle-pulley. Fig. 3 is a detail section of one of the sections of said arm employed to secure a certain swivel action. Fig. 4 is a longitudinal sectional view showing the relation of said section to the cooperating parts. Fig. 5 is a plan of the said balance-arm. Fig. 6 is an end view of the same, showing a depending portion of the said balance-arm. Fig. 7 is a detail showing another portion of said arm adapted to be attached to said depending portion. Fig. 8 is a detail of a pulley and its spindle, and Fig. 9 is a view showing the fulcrumal bearings of said balance-arm in detail. Figs. 10 and 11 are respectively a side elevation and plan showing the weighted end of the balance-arm.

In said drawings, *a* indicates a suitable bracket or hanger adapted to be attached upon a suitable fixture either upon a ceiling of a building or elsewhere. Said bracket or hanger provides a suitable journal-box, in which is arranged a shaft *b*, carrying a pulley *c*, which may be driven by any suitable means. Said pulley transmits motion through a belt *d* to a spindle-driving pulley 18 at or near the free end of the arm. The said pulley *c* is a flat pulley and the belt *d* a flat belt, whereby greater power can be transmitted to said spindle over and above what can be transmitted by the ordinary round belts, such as have heretofore been employed and have been found defective in that they fail in transmitting the requisite power. The said balance-arm *f* is fulcrumed upon the shaft *b*, and at one end it is provided with a counterbalancing-weight A, the opposite end being free to oscillate vertically. The fulcrumal bearings for the balance-arm may be formed of two T connections *b' b''*, joined by a short nipple *b'''*, through one of which T connections the balance-arm extends and the shaft *b* through the other.

On the end of the balance-arm opposite the weight is arranged the spindle-pulley 18, and between the pulleys *c* and 18 is arranged the idle-pulley *g*, as shown more clearly in Fig. 2. Said arm *f* is shown to be in sections *f' f'*, coupled together by a coupling *f''*. To the opposite lateral extensions of the cross-coupling are attached elbows *f''' f'''*, which are turned downward and are coupled in turn, by means of pipe-nipples *f''''*, to the crosses *h*, providing bearings for the pulley-shaft *i* of the idle-pulley *g*. One of said crosses carries also a downwardly-extending pipe-section *j*, to which is coupled, by means of elbows *k k'* and the horizontal pipe-section *k''*, Fig. 2, an upwardly-extending guide-piece *k'''* for holding the belt *d* in proper alinement with the pulley *c*. While these supporting bearings and guides are made up of pipe-fittings, such as are commonly found in the market, it is evident that I may employ special castings, and thus dispense with a number of the parts, but for convenience in manufacture I have constructed the said bearings as described.

Near the extremity of the arm where it is turned down and receives the spindle to which the usual flexible shaft for operating the clipping and grooming devices is attached I attach, by means of a coupling *l*, a pipe-section

m, in which is secured the swivel-shaft n, which latter lies telescopically within the said pipe-section m and is held therein from withdrawal by a set-screw o, Figs. 1 and 4, adapted to enter a peripheral groove p. (Shown in Fig. 3.)

Where the shaft n projects from the pipe m, it serves as a swivel-bearing for the pulley-carrier of the balance-arm, which carrier comprises the T connection, nipple s, arranged on said swivel-shaft and entering the T connection, and the cross connection t, which receives the threaded bushing u, the last being screwed into said cross connection t and lying on a reduced end q of the shaft n. The said parts are held on the shaft n by the nut v, screwed upon the threaded end q'. The parts r, s, t, and u are adapted to turn together to oscillate upon the said shaft n and pipe connection or arm-section m to admit of the oscillating action of the arms f to enable the clipping or grooming implements arranged at the lower end of the usual flexible shaft (not shown) to be worked over the horse.

The T connection m carries a brace w, Fig. 1, comprising a series of connections—such, for example, as the nipple 3 and forty-five-degree L connection 4, threaded nipple 5, right and left hand threaded coupling 6, threaded nipple 7, forty-five-degree L connection 8, and nipple 9, which parts, however, may be reduced in number by employing specially-formed castings.

The T-cross connection t provides lateral extensions in which are arranged nipples 10 10, L connections 11 11, and nipples 12 12, arranged to lie parallel with the shaft n at opposite sides thereof.

At the ends of the nipples 12 are arranged L connections 13, downwardly-extending nipples 14 14, Fig. 6, L connections 15 15, and nipples 16, which enter at opposite sides of the cross connections 17. Said cross connection 17 at its upper side is recessed to receive ball-bearings, (shown in outline in Fig. 6,) upon which the hub of the small spindle-pulley 18 rests. The spindle 19 of the said pulley extends downward through the vertical tube portion of the cross connection and enters through a nipple 21, a cross connection 20, and a reducer 22 and large sleeve 23, where said spindle receives the flexible shaft in any ordinary manner, the large sleeve adapted to receive the ordinary flexible shaft-covering case in the ordinary manner.

It will thus be observed from the construction described that the small spindle-pulley of the flat belt is arranged in a swiveled frame, having an oscillatory action upon the balance-arm on its fulcrum and oscillatory action of the depending portion on the shaft n and yet having great firmness, whereby it will admit of the use of the flat pulley and belt and the transmission of the increased motive power.

As intimated by the construction described I am enabled to employ flat flanged pulleys and secure the increased power resulting from the use of such flat belts and avoid the disadvantages and defects incident to the use of the round belts heretofore commonly employed.

I am aware that various changes may be made in the construction of the balance-arm. As before intimated, many of the coupling devices may be united into integral castings to simplify the construction, although for ordinary purposes I prefer the construction herein disclosed.

Having thus described the invention, what I claim as new is—

1. In a horse-clipper, the improved balance-arm comprising a vertically oscillatory sectional arm, a fulcrumal bearing, and a driving-pulley, said arm having a depending portion at one of its ends on which is arranged a small pulley for operating the flexible shaft, and, at a point between the driving-pulley and the small pulley, having an idle-pulley arranged in a frame depending from said arm and means for guiding the belt whereby the small pulley may change its position due to the oscillation of the spindle, and oscillation of the depending end of the balance-arm without danger of the belt running out of operative relation, all said parts being combined substantially as set forth.

2. The combination with the shaft b, pulley c, fulcrumal connections balanced arm f, having a downwardly-turned swiveled end, a pulley 18, on said swiveled end, an idle-pulley having its bearings between the pulley c, and pulley 18, and a flat belt d, all arranged and combined, substantially as set forth.

3. The combination with the shaft b, pulley c, fulcrumal connections for the balance-arm, said balance-arm, having a swiveled depending portion with its brace w, a spindle-pulley arranged on said depending portion, the spindle of which is adapted to receive the flexible shaft and an idle-pulley arranged between the spindle-pulley and pulley c, substantially as set forth.

4. The sectional balance-arm comprising the sections f', f', coupling f'', elbows, cross connections h, h, providing bearings for the journal of the idle-pulley, one of said connections h, having a guide k'', in connection therewith a depending and braced swiveled end having a pulley 18, a pulley c, and idle-pulley, all arranged and combined, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of April, 1897.

CHARLES W. POTTER.

Witnesses:
CHARLES H. PELL,
C. B. PITNEY.