

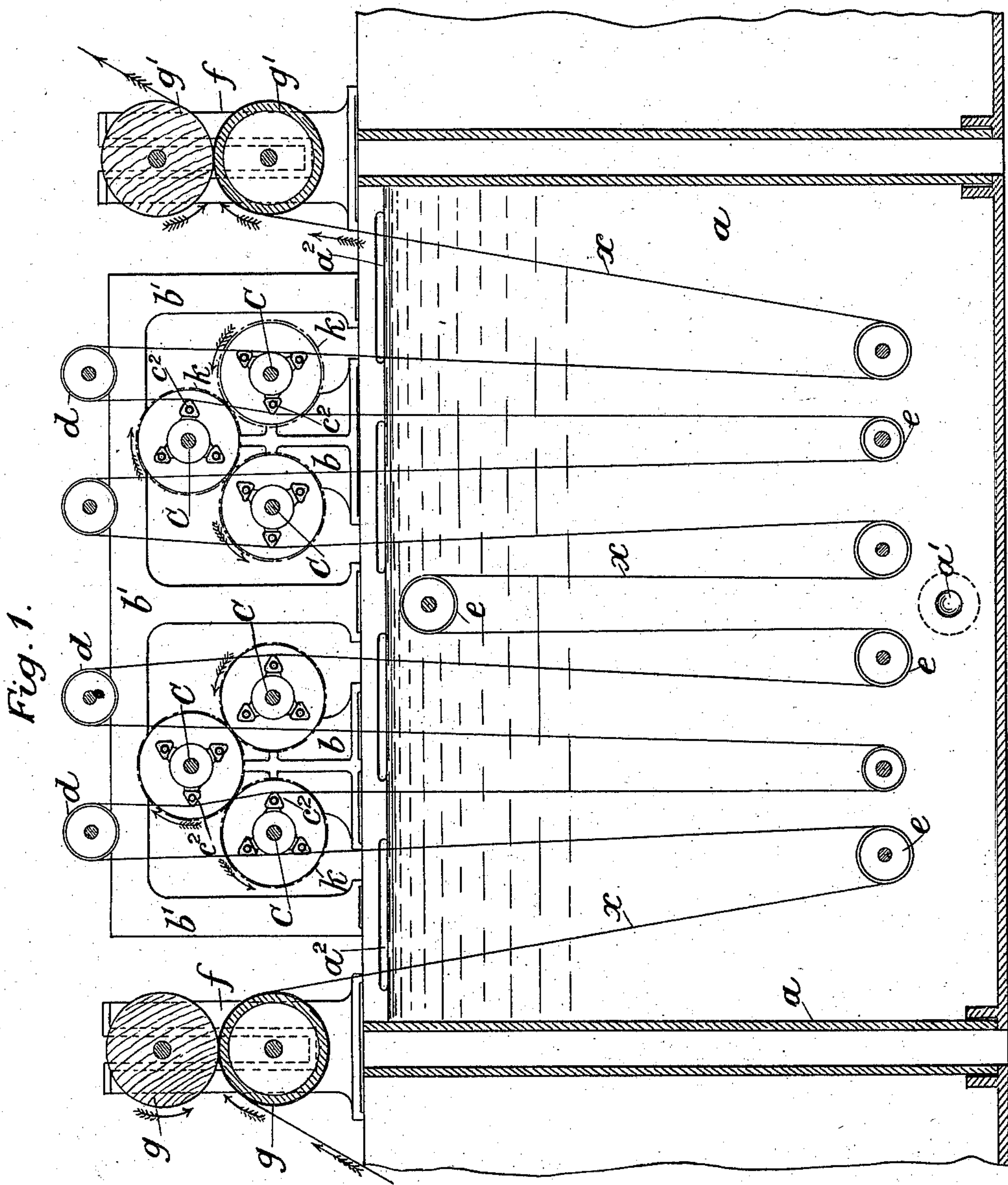
(No Model.)

2 Sheets—Sheet 1.

C. L. JACKSON & E. W. HUNT.  
APPARATUS FOR WASHING PIECE GOODS.

No. 558,690.

Patented Apr. 21, 1896.



Witnesses  
H. van Oldenmeel  
J. Alexander

Inventors  
Charles Loxton Jackson  
Edward Wilson Hunt  
by *Deane & Co.*  
Attorneys

(No Model.)

2 Sheets—Sheet 2.

C. L. JACKSON & E. W. HUNT.  
APPARATUS FOR WASHING PIECE GOODS.

No. 558,690.

Patented Apr. 21, 1896.

Fig. 2.

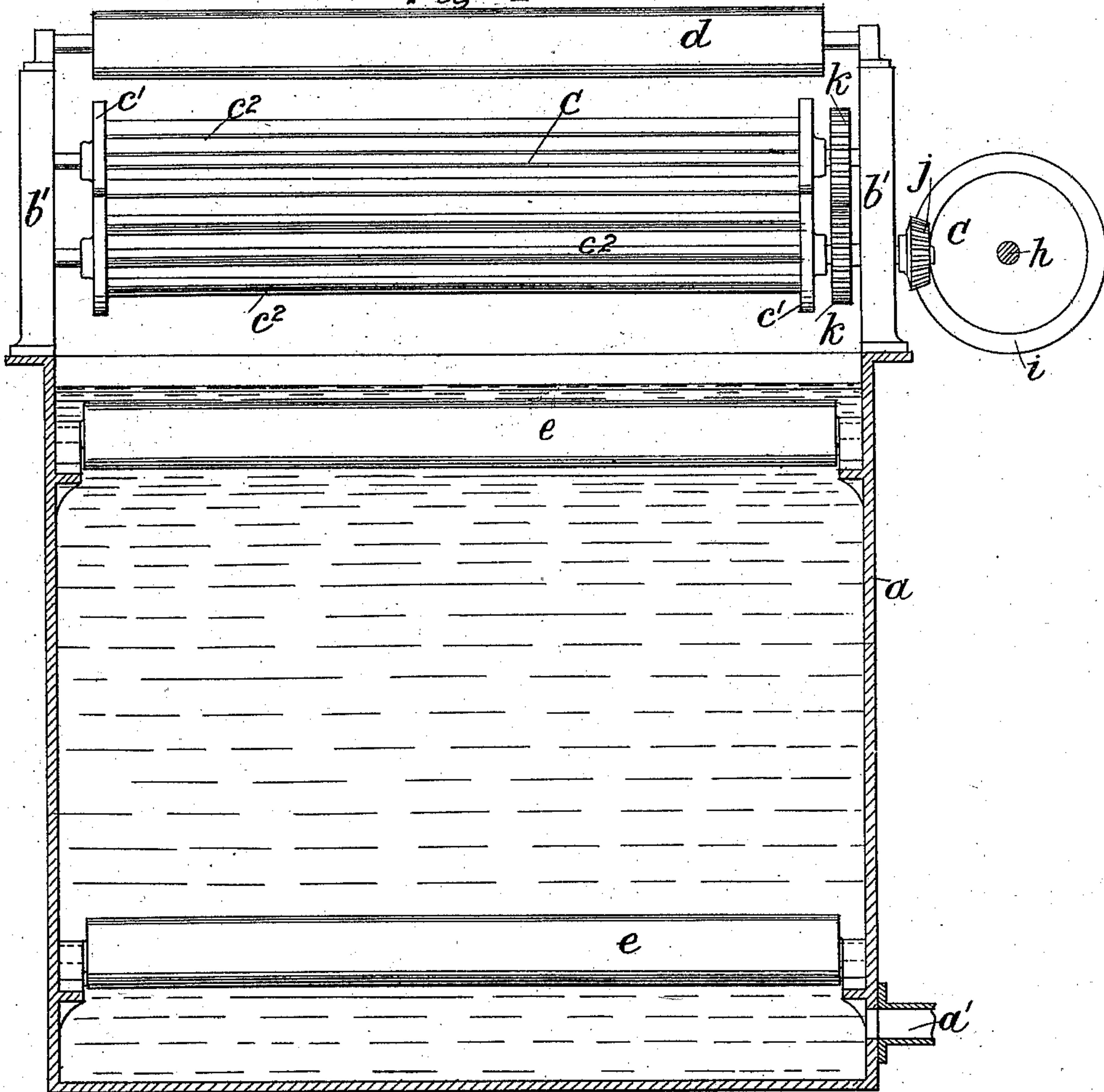
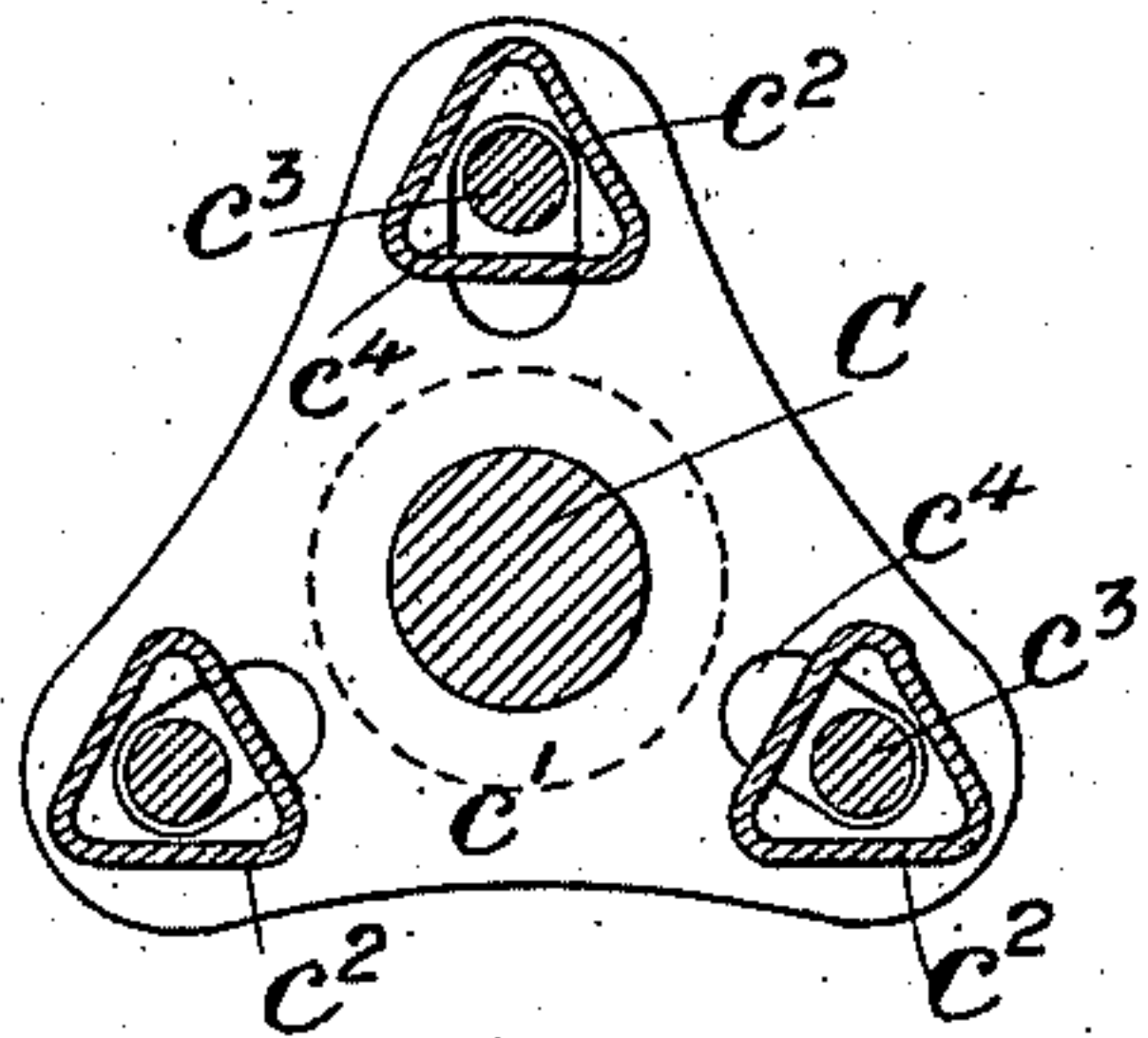
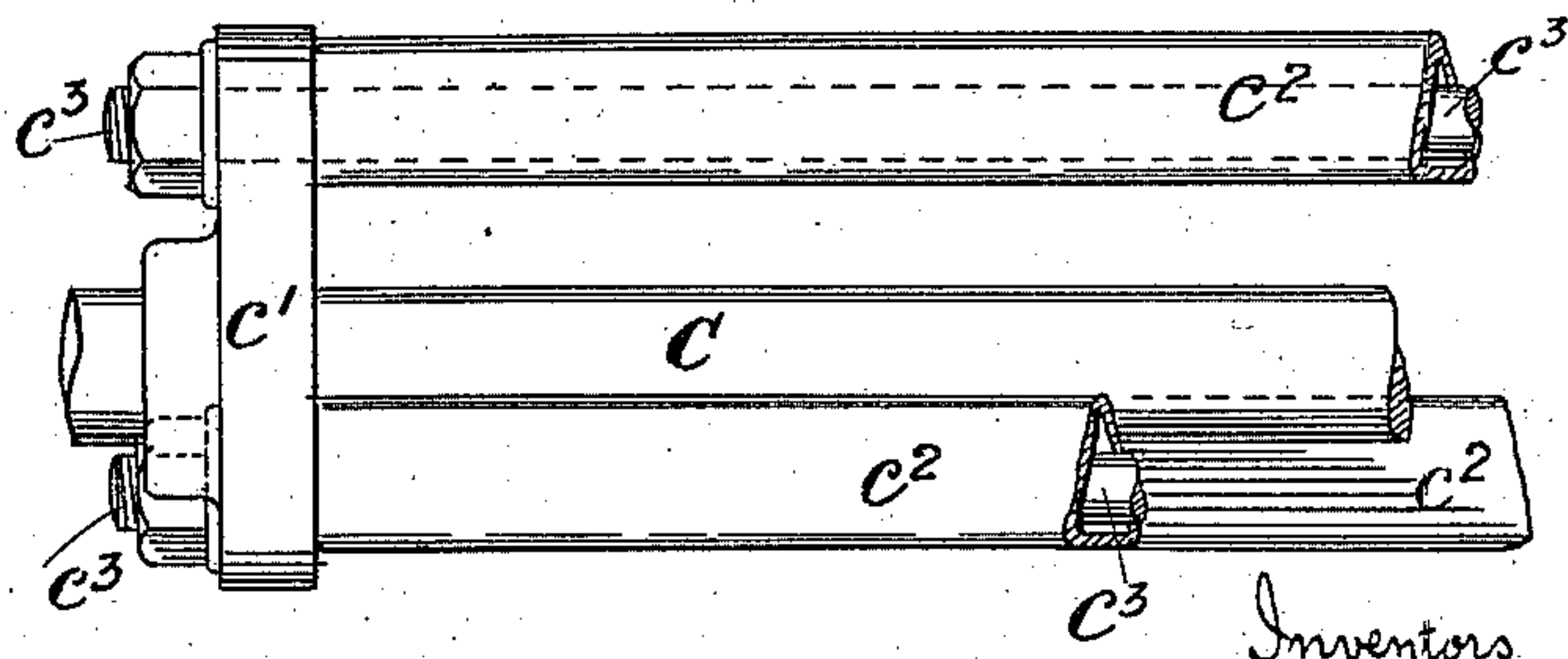


Fig. 3.



Witnesses  
H. van Oudenmeel  
J. Alexander

Fig. 4.



Inventors  
Charles Loxton Jackson  
Edward Wilson Hunt  
by *Richard R. [Signature]*  
Attorneys



# UNITED STATES PATENT OFFICE.

CHARLES LOXTON JACKSON AND EDWARD WILSON HUNT, OF BOLTON,  
ENGLAND.

## APPARATUS FOR WASHING PIECE GOODS.

SPECIFICATION forming part of Letters Patent No. 558,690, dated April 21, 1896.

Application filed November 4, 1895. Serial No. 567,919. (No model.) Patented in England January 16, 1893, No. 909.

*To all whom it may concern:*

Be it known that we, CHARLES LOXTON JACKSON and EDWARD WILSON HUNT, subjects of the Queen of Great Britain, and residents of Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Machines for Soaping, Washing, and Similarly Treating Textile Fabrics, (for which we have obtained Letters Patent in Great Britain, No. 909, dated January 16, 1893,) of which the following is a specification.

Our invention relates to improvements in machines for soaping, washing, and similarly treating textile fabrics in the open state; and our improvements consist, first, in so arranging and combining the beaters that one beater strikes on one side of the cloth simultaneously with another beater striking on the other side of the cloth at a point slightly above or below the other beater.

Our improvements consist, secondly, in placing the beaters arranged as described above the level of liquid in the tank or cistern and in admitting liquid at or near the bottom of the tank and allowing it to overflow continuously at or near the top of the tank, so that the impurities dislodged from the cloth by the action of the beaters above the liquid float on its surface and are carried away by the continuous overflow.

We carry out our improvements as illustrated on the accompanying two sheets of drawings, in which—

Figure 1 is a sectional elevation of part of a machine for soaping, washing, and similarly treating textile fabrics. This view represents one tank or cistern complete, with portions of other tanks, of which there may be any convenient number in series. Fig. 2 is a transverse section through Fig. 1, and Figs. 3 and 4 are detail views, on an enlarged scale, of one of the beaters.

In the drawings, *a* is the tank or cistern, which is provided with an inlet *a'* near the bottom for the admission of scouring or other liquid, and *a''* are openings near the top of the tank and preferably at the sides through which the liquid overflows into a trough or troughs. (Not shown.) The sides of the ma-

chine carry brackets *b*, each pair of which supports a set of three beaters.

Figs. 3 and 4 illustrate the construction of beater which we prefer to employ and in which the axle *C* has secured upon it near each end a disk or plate *c'*, between which triangular-shaped tubes *c''* are fitted and secured by rods or bolts *c'''*, one of which passes through each tube and through a slot *c''''* in each disk, so as to bind all the parts together. When one surface on any tube becomes worn, its bolts *c'''* can be slackened and the tube *c''* turned to bring another surface into the beating position. The guide-rollers *d* are supported in brackets *b'*, and similar guide-rollers *e* are mounted in the tank *a*, and near each end of the tank is secured a pair of brackets *f*, which support pairs of squeezing-rollers *g* and *g'*, respectively.

The fabric *x* to be scoured or treated is represented as entering the tank *a* through the squeezing-rollers *g* and passing through the tank alternately under and over the guide-rollers *e* and *d*, the latter of which are mounted a convenient distance above the top of the tank, while the rollers *e* are placed within the tank below the level of the liquid.

The beaters are placed above the level of the liquid in the tank, and they are all driven from a side shaft *h*, (see Fig. 2,) on which is secured bevel-wheels *i*, each of which gears into a bevel-pinion *j*, secured upon the axle *C* of one of the beaters, which is arranged to drive the other two beaters by spur-gear *k* in the direction shown in Fig. 1.

The beaters are set so that as the fabric *x* passes between the upper beater and the lower beaters in each set of three one beater *c''* on each comes into operation on opposite sides of the fabric at the same time, thereby giving a sharp beating action to the fabric three times for each revolution of the beater-axle *C*. By this action of the beaters acting on the saturated cloth above the level of the liquid the dirt and other foreign substances in the fabric *x* are beaten out and onto the surface of the liquid, and as a small supply is constantly admitted at *a'* into the tank a circulation of liquid is maintained, which at once carries away the dirt through the side openings *a''*,



while the greater quantity of the liquid in the tank is kept comparatively clean, whereby the fabric is more effectually cleaned.

5 The beaters  $c^2$  can be set nearer to or farther from their centers C by moving the tubes in the slots  $c^4$ , so as to increase or decrease their action on the fabric.

Any number of tanks with any convenient number of beaters may be employed in series,  
10 and although we prefer to employ the triangular construction and the arrangement of beater shown and described we may use any other form of beater suitable for the purposes of our invention.

15 Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim, and desire to secure by Letters Patent of the United States,  
20 is—

In combination, the tank, the guides for directing the cloth through the same, and beat-

ers arranged adjacent to the path of the cloth, each beater comprising a rotary shaft the end disks thereon having radial slots, the hollow 25 beater-bars and the rods extending through the same and through the slots with means for clamping the rods, disks and hollow bars together, said hollow bars and clamping-rods 30 being adjustable by the radial slots, to place the said bars in different positions relative to the cloth, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CHARLES LOXTON JACKSON.

EDWARD WILSON HUNT.

Witnesses to the signature of the said Charles Loxton Jackson:

EDW. TYSON,

JAS. THOMPSON.

Witnesses to the signature of the said Edward Wilson Hunt:

S. W. GILLETT,

HERBERT R. ABBEY.