

No. 789,260.

PATENTED MAY 9, 1905.

W. H. CROMPTON & W. HORROCKS.

MACHINE FOR MERCERIZING, &c.

APPLICATION FILED APR. 29, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

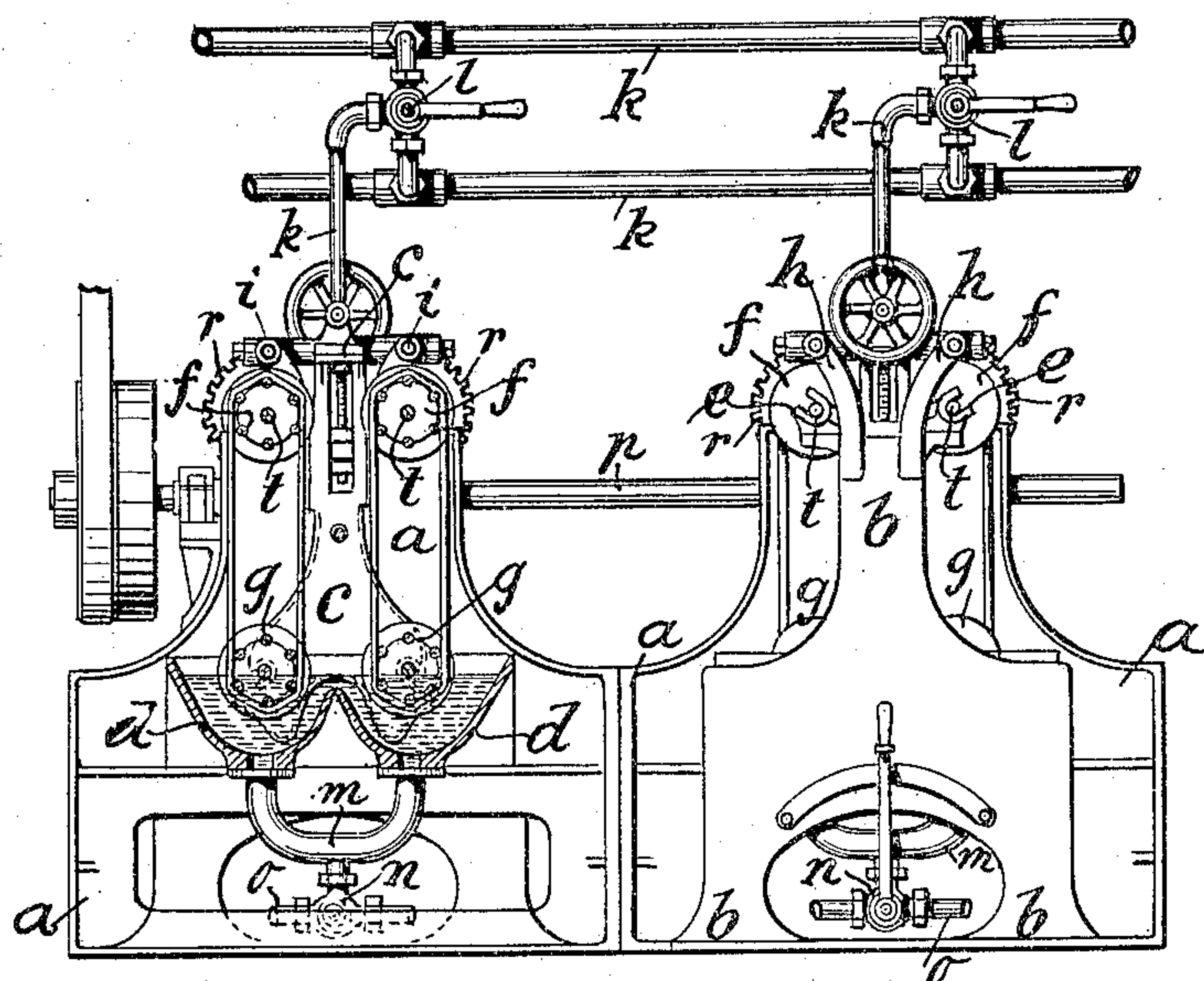
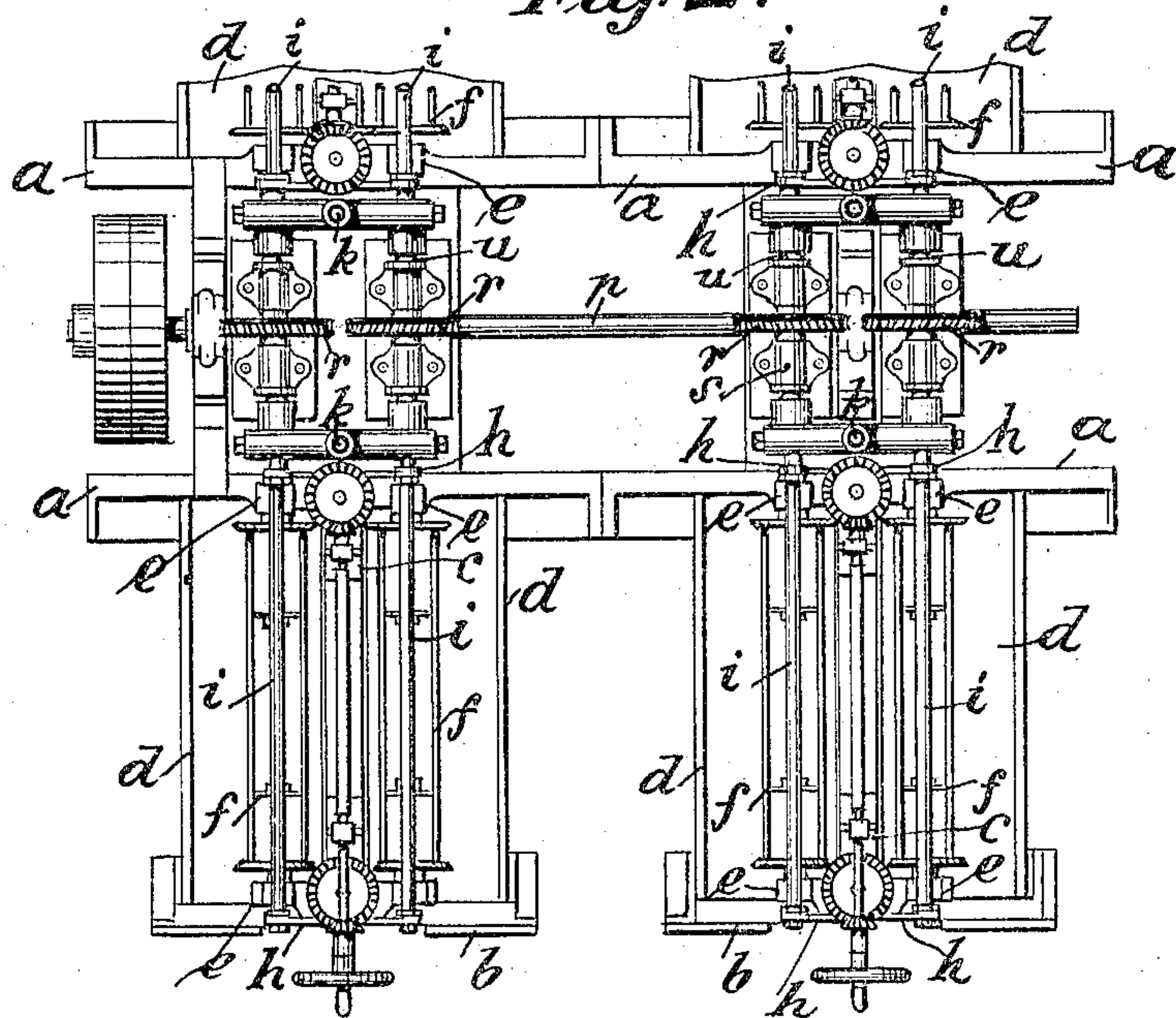


Fig. 2.



Witnesses:
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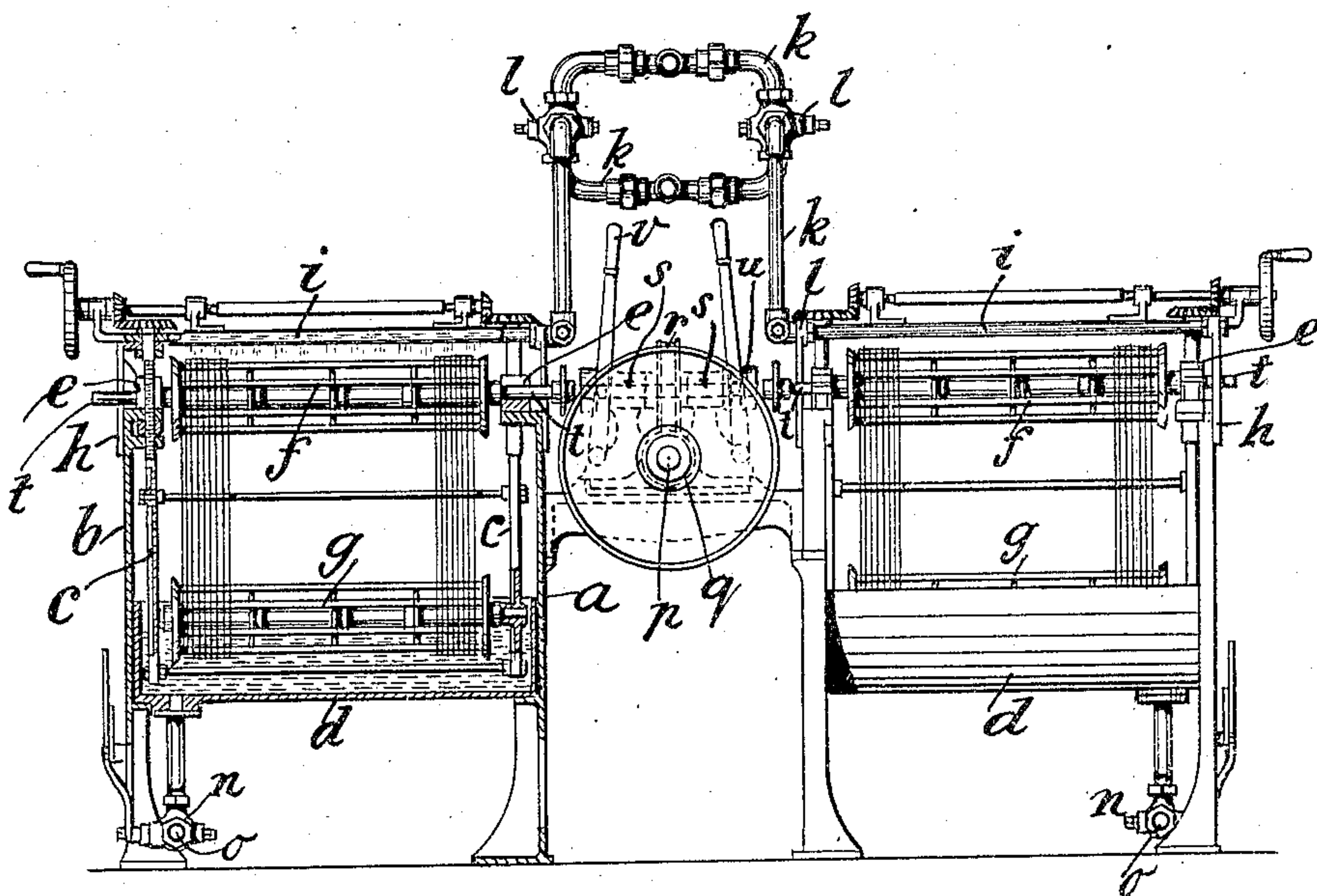
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY CROMPTON AND WILLIAM HORROCKS, OF RADCLIFFE,
ENGLAND.

MACHINE FOR MERCERIZING, &c.

SPECIFICATION forming part of Letters Patent No. 789,260, dated May 9, 1905.

Application filed April 29, 1904. Serial No. 205,627.

To all whom it may concern:

Be it known that we, WILLIAM HENRY CROMPTON and WILLIAM HORROCKS, subjects of the King of Great Britain, residing at Radcliffe, in the county of Lancaster, England, have invented new and useful Improvements in Machines for Mercerizing, Scouring, Bleaching, Dyeing, Washing, and Like Treatment of Yarn in Hank Form, of which the following is a specification.

Our invention relates more particularly to improvements in that type of machines for mercerizing, scouring, bleaching, dyeing, washing, and like treatment of yarn in hank form for which Letters Patent No. 680,131, dated August 6, 1901, were granted to us and in which the hank-reels are mounted in frames employed in a tank and are carried by the hanks and the latter thereby subjected to the whole weight of the said frames, which improvements may, however, also be used in connection with hank-reels mounted in any other suitable manner. In the said type of machines it is necessary to lift the said hank-frames out of the tank for the purpose of draining the hanks previous to further treatment with liquor in another machine, and the liquor-tank forms one continuous receptacle, and thus does not allow of building the machine in sections—that is to say, increase its capacity by degrees and facilitate transport.

The object of our present invention is chiefly to provide means whereby the said defects are overcome and also the quantity of liquor required for the treatment of the hanks is greatly reduced. We attain these objects by the mechanism illustrated in the accompanying two sheets of drawings, in which—

Figure 1 is a side view partly in section, Fig. 2 a plan, and Fig. 3 an end view partly in section, of a double machine constructed in accordance with our invention.

Similar letters refer to similar parts throughout the several views.

In carrying out our invention, and referring to the figures generally, we dispense with the usual liquor-tank entirely and form a framework consisting of a back *a*, adapted to be bolted together in sections, and of a

front *b* for each section large enough to accommodate, say, one of the hank-frames *c* or one or more pairs of hank-reels. The said backs and fronts are kept the required distance apart from each other near their base by a trough *d*, bolted thereto, and the hank-frames *c* are employed between the said backs and fronts and vertically guided therein. The top of each front *b* and back *a* is furnished with two open bearings *e*, adapted to receive the top reels *f*, while the bottom reels *g* revolve in the frame *c*. The said bearings being open facilitate the placing of the hanks upon the reels or removing the same therefrom. The top of each frame back *a* and front *b* is also furnished with two brackets *h*, between which perforated pipes *i* are secured, one above each of the top reels *f*, adapted to squirt the liquor onto the hanks thereon. By a series of pipes *k* and three-way taps *l* the said perforated pipes are supplied with the different kinds of liquor necessary for the treatment of the hanks. The liquor squirted onto the hanks by the said perforated pipes is caught by the trough *d*, and the bottom hank-reels *g* are adapted to turn therein. By a pipe *m* and three-way tap *n* the troughs *d* are each connected with another pipe, *o*, which conveys the liquor from the said troughs into a tank or tanks, from which it is raised by any convenient form of lifter into another tank or tanks, from which the said perforated pipes are supplied by means of the pipes *k*, thus obtaining a continuous circulation of the liquor. The said top hank-reels *f* have rotary motion imparted at the back from the driving-shaft *p* by worm and worm-wheel gearing *q r*, the worm-wheel shaft *s* and reel-shaft *t* being adapted to be engaged and disengaged by a suitable form of coupling *u*, interposed between the same and operated, say, by a handle *v*.

If deemed necessary, we may provide suitable means for automatically regulating the duration of any of the said treatments—say such as tappets, wheels or link-chains, snugs on chains, worms and worm-wheels arranged in connection with the driving-gear, supply and outlet taps of the machine—as will be

readily understood without special illustration.

What we claim as our invention, and desire to secure by Letters Patent, is—

5 1. In a machine for mercerizing, scouring, bleaching, dyeing, washing and the like treatment of yarn in hank form, a frame comprising a back and a front built up in sections, a trough or liquor-receptacle between each section connecting the back and front thereof
10 together and one or more pairs of hank-reels vertically stationary between each of the said sections, the bottom hank-reels thereof revolving in the said trough or liquor-receptacle, all combined substantially as and for the
15 purpose set forth.

2. In a machine for mercerizing, scouring,

bleaching, dyeing, washing and the like treatment of yarn in hank form, a frame built up in one or more sections, each of which comprises one or more pairs of hank-reels, a
20 trough or liquor-receptacle, a spray-pipe above each top hank-reel connected with one or more liquor-supply tanks and a drain-pipe for the said trough or receptacle, all combined substantially as and for the purpose set forth.
25

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

WILLIAM HENRY CROMPTON.
WILLIAM HORROCKS.

Witnesses:

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STANLEY E. BRASSIALL.