

(No Model.)

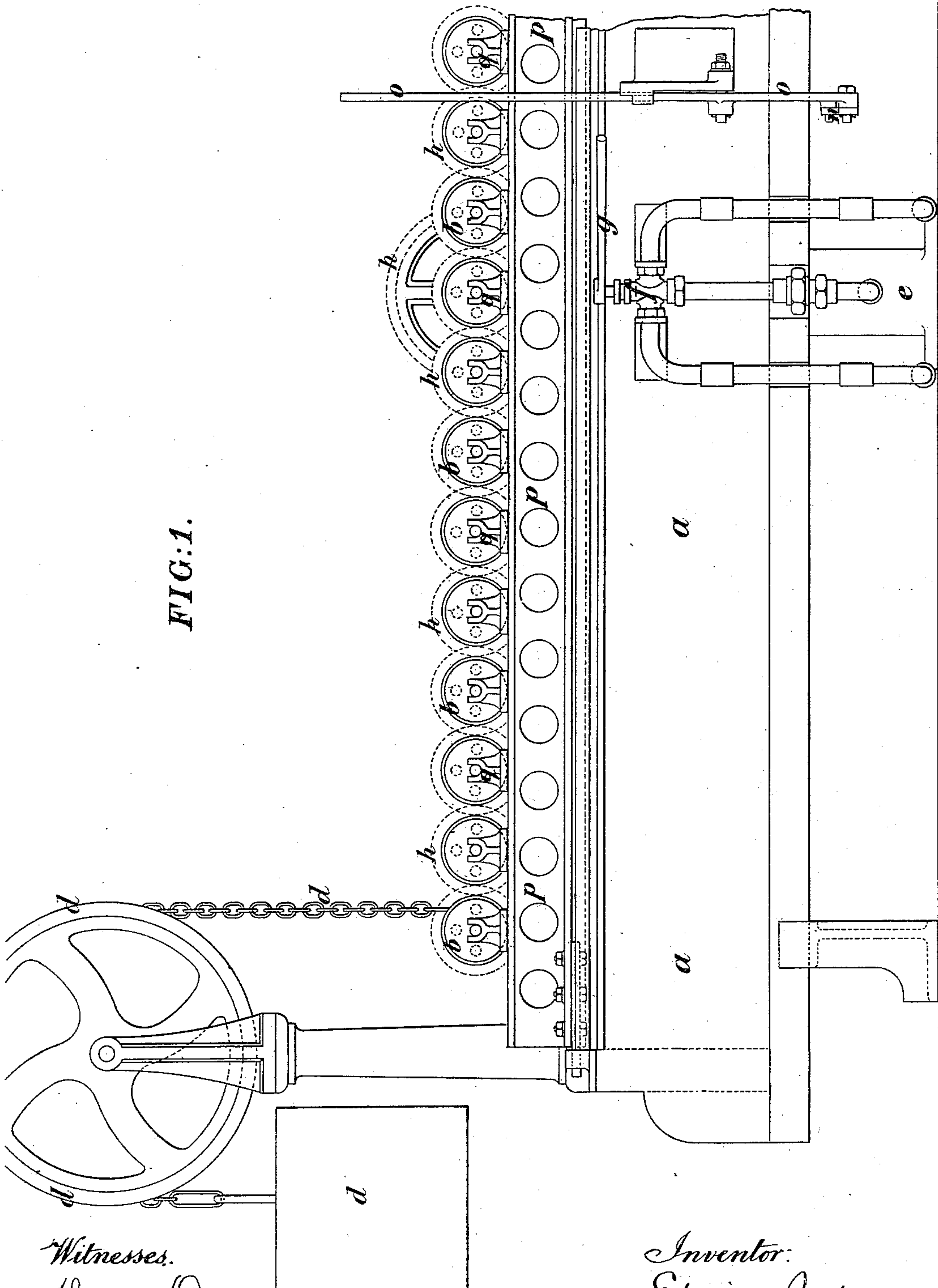
2 Sheets—Sheet 1.

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APPARATUS FOR DYEING AND WASHING HANKS OF YARN, &c.

No. 259,465.

Patented June 13, 1882.



Witnesses.
Harry Drury
Harry Smith

Inventor:
Edwin Boden
by his Attorneys
Howson & Son

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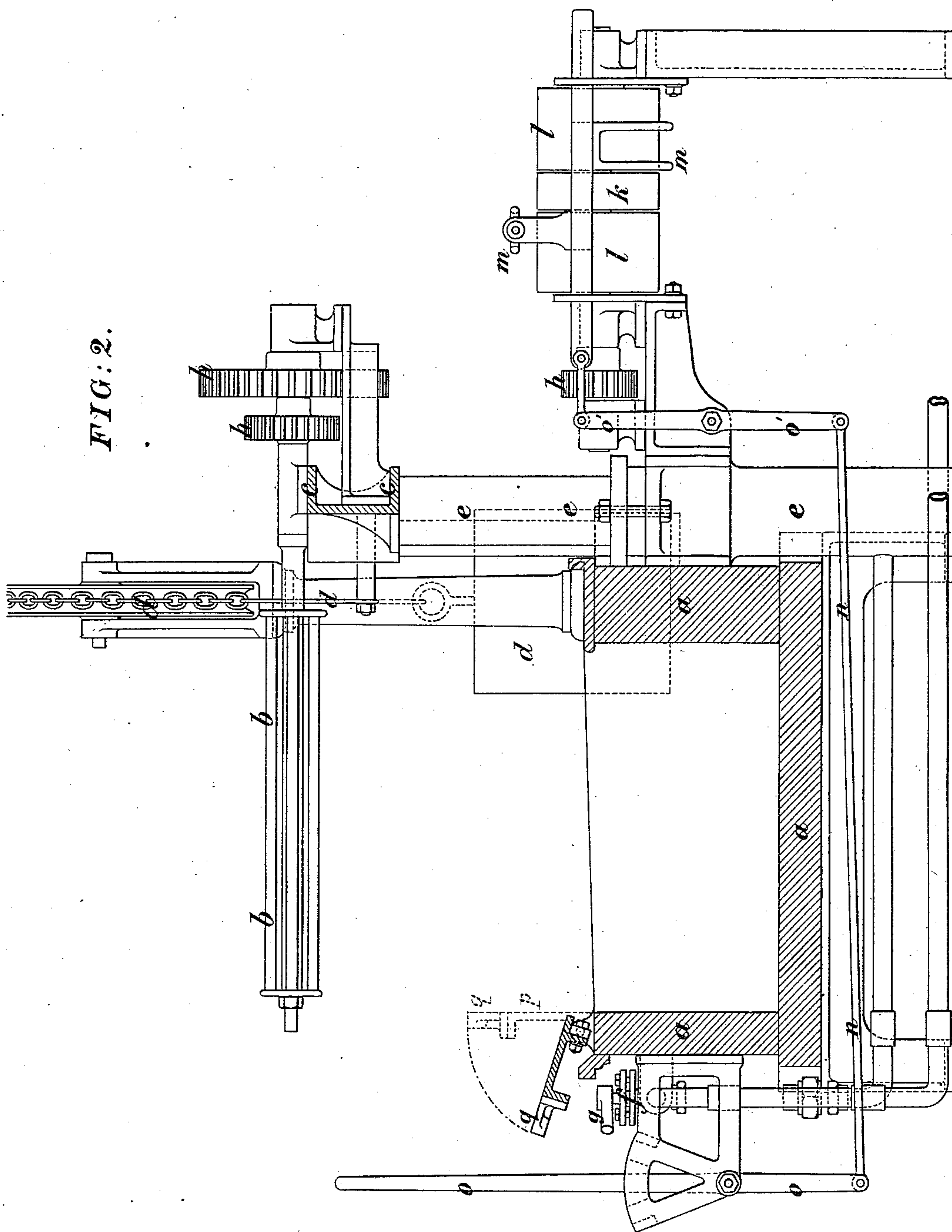
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UNITED STATES PATENT OFFICE.

EDWIN BODEN, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

APPARATUS FOR DYEING AND WASHING HANKS OF YARN, &c.

SPECIFICATION forming part of Letters Patent No. 259,465, dated June 13, 1882.

Application filed March 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWIN BODEN, a subject of the Queen of Great Britain, and residing at Manchester, in the county of Lancaster, England, have invented Improvements in the Construction of Apparatus for Dyeing or Washing Hanks of Yarn, Cord, or Braid, of which the following is a specification.

This invention relates to that class of dyeing and washing apparatus consisting of a vat or cistern provided with a series of revolving rollers, over which the hanks are placed.

The nature of my invention and its application to the class of apparatus above named will be readily understood on reference to the annexed drawings and the following explanation thereof.

Figure 1 is a front elevation of one end of the apparatus in its working position, and Fig. 2 is a partial transverse sectional view of the same with the rollers raised up out of the vat.

a a is the vat, and *b b* the rollers, which, instead of being made solid and cylindrical, as usual, I make in a cage form of two end disks fixed upon an axle and united by about four longitudinal bars or tubes, (preferably the latter,) and made of brass. (See Fig. 2.) The rollers *b b* are mounted, as usual, in bearings at one end, (the back,) attached to a frame, *c c*, working in vertical slides, being counterbalanced by weights and chains *d d*, and capable of being raised and lowered, so as to raise the hanks out of the vat or cistern *a a* when required, as shown at Fig. 2, and to return them into the same, as at Fig. 1. For this purpose I employ a hydraulic ram, *e e*, which is actuated by a head or pressure of water, the water being admitted when required by means of a tap, *f f*, opened and closed by a lever, *g g*, or otherwise. The rollers *b b* are supported at one end only, (the back,) as usual, having the other end open or free for the placing and removing of the hanks.

To the back end of the axes of the rollers *b b* the ordinary spur driving-gear, *h h*, is connected, and to this driving-gear I attach a reversing apparatus, consisting by preference of a short shaft or axle, *i i*, on which is keyed a driving-pulley, *k k*. On each side of the latter is fitted a loose pulley, *l l*, one of which has a crossed strap and the other an open strap passing round it from the shafting. A

double-strap fork, *m m*, is provided, which is actuated by means of a rod, *n n*, and levers *o o'*. In the position shown at Fig. 2 both straps are on the loose pulleys. By moving either the crossed or the open strap onto the fast pulley *k k* the rollers will be caused to revolve, and the direction of their revolution can be reversed at any time by means of the lever *o o*. This is not only beneficial to the dyeing and washing by producing a more even effect, but it is also very useful at times if the hanks should become entangled. I may here remark that other known reversing apparatus may be used for this purpose.

When using this apparatus for dyeing or washing braids I also propose to place between all the revolving rollers in the vat sectional divisions, perforated so as to allow the liquor to circulate freely from end to end of the vat, such divisions being made of wood, metal, or other material, and to be movable, being fitted in grooves or slots, so that they can be fixed or taken out at the will of the dyer while the liquor is being duly prepared. These divisions are not necessary for yarns.

On the front side of the vat or cistern *a a* (see Fig. 1) I fix a long support, *p p*, having bearings *q q* for the free ends of the axes of the rollers *b b* to rest upon when in working position, as shown in that figure, and I attach this support to the side thereof by means of hinges, so that it may be turned up or down out of the way, as shown at Fig. 2, when the rollers are removed from the vat or cistern.

I claim as my invention—

1. The combination of a vat, roller-frame *c*, vertical guides, and balance-weights with a hydraulic ram, *e*, carrying said frame, as and for the purpose set forth.

2. The combination of the rollers and a movable frame, having bearings for the rollers at one side, with a vat having pivoted bearings for the rollers at the other side, all substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN BODEN.

Witnesses:

GEORGE DAVIES,
CHARLES DAVIES.