To all whom it may concern:

Be it known that we, CHARLES LOXTON ROTHWELL-JACKSON, formerly styled CHARLES LOXTON JACKSON, and EDWARD WILSON HUNT, of Wharf Foundry, Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Machines for Dyeing Textile Fabrics, of which the following is a specification.

Our invention relates to improvements in machines for chemicking, scouring, bleaching, dyeing, mercerizing, washing, or similarly treating textile fabrics in the open state; and our object is to enable the goods to be saturated with the liquor more rapidly and more effectively than is possible with existing machines.

In carrying our improvements into effect we employ an open washing-machine in which are mounted a pair of driven batch-rollers and reversing-gear and an intermediate self-adjusting drum lying in constant contact with the cloth on both batch-rollers, and the cloth is wound off one batch-roller and onto the other and then the driving mechanism is reversed and the cloth is wound back again, as described in the specification to our previous patent, No. 666,056, dated January 15, 1901.

Our improvements consist in the combination, with the driven batch-rollers and the self-adjusting drum, of an arrangement of spurt-pipes and presser or squeezing and spreading roller for distributing the liquor on the cloth as it passes over the self-adjusting drum on its way from one batch-roller to the other.

In the accompanying three sheets of drawings, Fig. 1 is a sectional end elevation, Fig. 2 is a sectional side elevation, and Fig. 3 is a plan with some of the parts removed of our improved machine.

In the views, 1 denotes the washing-machine; 2, the batch-rollers; 4, the self-adjusting drum, and 5 the pivoted arms, which carry the drum. The cloth from one batch-roller passes over the drum 4 and is wound onto the other batch-roller, the cloth being in constant contact with both batch-rollers and the drum. The batch-rollers 2 & 3 are driven by any suitable arrangement of gearing which may be reversed either automatically or by hand to wind the cloth from one batch-roller to the other and back again as often as required.

In carrying our present improvements into effect we mount a roller 6 in sliding bearing blocks or cross-heads 7, fitted above the drum 4 in the slots of the pivoted arms 5. The cross-heads 7 carry two spurt-pipes 8, the orifices of which are arranged to discharge liquid onto the cloth, preferably into the nip of the roller 6 and drum 4. The spurt-pipes 8 are connected by a cross-pipe 9, which is connected by a flexible tube 10 to a supply-pipe 11, which is connected to a circulating-pump 13, driven by a strap (not shown) and a pair of fast and loose pulleys 13 or by other suitable driving-gear. The pump 12 is connected by pipes 14 to both the wells 15, containing the "chemic" or other liquor with which the cloth is to be treated, so that when the pump is in motion liquid drawn from either well 15 is pumped through the pipes and discharged by the spurt-pipes 8 onto the cloth, into which it is squeezed by the roller 6, and the roller being carried by the pivoted arms 5, which carry the self-adjusting drum 4, is also self-adjusting with the drum. The spurt-pipes 8 being arranged on either side of the roller 6 sprinkle the cloth very effectively and, combined with the squeezing action of the roller, insure a very rapid and complete saturation of the cloth with the chemic, "sour," or other liquor with which it is being treated.

In addition to the chemic and souring or other wells 15 we make a connection to a fresh-water supply for the purpose of washing the fabrics when required, and the waste water is allowed to run off to a drain.

The circulating-pipes, in connection with the spurt-pipes and pump, are controlled by suitable taps or valves to enable the fabric to be treated with chemic, sour, or other liquor or water, as required.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—
The combination with the batch-rollers, means for driving and reversing the same, the self-adjusting drum, the pivoted arms supporting the same, of the roller 6 and the spurt-pipes 8 carried by the pivoted arms, a circulating-pump and suitable connecting-pipes, for supplying liquor to the spurt-pipes, substantially as and for the purposes herein set forth.

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

CHARLES Loxton ROTHWELL-JACKSON,
(Formerly Stiled
CHARLES LoxTON JACKSON.)
EDWARD WILSON HUNT.

Witnesses:
H. B. BARLOW,
HERBERT ROWLAND ABBEY.