No. 657,784. Patented Sept. 11, 1900.

J. W. NEWALL.

MACHINE FOR CUTTING HAIR OR WOOL.

(Application filed Oct. 4, 1898. Renewed July 17, 1900.)

(No Model.)

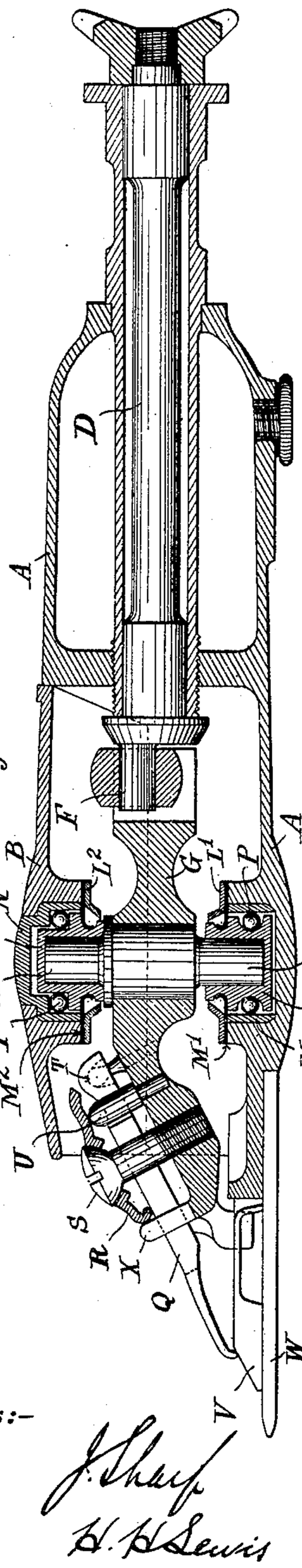

Fig. 1.

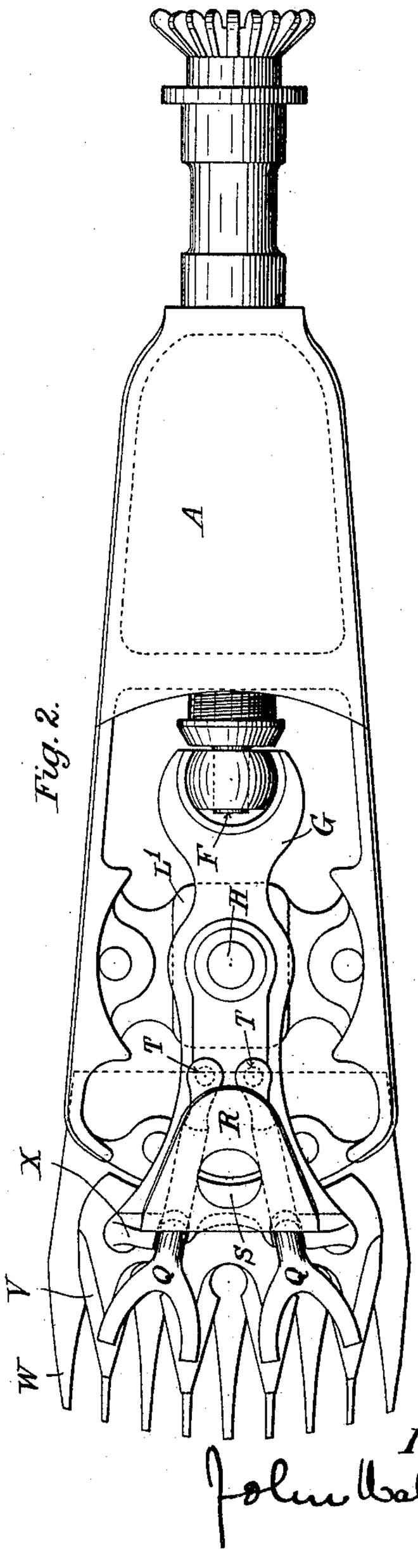

Fig. 2.

Witnesses:-

J. Shaw

H. H. Lewis

Inventor:-

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UNITED STATES PATENT OFFICE.

JOHN WALKER NEWALL, OF LONDON, ENGLAND.

MACHINE FOR CUTTING HAIR OR WOOL.

SPECIFICATION forming part of Letters Patent No. 657,784, dated September 11, 1900.

Application filed October 4, 1898. Renewed July 17, 1900. Serial No. 23,968 (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER NEWALL, a subject of the Queen of Great Britain, residing at Ongar, London, in the county of Essex, England, have invented new and useful Improvements in Machines for Cutting Hair or Wool, (for which I have obtained a patent in Great Britain, bearing date March 11, 1898, No. 6,011, and in the Argentine Republic, No. 2,379, dated August 10, 1898,) of which the following is a specification.

This invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section through a machine constructed in accordance with my invention; and Fig. 2 is a plan view of same, the upper part B of the main frame or body being removed.

The machine is of the type in which a cutter V is pressed against a comb W and vibrated across it by means of a pivoted lever G, driven to and fro by an eccentric pin F on the revolving spindle D.

A B are the two parts of the main frame or body of the shear.

The lever G has a pivot-pin H firmly fixed to it. The ends of the pin H are seated in, but easily detachable from the bushes I O, which bushes run on rings of balls P, which in their turn run on outer bushes K N. These bushes and rings of balls are so arranged as to allow the lever to reciprocate freely about the axis of the pin H, but resist motion in every other plane. The bushes I O are held in place in the castings A and B by the plates L' and L^2, and flexible washers M' M^2 are interposed, which fit loosely into grooves in the necks of the bushes I O, so as to exclude dirt. Rings of soft packing may be loosely compressed into the grooves by the plates in addition to or in lieu of the washers M' M^2 for the same purpose.

I am aware that ball-bearings have been used for the pivots of shearing-machines and that bushes both loose and fixed to the pivot have also been used; but in any machines hitherto made in which balls have been used the ball-races have been destroyed sooner or later by the entrance of dust, which rendered the use of them unpractical.

By means of the device here described—namely, holding the bushes permanently in their places in the shear-body and packing the joint between the bushes and the shear-body with a soft flexible packing—the ball-bearings are kept clean and in good order, while the machine can easily be taken apart for cleaning or examination, owing to the pin H being detachable from the bushes I O. When the shear is at work, no motion takes place between the pin H and the bushes I O, but the whole of the motion and resistance to cutting pressure is transferred to the ball-bearings.

The lever G being restrained from motion in every plane except that necessary for reciprocating the cutter, the pressure necessary for cutting can be taken directly from the lever. Pressure is transferred to each point of the cutter equally by means of two forks Q, each bearing at its tail end on one of two pins T and passing through guide-slots in a bar X at the front end of the lever G. These forks can rise and fall in the slots in the bar X, and their points are pressed down onto the cutter by means of the spherical-headed screw S and the plate R. The plate R rests on the pin U and the shanks of the two forks Q.

It is evident that several equivalent devices can be used for transferring pressure from the lever to the cutter, and instead of using the screw S for equalizing and adjusting the pressure on the cutters the screw S may be used for equalizing only and pressure may be adjusted by forming the whole of the upper ball-bearing as a separate piece, which can be adjusted vertically by screw or otherwise.

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

1. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro, with bearings formed in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but preventing motion in every other plane, and with a device for transmitting pressure from the lever to each tooth of the cutter equally, consisting of forked pressure-pieces Q Q, a pressure-plate R, an adjusting-screw S, three pins T T

and U, and guides X, mounted on the front part of the lever, which automatically balance and are adjusted, substantially as shown and described.

2. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro with bushes fitted in the top and bottom part of the shear-body to receive the ends of the pivot-pin and to allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body.

3. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it, which lever has projections formed on it to drive the cutter to and fro, with bushes fitted in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body and flexible washers or packing-rings to exclude dirt from the balls.

4. The combination in a machine for cutting hair or wool of a vibrating lever which has its pivot formed as a pin rigidly connected to the lever and projecting above and below it and which lever has projections formed on it to drive the cutter, with bushes fitted in the top and bottom of the shear-body to receive the ends of the pivot-pin and allow the lever to vibrate in the plane necessary for driving the cutter but prevent motion in every other plane, and balls and the requisite seats to form with the bushes a ball-bearing in which the bushes revolve in the plane required, and plates which hold the bushes and balls in position in the shear-body, and flexible washers or packing-rings which exclude dirt from the balls and a device for transmitting pressure from the lever to each tooth of the cutter equally consisting of two forked pressure-pieces Q Q, a pressure-plate R, an adjusting-screw S, three pins T T and U, and guides X, mounted on the front part of the lever, which automatically balance and are adjusted, substantially as shown and described.

JOHN WALKER NEWALL.

Witnesses:
J. SHARP,
H. H. LEWIS.