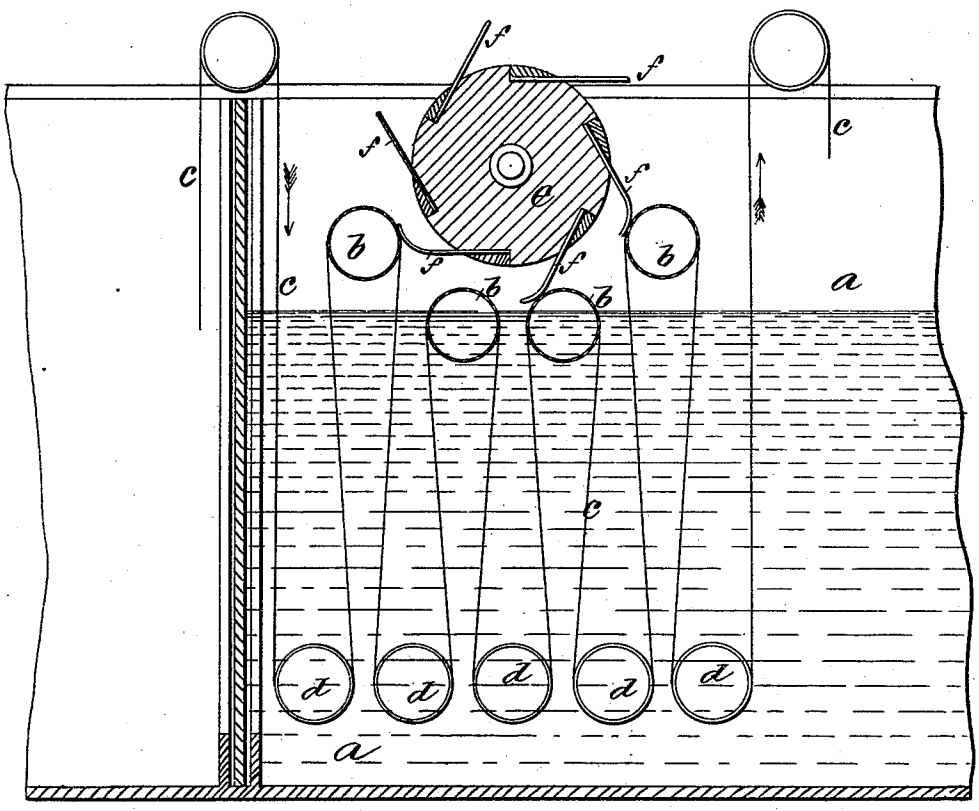
(No Model.) 2 Sheets—Sheet 1.

J. GIBSON, Jr., & J. PLATT.

APPARATUS FOR SOAPING AND DYEING TEXTILE FABRICS.

No. 278,125. Patented May 22, 1883.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

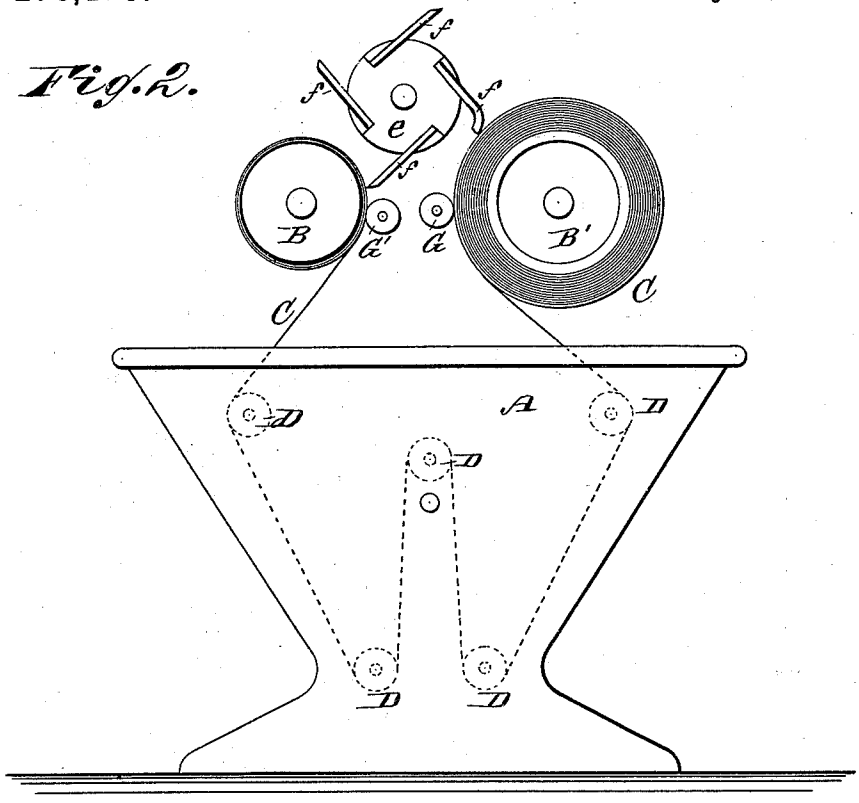
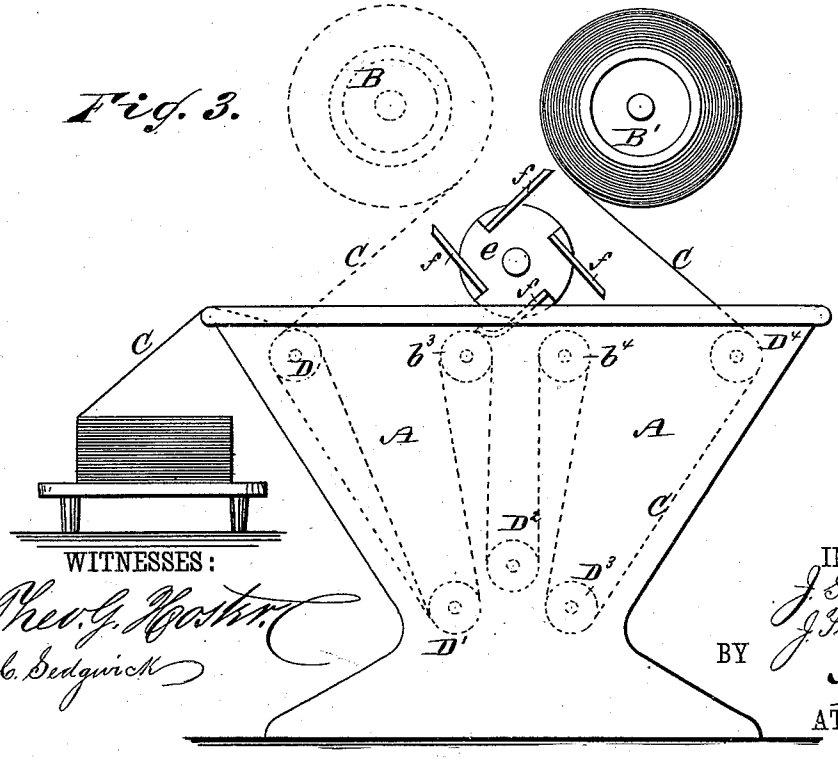


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN GIBSON, JR., OF MOTTRAM, COUNTY OF CHESTER, AND JOHN PLATT, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

APPARATUS FOR SOAPING AND DYEING TEXTILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 278,125, dated May 22, 1883.

Application filed February 7, 1883. (No model.) Patented in England November 8, 1882, No. 5,330.

To all whom it may concern:

Be it known that we, JOHN GIBSON, Jr., of Mottram, in the county of Chester, and JOHN PLATT, of the firm of MATHER & PLATT, Salford Iron Works, Manchester, in the county of Lancaster, both in England, have invented certain new and useful Improvements in Apparatus to be Used for Soaping and Dyeing Textile Fabrics in an open State, (for which we have obtained a Patent in Great Britain, No. 5,330, and bearing date November 8, 1882,) of which the following is a specification.

Our invention relates to machines or apparatus containing liquor or liquid through which fabrics are passed during or subsequent to the operation of soaping or dyeing.

The object of our invention, when applied to soaping, is to get rid of the thickening which has been used as a vehicle to carry the color or mordant when printing, thereby leaving the color only in the fabric. When applied to dyeing, our object is to cause the coloring-matter in the liquid to thoroughly impregnate the fabric; and our improvements enable us to perform such operations very efficiently and with greater facility than has hitherto been done. We attain these objects by the mechanism illustrated in the accompanying two sheets of drawings, in which—

Figure 1 is a sectional elevation of part of a soaping-machine. Fig. 2 is an elevation of a dyeing apparatus to which our invention is applied. Fig. 3 is a modification of our invention applied to dyeing.

a is a tank containing soaping-liquor.

b b are perforated fluted or corrugated rollers or guides (made of rigid material) at the upper part of the machine, over which the fabric *c* passes after passing under the guide-rollers *d d* in the lower part of the tank.

e is a revolving beater provided with flexible flaps *f*, which strike against the fabric while it is passing over the rollers *b b* and remove the dirt and impurities rapidly and effectually. The perforations in the rollers *b b* allow dirt and impurities to pass through them, and the inequalities of the surface of the rollers accelerate the action of the machine.

Any number of beaters and rollers may be used, and in any convenient position, provided, always, that the beaters strike the fabric while it is passing over the perforated rollers *b b*.

We will now describe our invention applied to a dyeing apparatus.

A is a dye-vat, which may be of the usual construction.

B B′ are two batch rollers or beams, over which the fabric C, under operation, is wound. The fabric C passes from the roller B around guide-rollers D in the dye-vat, where it is immersed in the dyeing materials or solution, and thence to the roller B′, on which it is wound or batched.

e is a revolving beater provided with a number of flexible flaps, *f*, made of india-rubber or other suitable material, the same as above, which flaps strike against the fabric on the rollers B B′ and thoroughly impregnate it with the dyeing material. Any number of beaters and rollers can be used. The shaft of the beater *e* is mounted in bearings on two vibrating levers, which are not shown in the drawings, one of which is pivoted at each side of the vat, and on one of these levers presser-rollers G G′ are mounted, which bear against the fabric on the rollers B B′ to regulate the position of the levers and insure a uniform action of the beaters on the fabric. The fabric is wound on the rollers B B′ alternately and passed through the dye-vat as often as may be necessary.

In the modification shown in Fig. 3 the fabric to be dyed passes from the batch-roller B over the upper guide-roller, D, into the dye-vat A, around the lower guide-roller, D′, to the perforated fluted or corrugated roller b^3, around the guide-roller D^2, and over the perforated fluted or corrugated roller b^4, from which it passes around the other guide-rollers, D^3 D^4, to the batch-roller B′. The flexible flaps of the revolving beater *e* strike against the fabric while it is passing over the perforated rollers b^3 and b^4 and insure its being thoroughly impregnated with the dyeing materials.

We are aware that prior to our invention revolving beaters with rollers have been used in machines for washing, bleaching, and otherwise treating textile fabrics; but the application of such beaters without the combina-

tion of suitable rollers or surfaces over which the fabric passes when being beaten has proved ineffectual.

We therefore claim as novel—

1. In an apparatus for soaping textile fabrics, the combination, with perforated fluted or corrugated rollers or guides, of a beater which will act on the fabric while it is passing over the rollers or guides, substantially in the manner and for the purpose herein set forth.

2. In apparatus for dyeing textile fabrics, the combination, with the perforated rollers b^3 b^4, of a beater which acts on the fabric while it is passing over the said rollers, substantially as and for the purpose herein described.

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