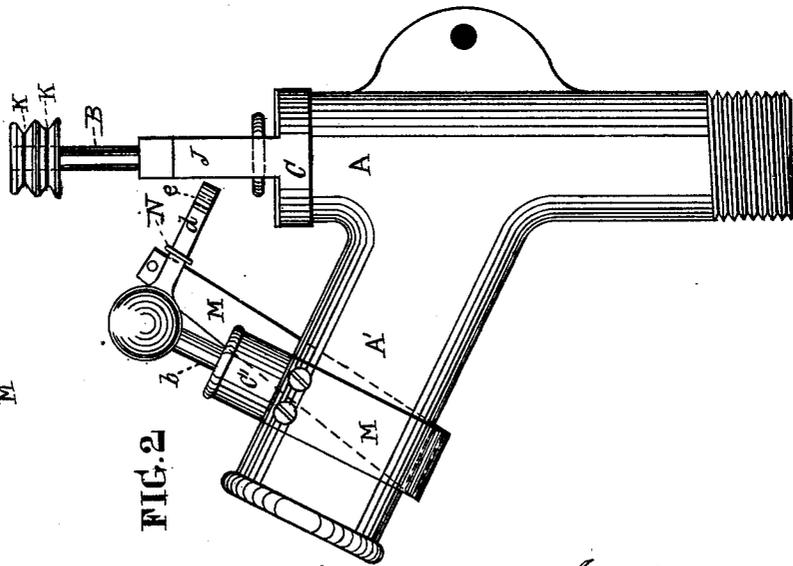
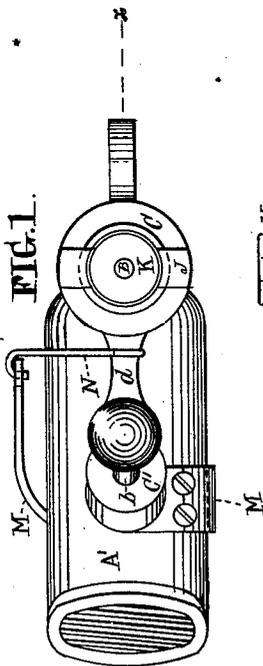
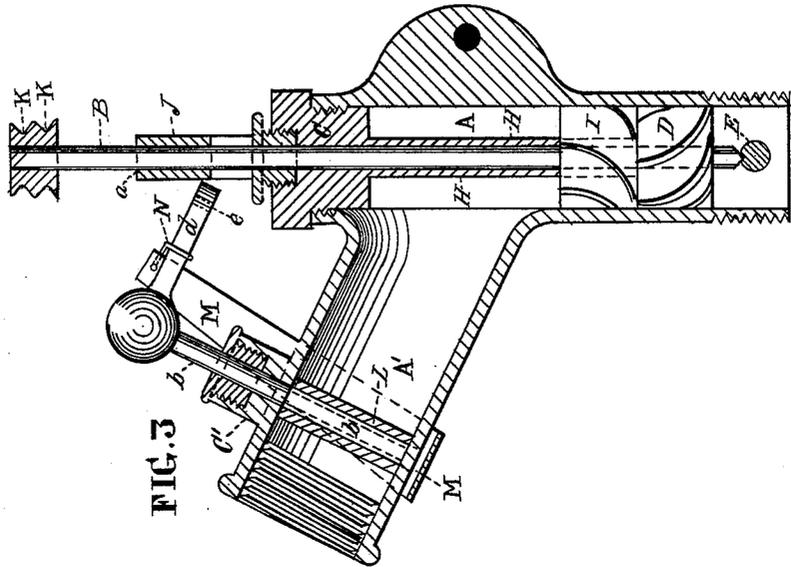


J. HAWORTH & W. H. NEWELL.

MOTORS FOR SEWING-MACHINES.

No. 189,624.

Patented April 17, 1877.



Witnesses

Thomas J. Dewley.

S. H. Morrill.

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UNITED STATES PATENT OFFICE

JAMES HAWORTH AND WILLIAM H. NEWELL, OF PHILADELPHIA, PA.;
SAID NEWELL ASSIGNOR TO SAID HAWORTH.

IMPROVEMENT IN MOTORS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **189,624**, dated April 17, 1877; application filed
March 9, 1877.

To all whom it may concern:

Be it known that we, JAMES HAWORTH and WILLIAM H. NEWELL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Motors for Sewing or other Machines, &c., which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of the improved motor. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section at the line *x x* of Fig. 1.

Like letters of reference in all the figures indicate the same parts.

The nature of this invention is as follows: A permanent chute, which is combined with the revolving wheel in the inclosing cylinder or case, is connected with the stuffing-box of the closed end of said cylinder by means of a central tube, through which the shaft of the wheel passes, so as to prevent any portion of the water, in its passage to or through the chute, being forced by the head of water into the stuffing-box, as hereinafter more fully described. There is a check-valve in the branch pipe, for regulating and cutting off the supply of water. The stem of the valve is provided with an arm, to which a spring is connected for closing the valve, and for opening the same a rod is connected with the arm and a treadle, as hereinafter fully described.

A is a cylindrical case, containing a revolving wheel and stationary chute. It has a branch, A', provided with a female screw-thread in its outer end, for connecting it with a feed-pipe, which takes its water from a street-pipe, to get the force of the head of water.

The branch is on an incline, as represented, to incline the water directly to the wheels.

The cylinder has a central shaft, B, which passes through the stuffing-box C in the upper end of the cylinder. The lower end of the shaft, which is provided with the water-wheel D, turns in the step E. The middle part of the shaft revolves within the hollow shaft or tube H, the upper end of which is fast to the stuffing-box C, and permanently connected with the lower end of the tube is the permanent chute I. The wheel fits closely upon the

revolving wheel D, so as to prevent any back flow of water which would force its way to the stuffing-box.

Another advantage resulting from this arrangement is, that the chute is quickly placed in position in the cylinder A, and is held there by means of the tube, without any additional fastening.

From the stuffing-box is projected the pedestal J, which has a bearing, *a*, for the upper end of the shaft B. The pedestal is made fast to the stuffing-box for the sake of simplicity, permanency, and cheapness.

On the outer end of the shaft are the differential pulleys K K, for connecting it with a sewing-machine by means of a band:

L is a check-valve in the branch A', for regulating and cutting off the supply of water. The stem *b* of the valve passes up through the stuffing-box C', and has an arm, *d*, for operating the valve.

M is a spring, the heel of which is fastened by means of screws to the branch A', as seen in Fig. 2. The spring has a turn around the branch, and to its resilient end is connected one end of the link N, the other end of which is connected to the arm *d* of the valve-stem *b*, whereby the valve is closed. The end of the arm has a hole, *e*, by means of which one end of a rod or wire is connected, the other end being connected with a treadle, for opening the valve for the passage of water for operating the sewing or other machine.

The motor may be used for other purposes, when desired.

We claim as our invention—

1. The combination of the hollow shaft or tube H with the stuffing-box C and the stationary chute I, the end of the shaft being permanently connected with the stuffing-box and chute, substantially in the manner and for the purpose set forth.

2. The combination of the check-valve L, having a stem, *b*, and arm *d*, the spring M, and link N, with the induction-branch A', substantially as and for the purpose set forth.

JAMES HAWORTH.
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Witnesses:

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ANDW. J. BOSWELL.