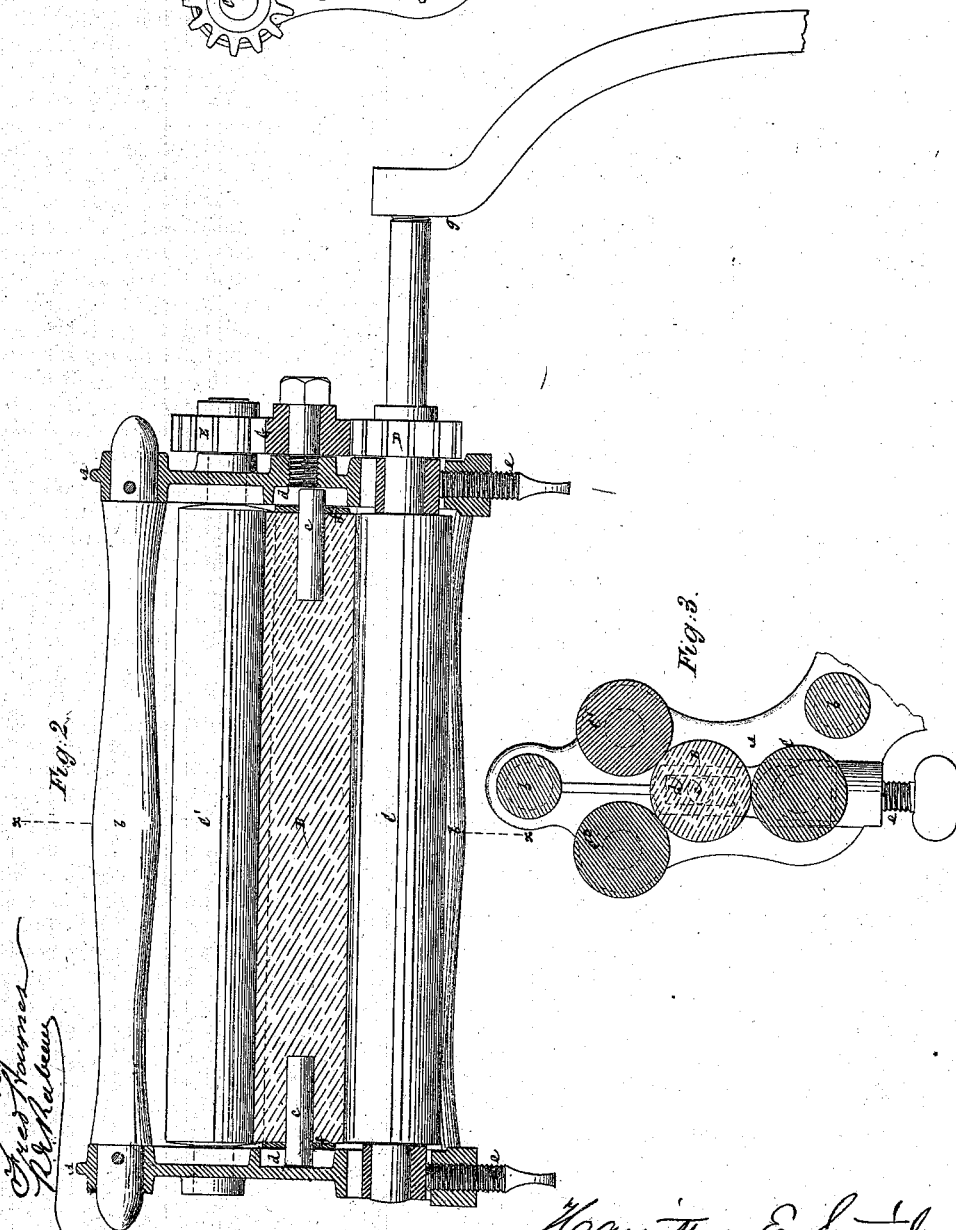
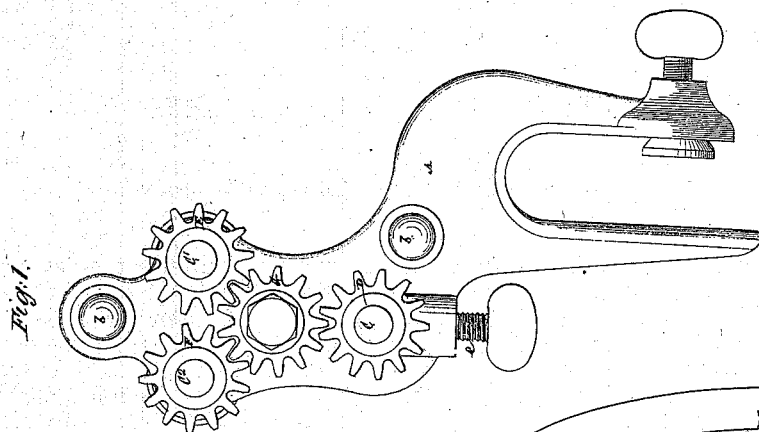


H. E. SMITH.
 Improvement in Clothes Wringers.
 No. 115,372. Patented May 30, 1871.



Witnesses:
 Fred H. Jones
 R. H. H. H. H.

H. E. Smith

UNITED STATES PATENT OFFICE.

HAMILTON E. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO MARY JANE SMITH,
OF SAME PLACE.

IMPROVEMENT IN CLOTHES-WRINGERS.

Specification forming part of Letters Patent No. 115,372, dated May 30, 1871.

To all whom it may concern:

Be it known that I, HAMILTON E. SMITH, of the city, county, and State of New York, have invented a new and useful Improvement in Clothes-Wringers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a side view of my improved clothes-wringer; Fig. 2, a longitudinal vertical section of the same; and Fig. 3 a transverse vertical section thereof through the line *x x* in Fig. 2.

Similar letters of reference indicate corresponding parts throughout the several figures.

My invention relates to machines for wringing clothes and other articles, in which a flexible roller is combined with rigid ones for wringing out the goods as they are drawn or passed in between them or certain of them; and the invention consists in a novel arrangement of said rollers, when combined with gearing, by which certain of them are operated, whereby the flexible roller which runs free, and between which and a lower rigid roller the goods pass, is pinched or held and driven in a positive manner, in part by the lower rigid roller and in part by two upper rigid rollers, arranged at a suitable distance apart. By this combination or arrangement the flexible roller is driven by frictional contact applied at suitably distributed points or lines on its periphery to prevent it from springing out of position without impairing its necessary flexibility, and a driving force is applied to it above, which avoids drag of the clothes on it below. Such combination facilitates the use of a solid rubber roller that is preferable to a mere rubber sleeve on a solid shaft, both as regards its durability or freedom from bursting, and as regards the replacement of it when necessary; and the invention further consists in an arrangement of washers or metallic facings on the ends of the rubber roller to protect it from chafing and wear by contact with the side frames in which it rotates, and is preferably free to rise and fall.

Referring to the accompanying drawing—

A A represent the side frames or pieces, suitably connected by cross-ties *b b*, and constructed to admit of being clamped to a tub or vessel below. The several rollers take their bearings in these side frames. These rollers consist of a rubber or flexible roller, B, and three rigid rollers, C C¹ C², all of which latter are drivers of the rubber roller, and of like diameter with one another, or speeded so that their peripheries travel at the same velocity. Said rigid rollers are arranged, the one, C, below the rubber roller B, and the other two, C¹ C², above it, at a suitable distance apart. The rubber roller B may be of a corresponding or different diameter, and is hung by a central rod, or preferably end trunnions *c c*, to rotate within vertical slots *d d* in the side frames, which provides for the adjustment of its fractional contact with or pinching action of the rigid rollers by the vertical adjustment of the lower one, C, that is hung in sliding boxes for the purpose, and set up or down by screws *e e*, as required. The rubber roller B may either turn with its central shaft or trunnions or on them; but in either case it is desirable to arrange washers or metallic facings *f f* on or outside of the ends of the rubber roller to protect its ends from chafing and wearing by contact with the side frames. The clothes to be wrung are drawn through or pass in between the rubber roller B and lower rigid roller C. The driving power may be applied, by means of a handle or crank, *g*, direct to the lower roller C, but a like positive motion, in suitable directions, is also communicated to the upper rigid rollers C¹ C² to make them likewise act as drivers of the rubber roller, and in a direct manner, while the lower roller C acts through the intervention of the clothes. This is done by means of gear-wheels D, E, and F, fast on the axles or shafts of the rigid rollers, but not gearing directly with one another, but indirectly through the intervention of a loose spur-wheel or pinion, G, which is driven by the gear-wheel D on the roller C, and gears with both wheels, E and F, to rotate the rollers C¹ C² in like directions.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination and arrangement, with the flexible roller B, of the driving-rollers C C¹ C² geared to operate in concert through the intervention of a loose spur-wheel, G, and fast wheels or pinions D, E, and F, on the rollers C C¹ C², substantially as specified.

2. The arrangement of the washers *f f* on

the ends of the flexible roller B, and between the same and the side frames A A, essentially as and for the purpose herein set forth.

HAMILTON E. SMITH.

Witnesses:

FRED. HAYNES,
R. E. RABEAU.