

No. 653,581.

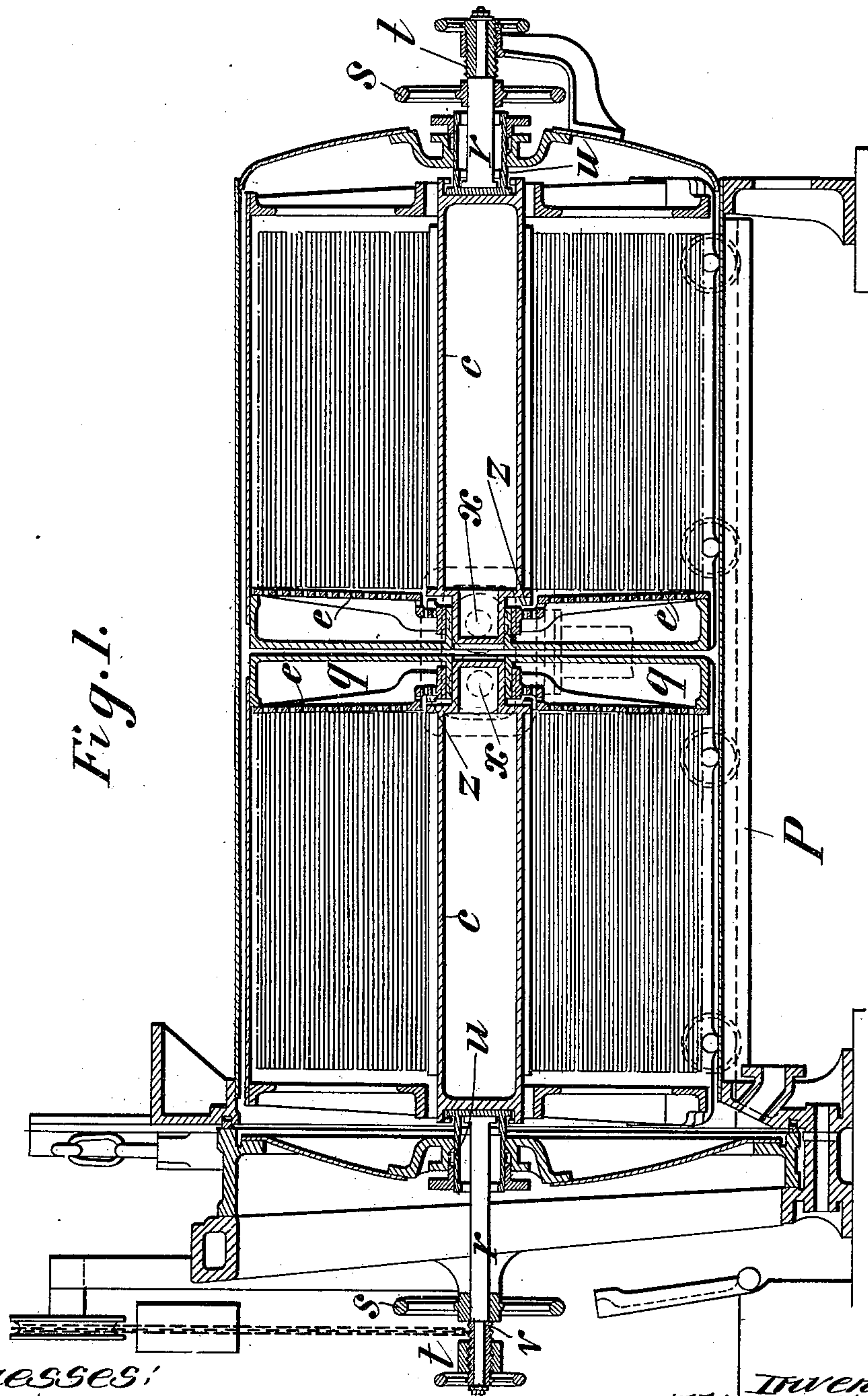
Patented July 10, 1900.

W. MATHER.
APPARATUS FOR DYEING.

(Application filed Apr. 2, 1900.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses:
C. D. Kessler
Geo. Sullivan.

Inventor
William Mather
By James L. Norris
Atty

No. 653,581.

Patented July 10, 1900.

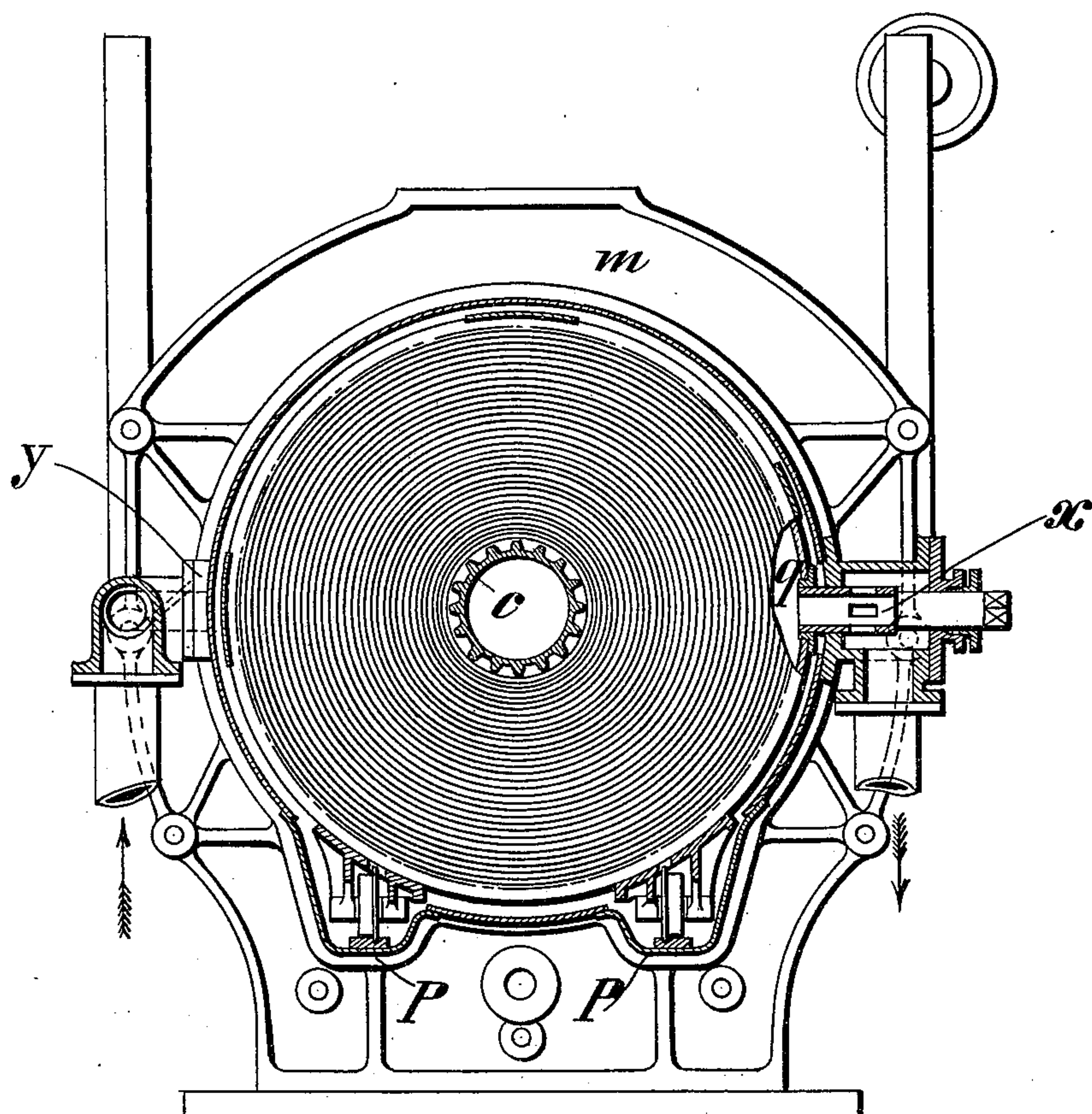
W. MATHER.
APPARATUS FOR DYEING.

(Application filed Apr. 2, 1900.)

(No Model.)

4 Sheets—Sheet 2.

Fig. 2.



Witnesses:

C. D. Kuster

Geo. L. Sullivan

Inventor
William Mather

By James L. Norris

Atty

No. 653,581.

Patented July 10, 1900.

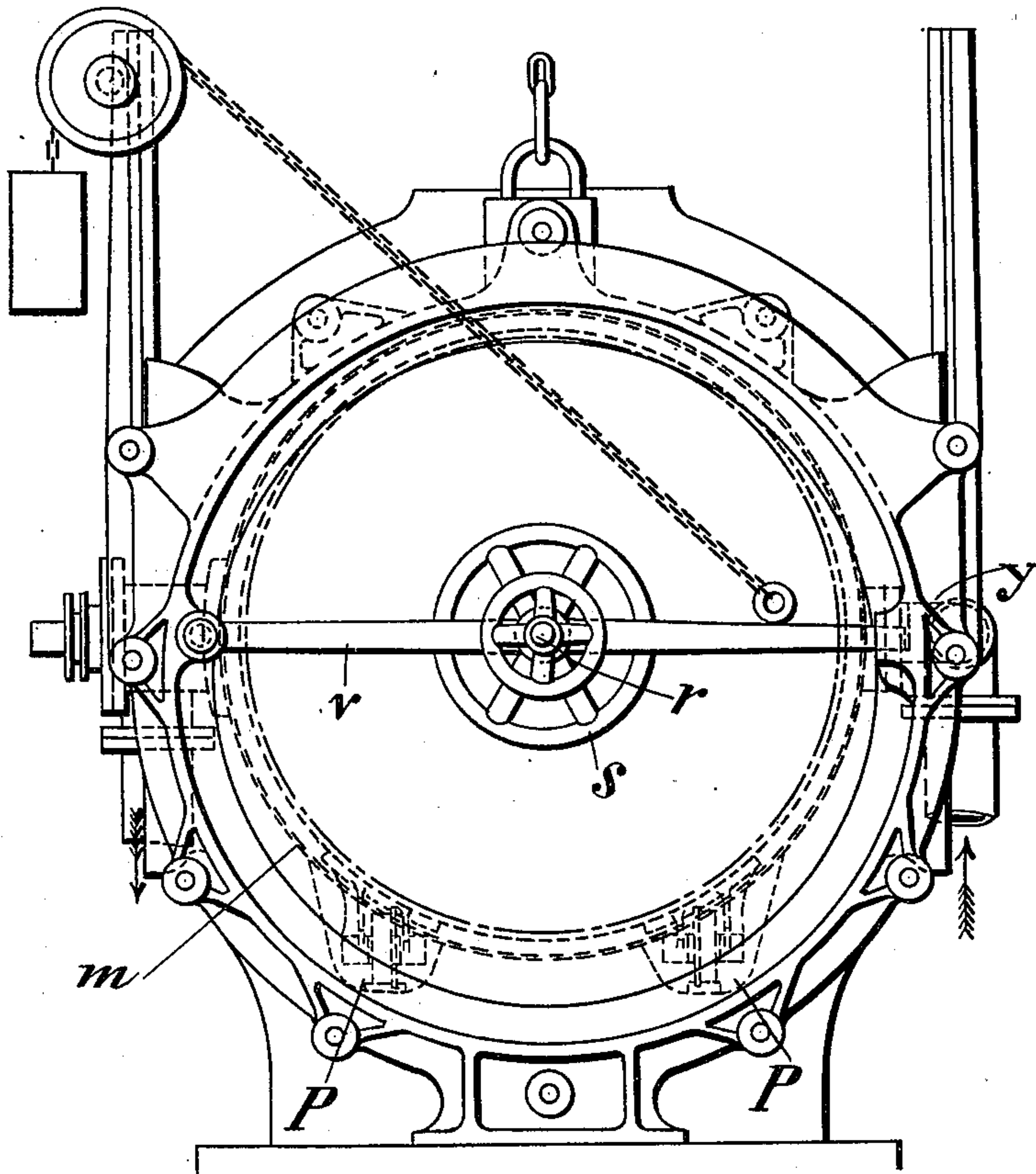
W. MATHER.
APPARATUS FOR DYEING.

(Application filed Apr. 2, 1900.)

(No Model.)

4 Sheets—Sheet 3.

Fig. 3.



witnesses:

C. D. Hester

Geo. L. Sullivan.

Inventor
William Mather

By James L. Norris

Atty

No. 653,581.

Patented July 10, 1900.

W. MATHER.
APPARATUS FOR DYEING.

(Application filed Apr. 2, 1900.)

(No Model.)

4 Sheets—Sheet 4.

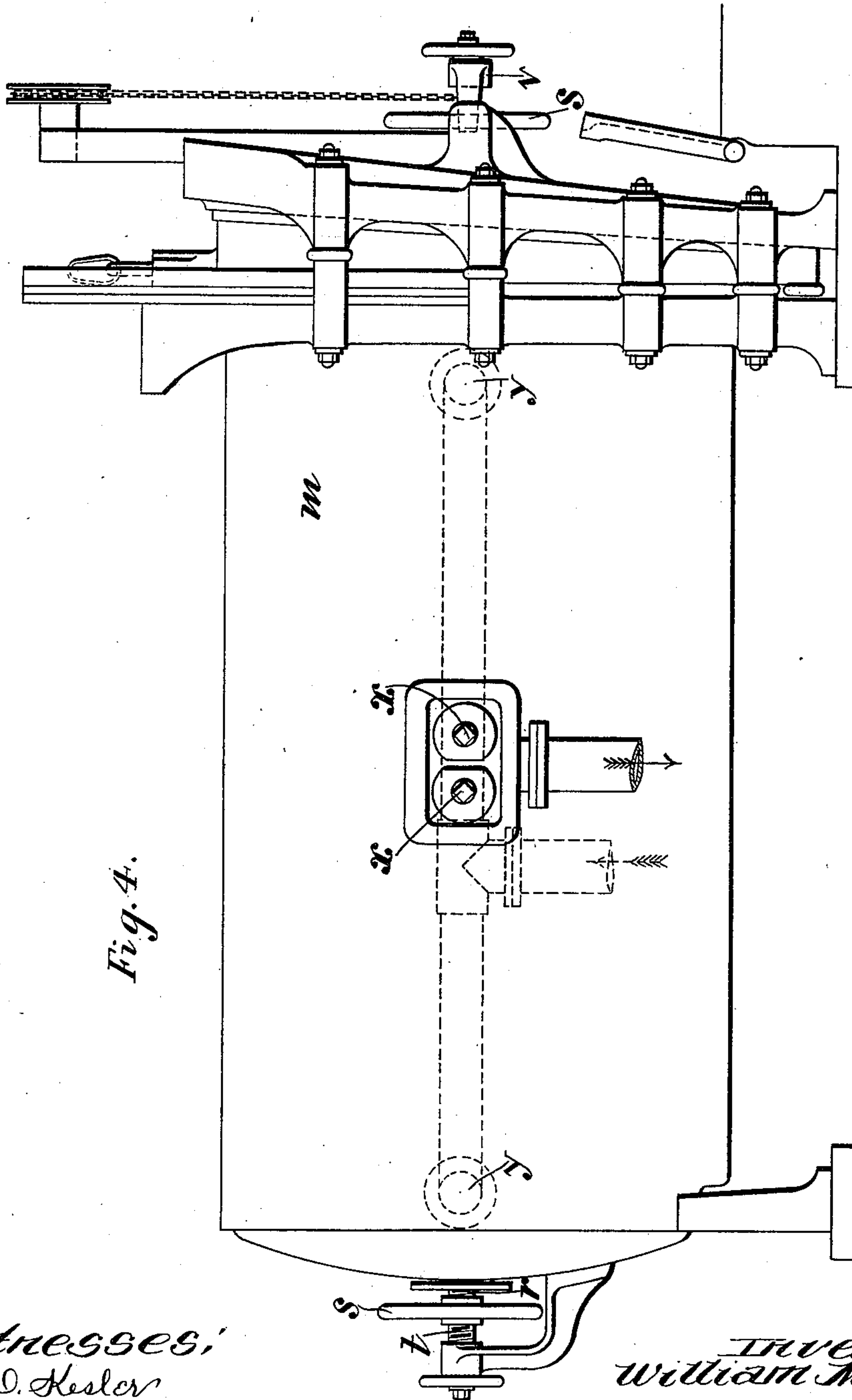


Fig. 4.

Witnesses:
C. W. Hester
Leo L. Sullivan

Inventor
William Mather
By James L. Norvig.
Atty

UNITED STATES PATENT OFFICE.

WILLIAM MATHER, OF MANCHESTER, ENGLAND.

APPARATUS FOR DYEING.

SPECIFICATION forming part of Letters Patent No. 653,581, dated July 10, 1900.

Original application filed August 28, 1899, Serial No. 728,783. Divided and this application filed April 2, 1900. Serial No. 11,165. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MATHER, a citizen of England, residing at Salford Iron Works, Manchester, in the county of Lancaster, England, have invented a certain new and useful Apparatus for Treating Webs of Fabric with Liquids, Vapors, or Gases, (for which I have applied for a patent in Belgium, dated August 17, 1899, No. 144,469; in France, dated August 17, 1899, No. 291,822; in Great Britain, dated August 17, 1899, No. 16,730; in Italy, dated November 20, 1899, Vol. CXV, No. 43, and in Spain, dated September 29, 1899, No. 24,656,) of which the following is a specification.

In a pending application I have described a method of treating webs of fabric with liquids, vapors, or gases so as to secure uniformity of action on all parts of the webs, and I have shown how this method can be practically carried out by means of apparatus of several forms.

My present invention, which was originally incorporated in the pending application referred to above, filed August 28, 1899, Serial No. 728,783, of which this is a division, relates to one kind of apparatus by which the treatment above set forth can be conveniently and economically applied to woven webs, as I shall describe, referring to the accompanying drawings.

Figure 1 is a longitudinal section, Fig. 2 is a transverse section, Fig. 3 is an end view, and Fig. 4 is a side view, of apparatus according to my present invention for treating rolls of fabric in a keir which has comparatively-small capacity for liquid, so that small quantities of fluid can be successively applied to the fabric, each fresh supply being free from the impurities which tend to accumulate in a large quantity of fluid when that is repeatedly circulated through the apparatus and fabric.

For this purpose I arrange the apparatus as shown in the drawings. The keir *m* receives two trucks, each having on it a large horizontal roll of fabric, and the size of the keir is such that there is comparatively-little space around the rolls and at the ends, and in order to reduce as much as possible the capacity for fluid I provide in the lower part of

the keir two channels *p*, in which the truck-wheels run. Each truck has bearings for a mandrel *c*, on which the fabric is rolled before the trucks are introduced into the keir, the fabrics being preferably drawn through tanks, in which they are soaked. At the right end of the one mandrel and the left end of the other is a chamber *q*, each fronted by a perforated disk *e*. At the closed end of the keir is a spindle *r*, having on it a hand-wheel *s*, by which it can be turned, and a screw-sleeve *t*, by which it can be moved lengthwise, clutched in a sleeve *u*, which passes through a stuffing-box and has a clutching-flange made in segments engaging behind segments projecting inward in the end of the mandrel. At the other end of the keir, where the door is, there are corresponding parts; but the spindle instead of being carried on a fixed bracket has its bearings in a cross-bar *v*, which, the spindle being withdrawn, can be raised out of the way when the door is opened to allow the trucks to enter or leave the keir. At the side of the keir, about the middle of its length, is fixed a box which communicates with the circulating-pipe and has two tubes *x*, provided with lateral openings and having stems which pass through stuffing-boxes and can be turned by a suitable wrench or handle. When the trucks are in position in the keir, the tubes *x* are screwed into lateral holes in the chambers *q*, which are thus put in communication with the pump. The circulating-pipe also communicates with the body of the keir by two lateral inlets *y* near the ends of the keir, the branches leading to these preferably passing through a chamber adapted for heating or cooling. By turning the screws *t* the mandrels are advanced, pushing the ends of the rolls close up to the perforated disks *e*, with which the mandrels engage by clutches *z*, so that when the rolls are turned by turning the wheels *s* the disks *e* turn with them.

Having thus described the nature of this invention and the best means I know for carrying the same into practical effect, I claim—

For treating webs of fabric with liquids, vapors or gases, a closed chamber or keir adapted to receive trucks running on rails in the chamber, a pair of trucks each having bearings for a horizontal mandrel and an end chamber

covered by a perforated plate and having a lateral opening, means for turning the mandrels and moving them lengthwise, pipes communicating with the interior of the keir and
5 also with the end compartments of the trucks, substantially as described.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

W. MATHER.

Witnesses:

ALEXANDER F. PART,
JAMES FRANK HOLLAND.