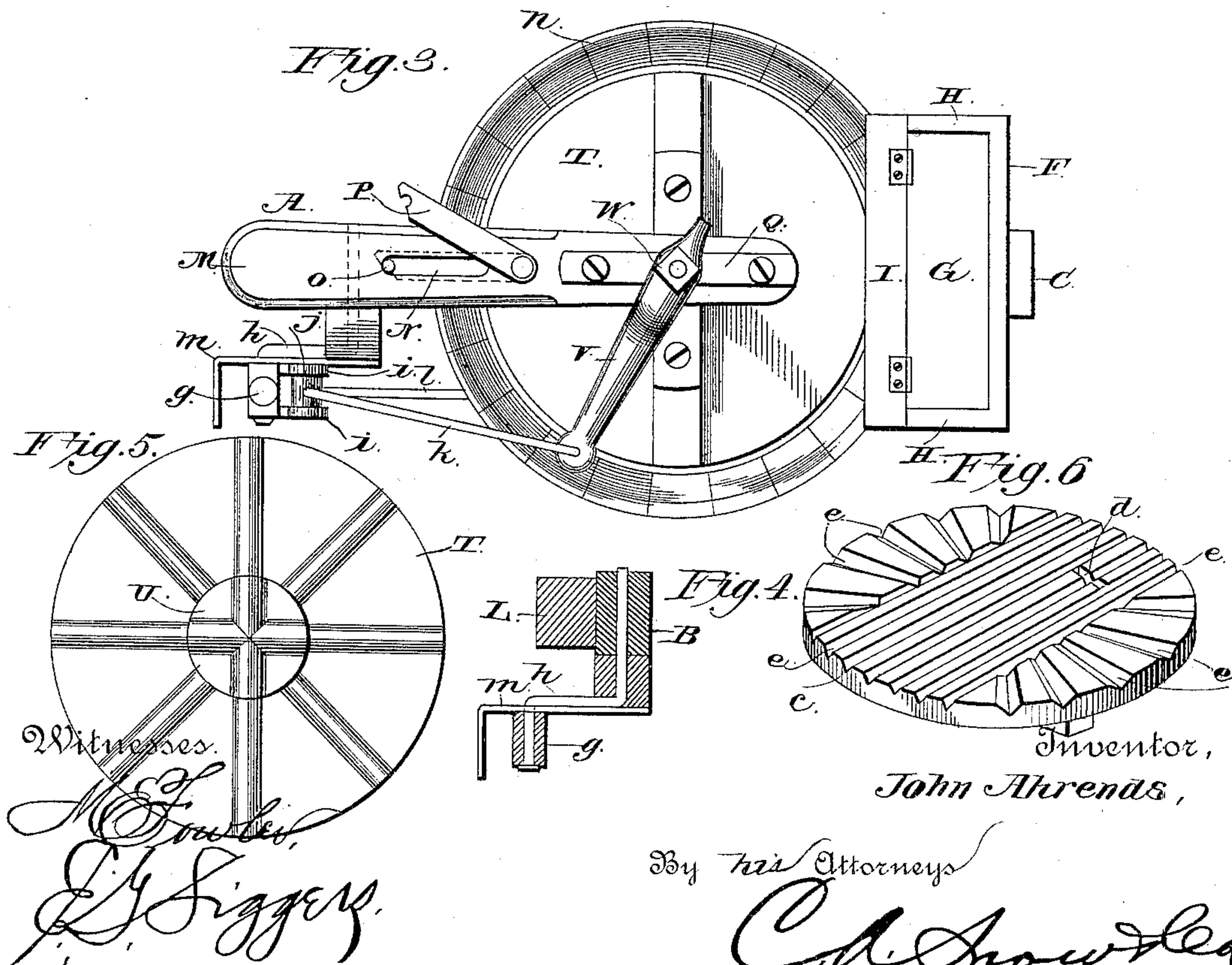
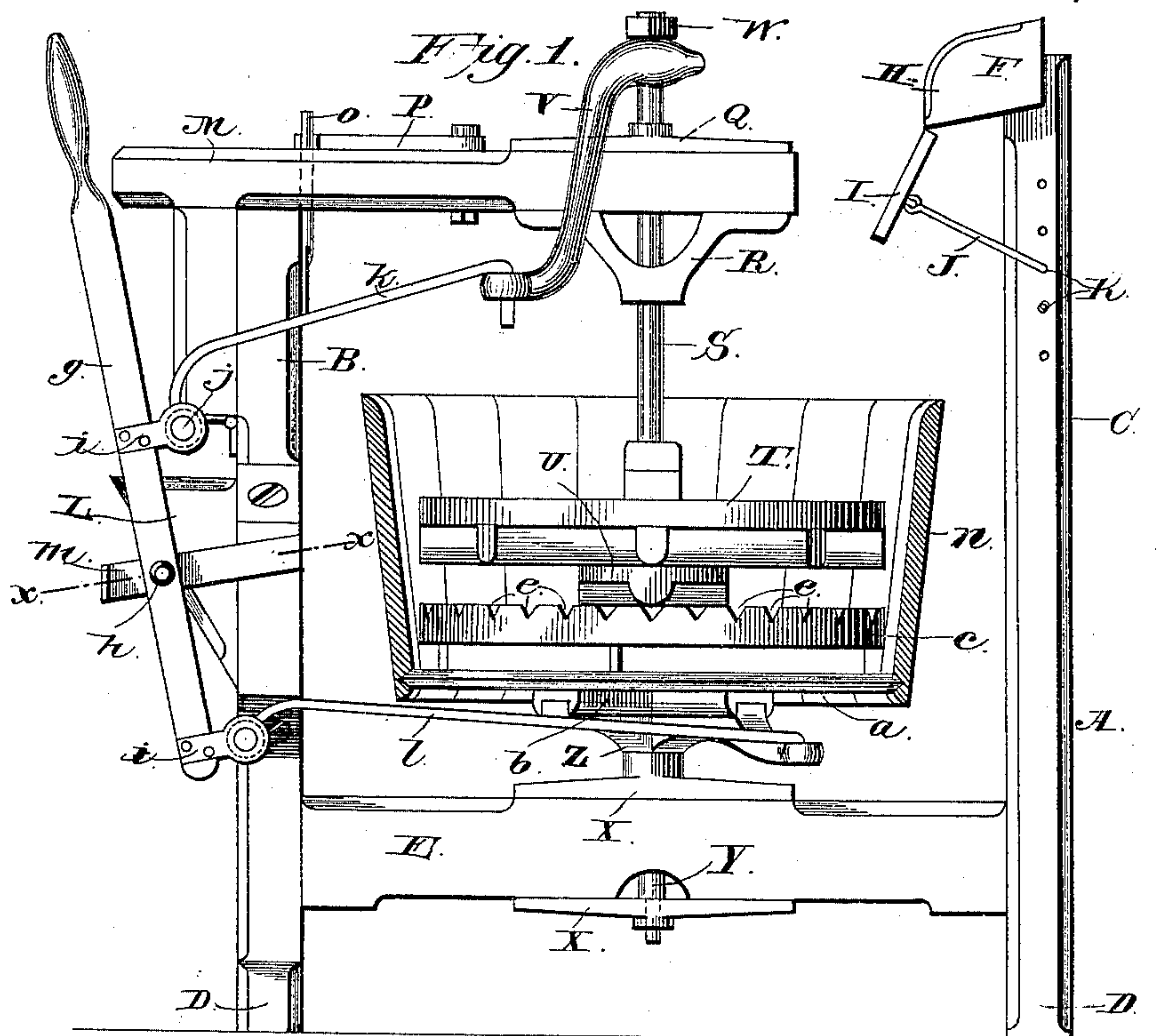


2 Sheets—Sheet 1.

No. 391,771.

Patented Oct. 30, 1888.



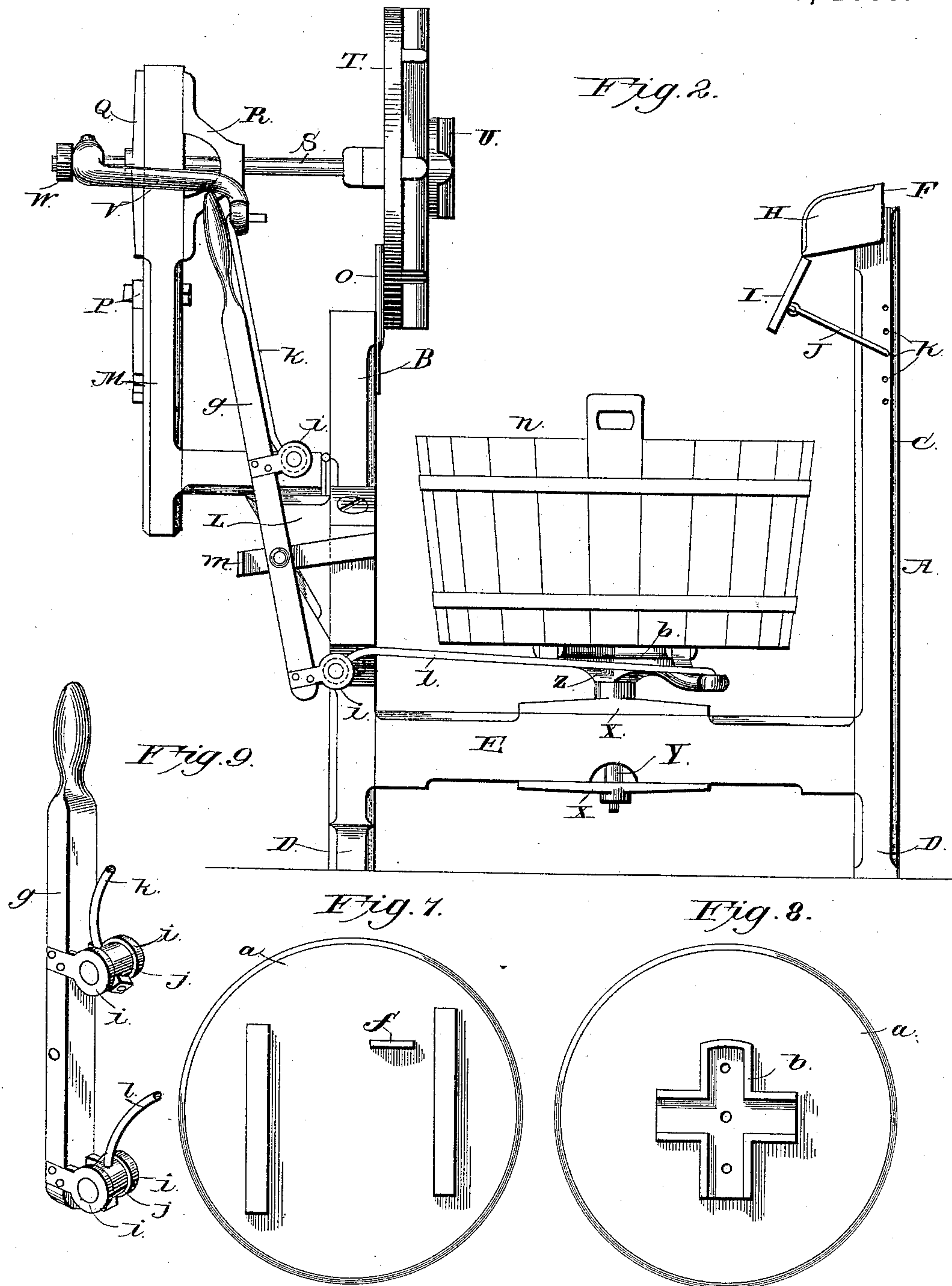
(No Model.)

2 Sheets—Sheet 2.

J. AHREND'S.  
WASHING MACHINE.

No. 391,771.

Patented Oct. 30, 1888.



Witnesses,

*M. Fowler.*  
*E. Siggers.*

Inventor,

*John Ahrends.*

By *His* Attorneys

*C. A. Howard & Co.*



# UNITED STATES PATENT OFFICE.

JOHN AHREND, OF MONMOUTH, KANSAS.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 391,771, dated October 30, 1888.

Application filed January 25, 1888. Serial No. 261,818. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN AHREND, a citizen of the United States, residing at Monmouth, in the county of Crawford and State of Kansas, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification.

My invention relates to improvements in washing-machines; and it consists in certain novel features, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a similar view showing the upper rubber removed from the tub. Fig. 3 is a top plan view showing the latch for locking the upper rubber-support in its lowered position. Fig. 4 is a detail sectional view taken on line *xx* of Fig. 1. Fig. 5 is a bottom plan view of the upper rubber. Fig. 6 is a perspective view of the lower rubber. Figs. 7 and 8 are top and bottom views, respectively, of the circular plate which supports the lower rubber, and Fig. 9 is a detail perspective view of the operating-lever.

Referring to the drawings by letter, A designates a supporting-frame, consisting of the standards B C, provided with suitable feet, D, and the cross bar or beam E, secured to and between the lower portions of the standards. The standard C rises to a greater height than the standard B, and at the upper end of said standard I secure the wringer-box F, consisting of the bottom inclined plate, G, and the vertical rails H, secured thereto at or near its edges. To the inner lower edge of the plate G, I hinge the drip-board I, which can be set at any desired inclination by means of a brace-rod, J, having its upper end pivotally secured to the drip-board and its lower end adapted to engage one of a vertical series of openings, K, in the standards, as will be readily understood. On the outer side of the shorter standard, B, I provide the offset or rest L, and to this standard I secure, by a suitable hinge, a short distance above the rest L, a knee or L-shaped support, M, which carries the upper rubber. This knee or L-shaped support is provided with a longitudinal slot, N, in its longer arm, through which a vertical pin, O, secured to the standard, projects. Upon the upper side of the

longer arm of this support M, and adjacent to the slot N therein, I pivot the latch P, the free beveled end of which is adapted to bear on the upper projecting end of the pin O, and thereby prevent the said support from swinging upward. At the free end of this support I secure on the upper and lower sides of the same the castings Q R, in which and the end of the support I journal the shaft S, having the upper rubber, T, secured on its lower end. This rubber consists of a circular plate having a series of radial ribs secured to its under side, and unitedly secured to a plate or casting, U, at the center. To the upper end of the shaft S, I secure a lever-arm, V, which is curved downwardly and outwardly, as shown, and is connected to the operating-lever, as will be presently described. Upon the upper extremity of this shaft I mount a nut, W, which is adapted to be turned downward upon the lever-arm V to prevent its disengagement from the shaft S. Upon the cross-beam E, at the center of the same, I secure the re-enforcing plates X, and a pivot-pin, Y, is mounted in said beam and plates. Upon the upper end of this pivot-pin I mount a casting, Z, consisting of two branches crossing each other at right angles, one of the arms thus formed being extended slightly downward and connected to the operating-lever, as presently described.

*a* designates the circular plate forming the bottom of the tub, which is provided on its under side with a grooved casting, *b*, adapted to fit snugly on the casting *z*.

*c* designates the lower rubber provided with a slot, *d*, and having a series of parallel and radial grooves, *e*, formed in its upper surface, thereby providing a number of rubbing-ribs, as clearly shown.

The plate *a*, forming the bottom of the tub, is provided on its upper side with a flat vertical projection, *f*, which fits snugly in the slot *d* of the lower rubber.

*g* is the operating-lever, which is fulcrumed on the outer end of an axle, *h*, secured rigidly within the standard B, and having an L-shaped portion projecting from said standard. The lever is fulcrumed or pivoted on the end of this L-shaped portion, and above and below its pivotal point it is provided with the pairs



of ears or lugs *i*, between each pair of which the rollers *j* are journaled.

*k l* are connecting-rods, having their outer ends secured to the rollers *j*, the rod *k* having its inner end pivotally connected to the extremity of the lever-arm *V*, and the rod *l* having its inner end pivotally connected to the extended arm of the casting *Z*. The projecting L-shaped portion of the axle *h* is provided with a guard-plate, *m*, which prevents the lever bearing against and being worn away by the axle. The tub is formed by a cylinder, *n*, of any suitable material, supported upon the bottom *a* and fitting snugly around the lower rubber.

In operation the clothes are placed in the tub on the lower rubber, together with water and soap or a bleaching material. The upper rubber is then lowered upon the clothes and the operating-lever reciprocated. The rubbers are thereby rotated in contrary directions. Each of the rubbers will be given about one-half a complete turn at each stroke of the operating-lever, and the clothes will thus be thoroughly agitated and completely cleansed in a short space of time. After the washing is completed the upper rubber is disconnected from the operating-lever and the L-shaped support for the same is then swung upward raising the rubber from the tub. A wringer is then clamped to the wringer-box in proper position and the drip-board elevated. The clothes are then passed from the tub through the wringer, and the water expelled from the same is directed back into the tub by the inclined bottom-plate of the wringer-box and the drip-board.

It will be observed that my improved machine is simple in its construction, compact in its arrangement of parts, and easy of operation. The upper rubber can be adjusted to the quantity of clothes in the tub, and the rollers on the operating-lever, to which the outer ends of the connecting-rods are attached, per-

mit said rods to automatically adjust themselves to the height of the upper and lower rubber. The swinging support for the upper rubber permits the same to be raised from the tub without being removed from the supporting-frame.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the supporting-frame having the standard *B*, the axle secured rigidly in said standard and having an outwardly-projecting L-shaped portion, the operating-lever fulcrumed on said projecting portion, the guard-plate secured on said projecting portion to prevent wear of the lever, the rollers mounted on the lever above and below its fulcrum, and the connecting-rods secured to the said rollers and connected to the rubbers, as set forth.

2. The combination of the supporting-frame, the tub supported thereby, the upper and lower rubbers, the lever fulcrumed on the supporting-frame, the rollers mounted on said lever above and below its fulcrum, and the connecting-rods secured to said rollers and connected to the rubbers, as set forth.

3. The combination of the main frame having the standard *B*, the swinging support hinged to said standard and having a longitudinal slot, the vertical pin secured to said standard and projecting above the same and through the slot in the support, and the latch pivoted on the support and having a beveled end bearing against the projecting end of the pin, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN AHRENDT.

Witnesses:

EUGENE INMAN,  
CALVIN INMAN.