

No. 861,649.

PATENTED JULY 30, 1907.

W. HANNAH.
DYEING FRAME.

APPLICATION FILED OCT. 26, 1906.

2 SHEETS—SHEET 1.

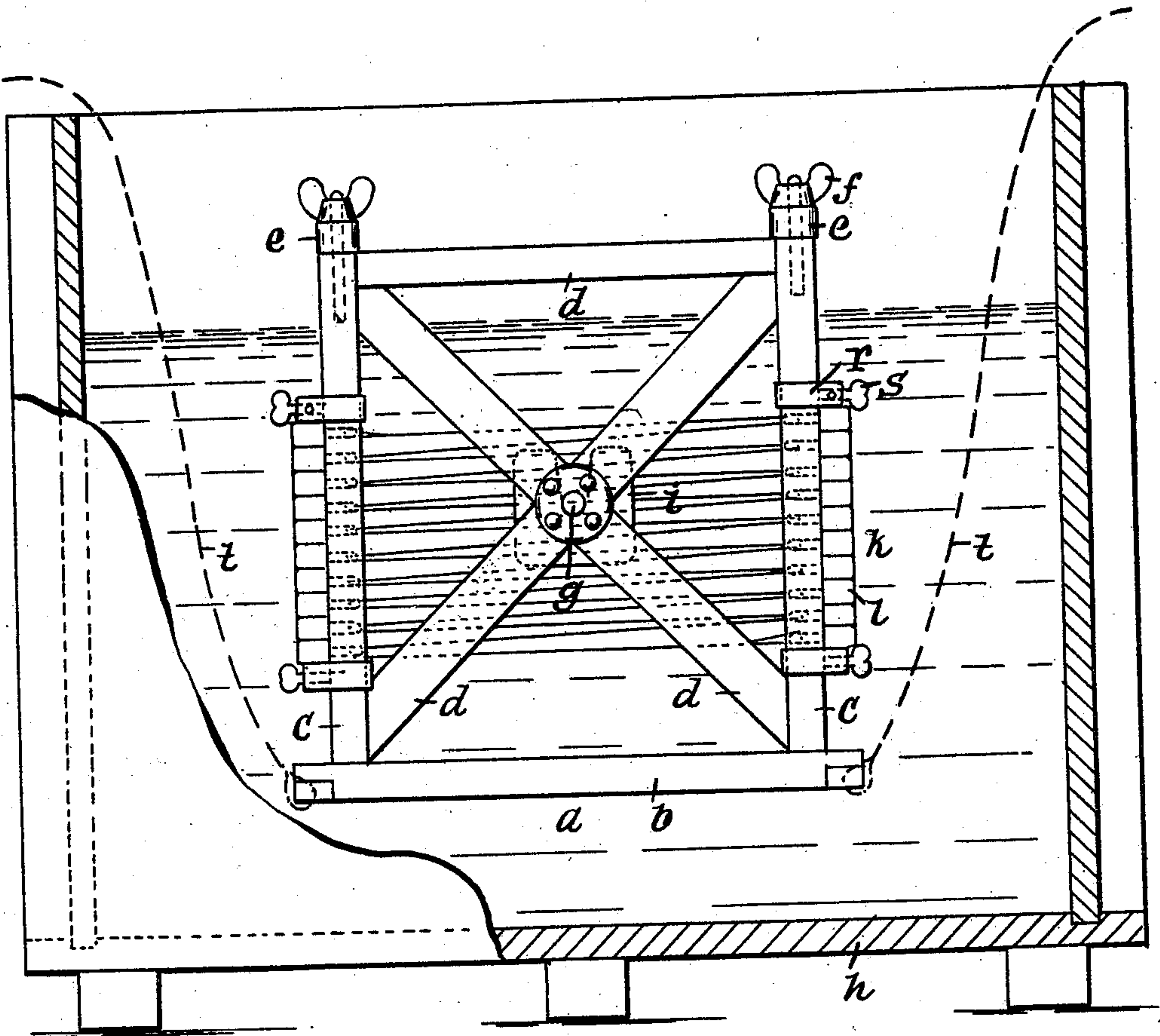


Fig. 1.

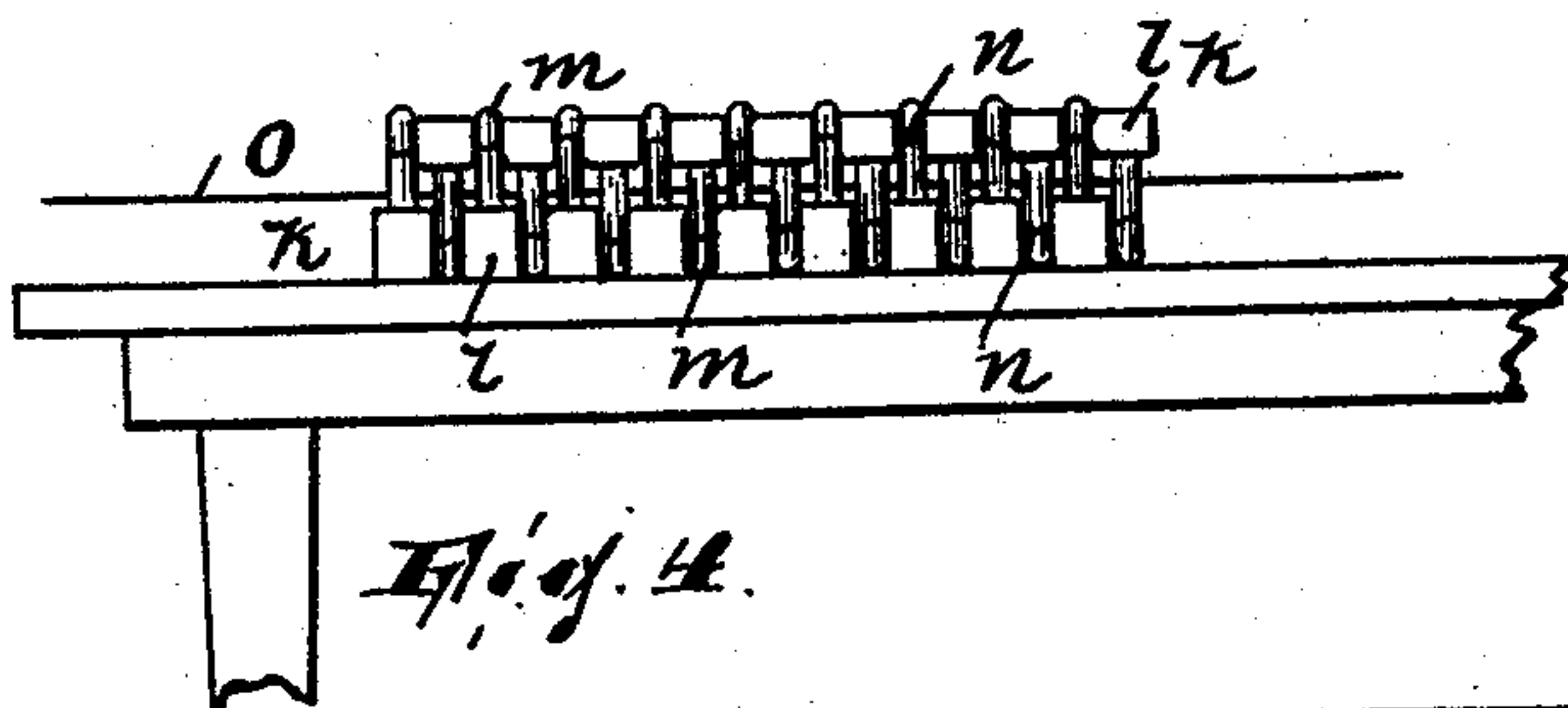


Fig. 2.

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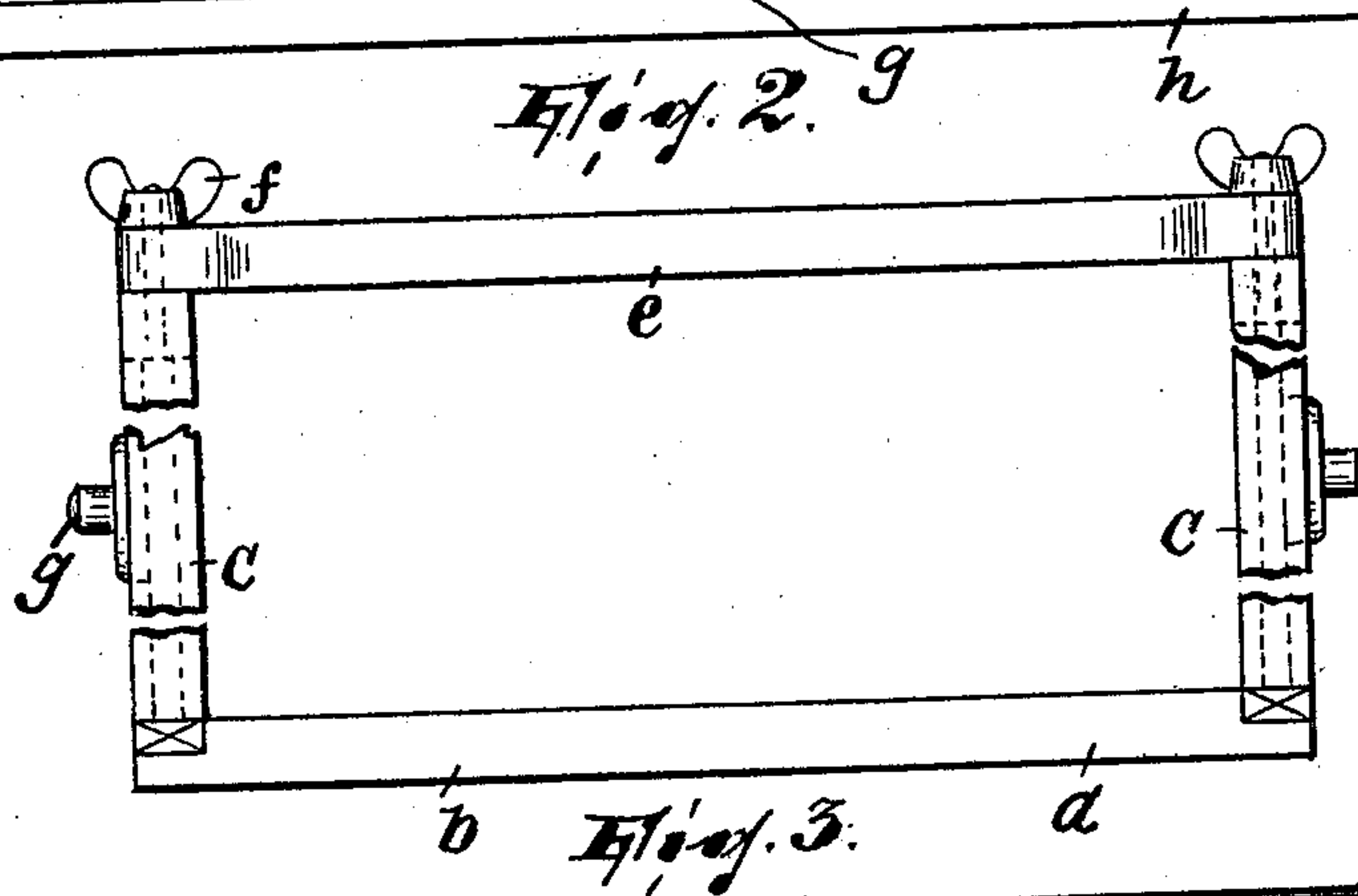
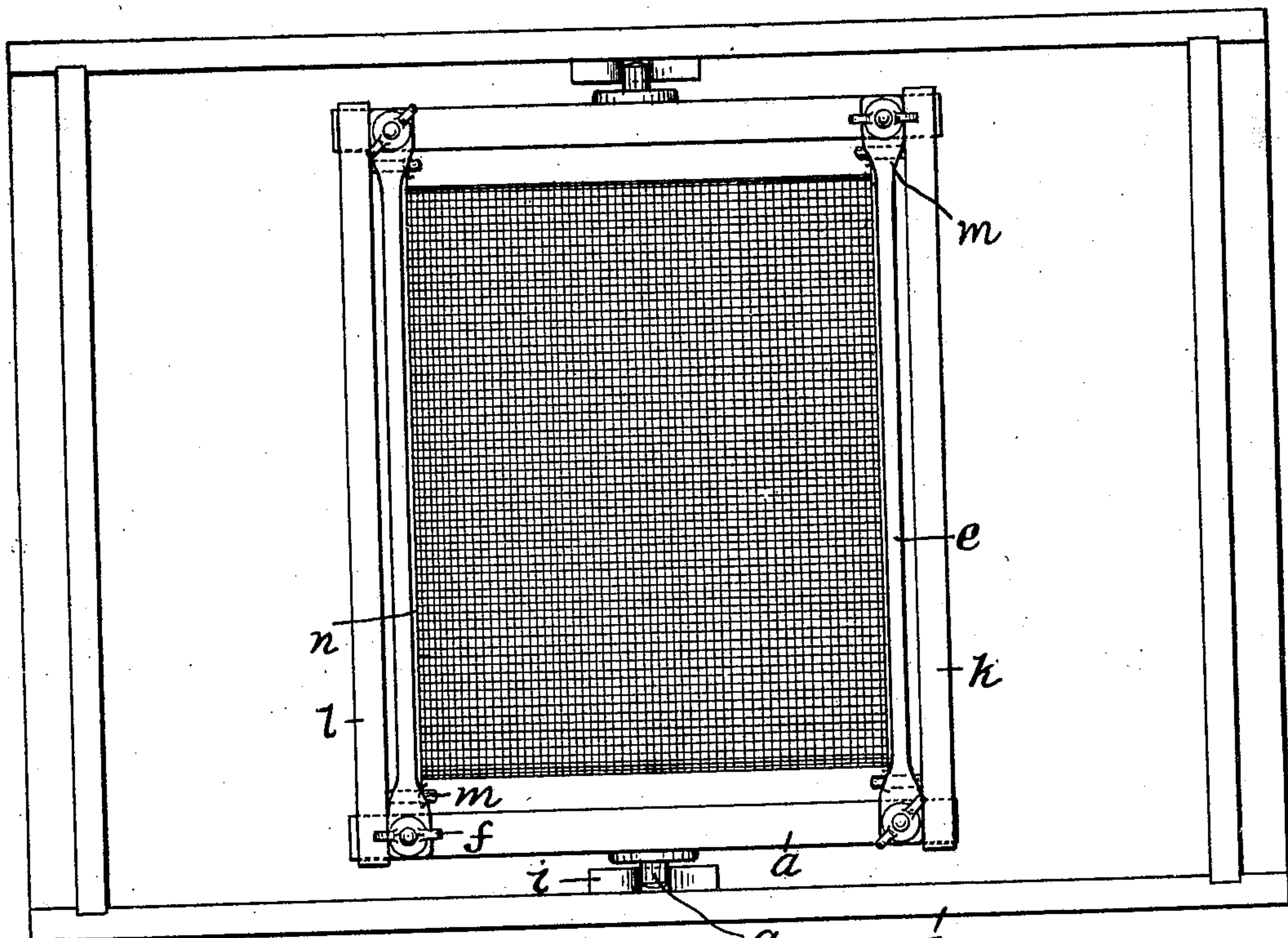
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UNITED STATES PATENT OFFICE.

WILLIAM HANNAH, OF PATERSON, NEW JERSEY.

DYEING-FRAME.

No. 861,649.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed October 26, 1906. Serial No. 340,659.

To all whom it may concern:

Be it known that I, WILLIAM HANNAH, a citizen of the United States, residing in Paterson, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Dyeing-Frames; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to the dyeing of fabrics and the like, and it has reference particularly to the dyeing, in the piece, of such delicate loose- or open-weave materials as, for instance, chiffon, gauze, etc.

The apparatus at present in use for holding the fabric while undergoing the dyeing process has been found to be objectionable for several reasons the principal among which is that great care must be used or else the apparatus will not meet the requirement of maintaining a uniform tension on all parts of the fabric; without the maintaining of such a uniform tension, the fabric, being extremely delicate, has its texture spoiled and misshapened, thus materially reducing its sale value.

My invention has for its object to provide an apparatus whereby the goods may be securely held while undergoing the dyeing process in perfect condition for not only attaining the best dyeing effects but absolutely without permitting the goods to be subjected to influences, whether derived from the apparatus itself or from shrinking or the movement of the goods through the dyeing fluid, which would tend to spoil the texture or disarrange the weave.

By my apparatus, the goods may be placed in the holding apparatus in a relatively large quantity and without requiring skilled labor or any great loss of time, and when so arranged in said apparatus the whole is in convenient form for introduction into a dye-tub and for such subsequent agitation therein as the dyeing process requires.

In the accompanying drawings, wherein my invention is fully illustrated, Figure 1 is a side view of the holding apparatus shown as arranged in the dye-tub, the inner wall of the latter being broken away; Fig. 2 is a top plan view of substantially what is seen in Fig. 1; Fig. 3 is a front view of the frame of the apparatus; and, Fig. 4 illustrates the manner of arranging the fabric on the holding bars preparatory to introducing the whole into the frame.

a designates a suitable frame comprising the rectangular base, *b*, two pairs of uprights *c* at each side of the base, braces *d* connecting the uprights *c* in each pair,

and removable top-bars *e* connecting the front and back uprights, the same being removably held in place against the tops of said uprights by wing-nuts *f*.

At the sides of the frame *a* are arranged trunnions *g* adapted to support the frame when the same is introduced into the dye-tub *h*, said trunnions resting in bearing blocks *i*.

Bearing against the uprights are the holding-bars *k* for the fabric. Each holding-bar consists of a wood or other suitable strip *l* having stout pegs *m* projecting from one side thereof, one near each end, and a taut cord or wire *n* attached to and connecting said pegs.

The frame *a* is made to accommodate as much of the material to be dyed as the user might at any time find necessary, consistent with convenience in handling; and according to the amount of fabric which, at any time, is to be dyed, so a greater or less number of the holding-bars *k* are arranged in said frame. The holding-bars *k*, supporting the fabric, are arranged in the frame in the manner shown in Fig. 1, and in order to accomplish this in a convenient manner the operator first arranges the holding-bars on a table or other support as shown in Fig. 4, alternate holding-bars being inverted. The solid line *o* in Fig. 4 designates the fabric which, after the holding bars have been thus arranged, is threaded through between the cord or wire and the strip *l* of each holding-bar. The material is pinned or stitched temporarily around the cord of the furthestmost holding-bar and then the latter is removed to the frame *a* where, the top-bars having been first removed so as to permit the fabric to enter the frame, said holding-bar is arranged against the further pair of uprights with its pegs projecting inwardly, as shown in Fig. 1; the next holding-bar is now brought to the frame and arranged in a similar manner with respect to the other two uprights, and so on until the last holding bar has been arranged in the frame, when the end of the goods is pinned or stitched to the cord or wire thereof. The top-bars may now be replaced.

In order to provide for accommodating more or less of the holding-bars in the frame as required, clips *r*, arranged to slide vertically on said uprights *c* and having thumb-screws *s* for securing them where adjusted, may be provided, each two pairs of clips receiving between them the corresponding series of holding-bars and thus securing them against free movement; by vertically adjusting the clips the goods may be arranged at any elevation in the frame.

When the goods has been arranged in the frame *a* in the manner above described, the whole is taken to the dye-tub *h* and set therein with the trunnions *g* journaled in the bearing blocks, whereupon the frame may be rotated or oscillated to cause the dye to thoroughly

impregnate the goods; the movements of the frame may be effected by cords *t* extending out of the dye-tub.

When the dyeing operation has been completed and the frame removed from the dye-tub, the goods may be quickly detached by simply cutting the cords *n* which leaves the goods in convenient folds, flat and regular, ready to be wound up on a beam.

In view of the foregoing it will be seen that my apparatus makes it possible to perform all the operations necessary in the dyeing process quickly and with facility and without, moreover, subjecting the goods to undue strains or other effects which would spoil its texture.

In using the expression "cords" in the claims, it will be of course understood that cords, wires and similar attenuated flexible devices are comprehended. If cords are used and they are cut away to release the fabric after the dyeing, new ones may be attached for the next operation; or the cords or wires might be slipped on or off the pegs as occasion requires.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:

1. In an apparatus for holding fabrics and the like in dyeing, the combination of a frame and fabric holding-bars arranged removably and each sustained adjacent both ends in said frame in two substantially opposed series, so that the fabric may extend back and forth held by and be-

tween the ends of the holding-bars of said series, alternately, substantially as described.

2. In an apparatus for holding fabrics and the like in dyeing, the combination of a frame and fabric holding-bars arranged removably in said frame in two substantially opposed series, each holding-bar comprising a taut cord adapted to directly sustain the fabric so that the fabric may extend back and forth held by the cords of the holding-bars of said series, alternately, substantially as described.

3. In an apparatus for holding fabrics and the like in dyeing, the combination of a frame and fabric holding-bars arranged removably in said frame in two substantially opposed series, each holding-bar comprising a taut cord arranged on the inside of said bar and adapted to directly sustain the fabric so that the fabric may extend back and forth held by the holding-bars of said series, alternately, substantially as described.

4. In an apparatus for holding fabrics and the like in dyeing, the combination of a frame, fabric-holding-bars arranged and each sustained adjacent both ends in said frame in substantially opposed series, so that the fabric may extend back and forth held by and between the ends of the holding-bars of said series, alternately, and adjustable clips acting to hold said holding bars in the frame, substantially as described.

In testimony that I claim the foregoing, I have hereunto set my hand this 23rd day of October, 1906.

WILLIAM HANNAH.

Witnesses:

JOHN W. STEWARD,
I. D. STEWARD.