

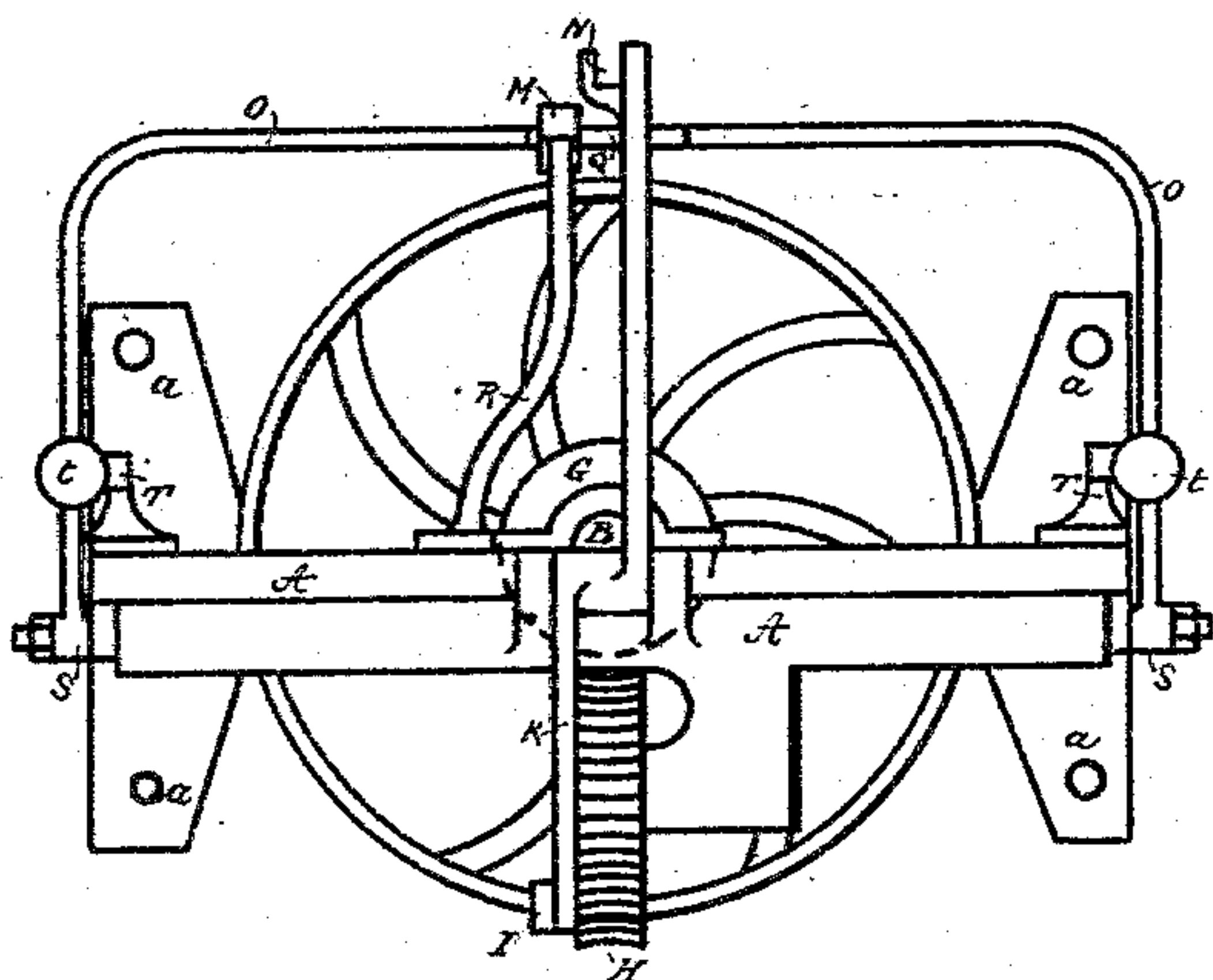
(No Model.)

J. W. FERNALD.

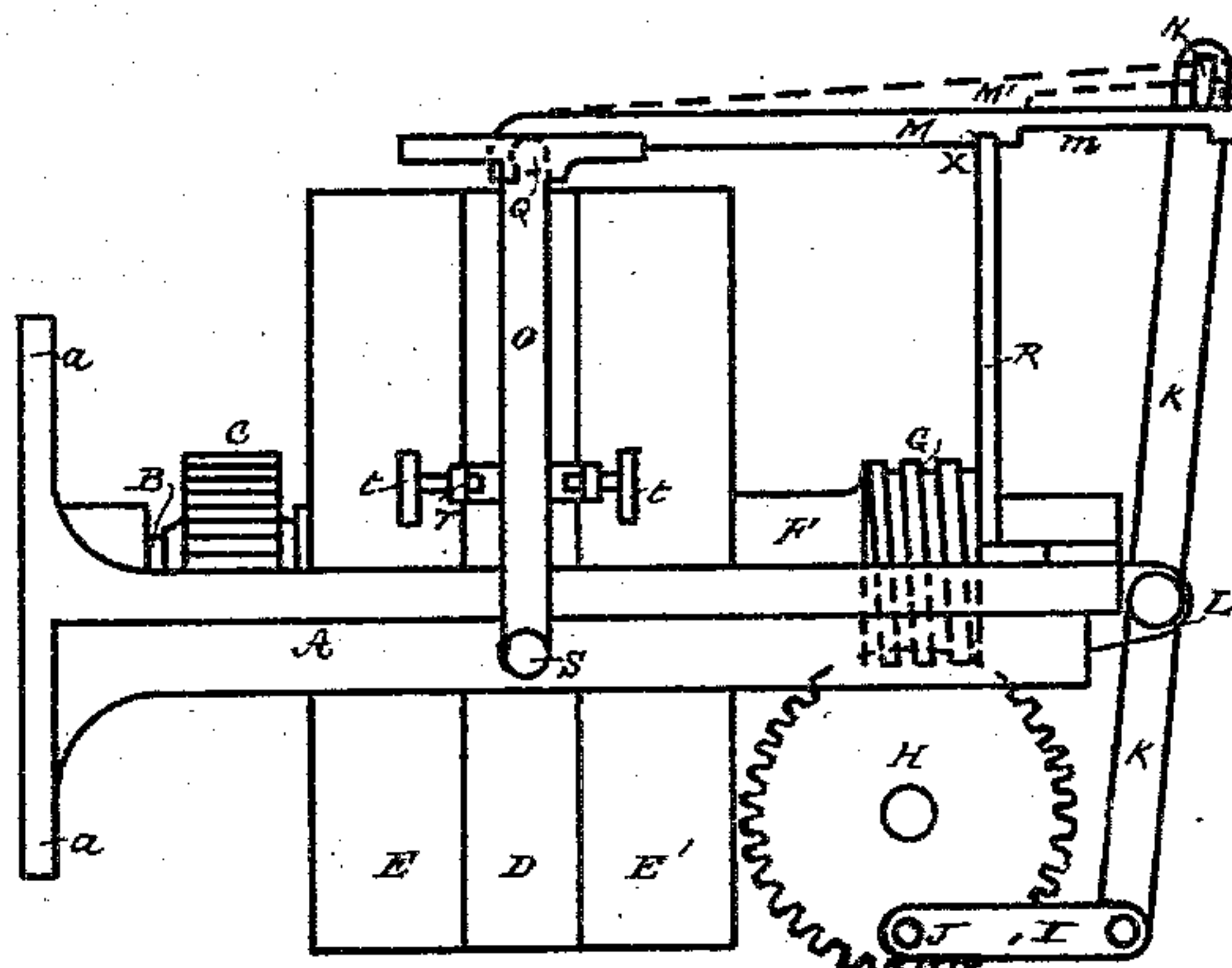
REVERSING MECHANISM FOR WASHING MACHINES.

No. 283,586.

Patented Aug. 21, 1883.



— Fig. 1. —



— Fig. 2. —

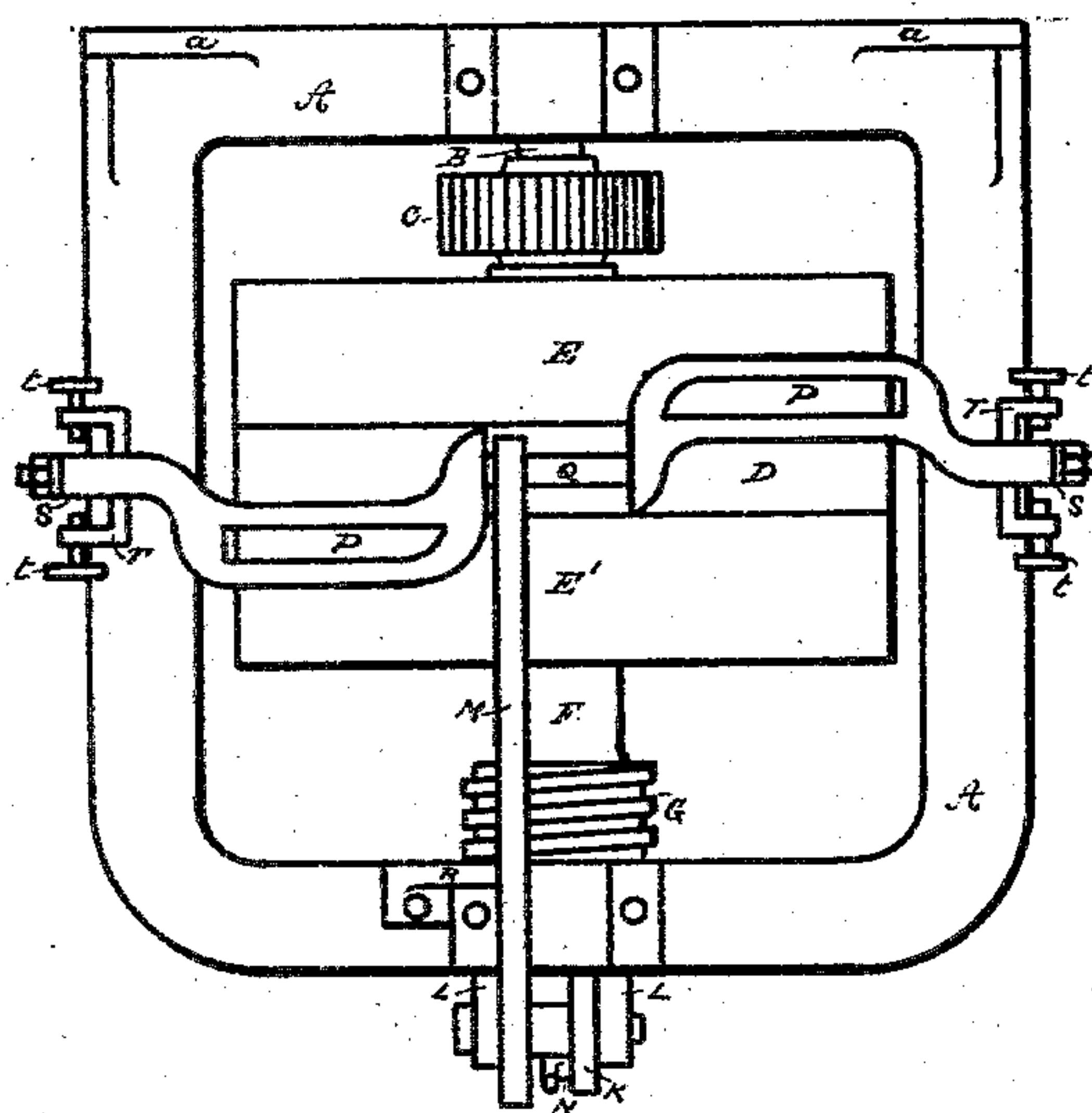


Fig. 3. —

WITNESSES
Cyrus E. Rathrop
Summer Collins

INVENTOR
James W. Fenwick
by Geo H. Lothrop
Attorney

UNITED STATES PATENT OFFICE.

JAMES W. FERNALD, OF DETROIT, MICHIGAN.

REVERSING MECHANISM FOR WASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 283,586, dated August 21, 1883.

Application filed May 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. FERNALD, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Reversing Mechanism for Washing-Machines, of which the following is a specification.

Figure 1 is an end elevation, Fig. 2 a side elevation, and Fig. 3 a plan, of my invention. My invention consists in an improved construction of reversing mechanism for washing-machines.

A represents an iron frame having on one end two brackets, *a a*, by which the frame is bolted to the end of a washing-machine.

B represents a shaft journaled in frame A, and having thereon a pinion, C, which engages with and drives a wheel secured to the shaft, on which the inner cylinder of the washing-machine revolves.

D represents a fast pulley, and E E' represent two loose pulleys, on shaft B.

F represents a sleeve fastened to the hub of loose pulley E', encircling shaft B loosely, and carrying at its outer end a worm, G, which meshes into a worm-wheel, H, hung on a shaft underneath and at right angles to shaft B.

J represents a wrist-pin fastened to worm-wheel H, to which is pivoted one end of a connecting-rod, I.

K represents a lever pivoted to frame A at L, the lower end being pivoted to rod I. At the upper end of lever K is a hook, N.

O represents a belt-shifter shaped nearly like the letter U, having offsets in which are the holes P P, through which run two belts, one straight and the other crossed, by which power is communicated from a shaft overhead to shaft B. Belt-shifter O has its ends pivoted to frame A, at the points S, by suitable bolts, so that it can be rocked, its range of motion being limited by small set-screws *t t* in projections T T on frame A, as clearly shown in Figs. 2 and 3.

M represents a connecting-rod, one end of which is loosely pivoted, at Q, to belt-shifter O, having in its under side an elongated notch, *m*, and a smaller notch, *x*, both having square or hooked shoulders.

R represents a post rigidly attached to frame

A, its upper end being just large enough to snugly fit into notch *x* in rod M.

The operation of my invention is as follows: Rod M being placed with notch *m* in hook N, so that the straight belt is on tight pulley D and the crossed belt is on loose pulley E, the driving-shaft is set in motion, and shaft B is revolved by fast pulley D. The friction between pulleys D E' causes the latter pulley to revolve, thus turning worm G and communicating a slow motion to worm-wheel H. The rotation of wheel H, by means of wrist-pin J and connecting-rod I, causes lever K to vibrate slowly, and hook N slides along the under side of notch *m* until it strikes against the shoulder at the outer end of said notch, when, as its motion continues, it moves rod M and rocks belt-shifter O, so as to shift the straight belt to pulley E' and the crossed belt to pulley D. This reverses the motion of shaft B, while the rotation of pulley E' continues in the same direction as before, as it is always actuated, directly or indirectly, by the straight belt. As the wrist-pin J passes either the upper or lower center it will reverse the direction of motion of lever K, and hook N will travel along notch *m* until it strikes the shoulder at the inner end thereof and shifts the belts to their original position.

When it becomes necessary to stop the machine, the belts are locked upon the two loose pulleys by placing notch *x* in rod M upon the top of post R, which is allowed by the looseness of the pivot at point Q, and all danger of accidental starting of the machine thereby obviated.

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

1. The vertical post R, secured in a stationary position to the frame A, in combination with the vibrating lever K, the belt-shifter O, and the rod M, having the notch *x* in its under side, said rod being loosely attached at one end to the belt-shifter and detachably connected at its other end with the vibrating lever, substantially as described.

2. A belt-shifting device consisting of a worm and gear constantly driven in the same direction, a pivoted vibrating lever actuated by the worm-gear and having in its upper end a

hook, and a connecting-rod pivoted to the belt-shifter and removably connected with said vibrating lever, substantially as shown and described.

5 3. A belt-shifter consisting of a curved rod having holes therein for the passage of the belt or belts, and having its ends pivoted to the frame in which the shaft carrying the pulleys to be affected is journaled, substantially
10 as shown and described.

4. In reversing mechanism for washing-machines, the combination of the belt-shifter O, connecting-rod M, loosely pivoted thereto, and having notches *x m* therein, and vertical post

R, secured in a stationary position to the frame 15 A, substantially as shown and described.

5. In reversing mechanism for washing-machines, the combination of belt-shifter O, connecting-rod M, having therein notch *m*, and vibrating lever K, having a hook, N, at its 20 upper end, and actuated by suitable mechanism, said notched rod being detachably connected with the hooked end of the vibrating lever, substantially as shown and described.

JAMES W. FERNALD.

Witnesses:

GEO. H. LOTHROP,
JNO. A. WEIR.