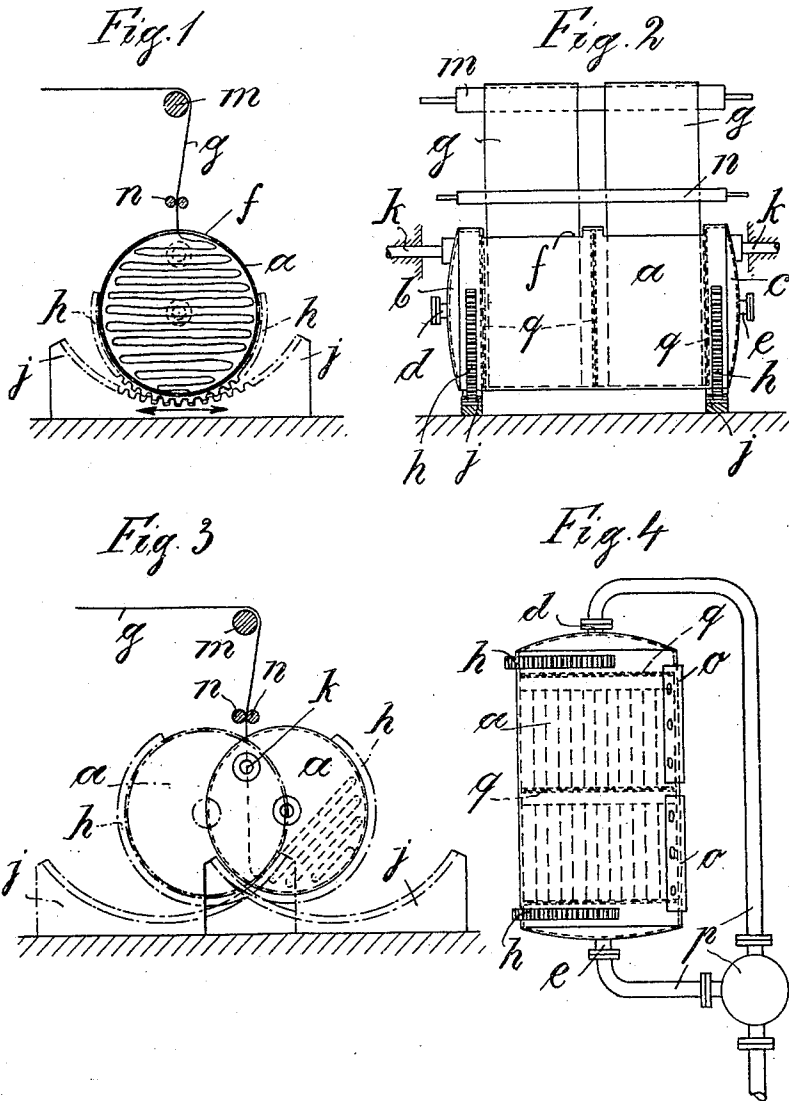


E. GMINDER.
 APPARATUS FOR TREATING FABRICS WITH FLUIDS.
 APPLICATION FILED MAR. 23, 1909.

943,632.

Patented Dec. 14, 1909.



Witnesses:

Arthur Scholz
 Emil Kayser

Inventor:
 Emil G. Minder
 by R. R. Schaeffer
 Attorney

UNITED STATES PATENT OFFICE.

EMIL GMINDER, OF REUTLINGEN, GERMANY.

APPARATUS FOR TREATING FABRICS WITH FLUIDS.

943,632.

Specification of Letters Patent.

Patented Dec. 14, 1909.

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To all whom it may concern:

Be it known that I, EMIL GMINDER, a subject of the King of Wurttemberg, and resident of 26 Wernerstrasse, Reutlingen, Kingdom of Wurttemberg, German Empire, have invented a new and Improved Apparatus for Treating Fabrics with Fluids, of which the following is a specification.

The present invention relates to an improved apparatus for use in treating fabrics with fluids while these fabrics are in the spread out state and is intended for use in the process described in the application of Emil Gminder, Serial No. 440191, filed June 24th, 1908, from which the present application has been divided.

According to this process the fabric is laid in substantially horizontal zigzag folds in a holder and this holder is subsequently placed so that the laid in material is substantially vertical. The treating fluid is then passed axially through the vessel containing the fabric and in this way an even and thorough penetration is insured.

The apparatus according to the present invention will be readily understood from the following description of the accompanying drawings, in which—

Figure 1 is an end sectional elevation diagrammatically illustrating the present invention, Fig. 2 is a view at right angles to Fig. 1, Fig. 3 illustrates diagrammatically the method of laying in the fabrics and Fig. 4 shows the apparatus in the position which it occupies when the treating fluid is being passed through the vessel.

The drawings are of a somewhat diagrammatic nature and only give a suitable construction of the present invention by way of example.

In carrying out the invention according to the form illustrated the holder is provided with curved side walls and is as shown preferably in the form of a cylinder *a*. This cylinder is closed at its ends by covers *b*, *c*, which are provided with an inlet and an outlet *d*, *e*, respectively. In the curved walls of the holder *a* there is provided an opening *f* which is broad enough to admit the breadth of fabric *g* which is to be filled into the holder *a*. On the circumference of the holder *a* near its opposite ends there are provided toothed segments *h*, the teeth in which engage with the teeth in the blocks *j*. The blocks *j* may be reciprocated in any con-

venient manner. The holder *a* is pivoted eccentrically about pivots *k* which are supported from any convenient frame work not illustrated.

The operation of this device is as follows:—The pivots *k* form an axis parallel to the curved side walls of the vessel *a*. When the blocks *j* are reciprocated the holder *a* is caused to oscillate about the pivots *k* and thereby is oscillated between the positions shown in Fig. 3. The fabric *g* to be treated is led over rollers *m* and between guide or pressing rollers *n* and by the oscillatory movement of the vessel the fabric is laid in zigzag folds, the bending ends of which lie against the curved walls of the holder. During laying in of the fabric the inlet and outlet *d*, *e*, are of course closed for instance by means of blind flanges as indicated or by any other suitable means. After laying in has been completed the opening *f* in the curved walls of the holder is closed by means of a cover *o*. The holder is then placed with its axis vertical in the position illustrated in Fig. 4 and the treating liquid is circulated axially through said holder by means of the circulating system *p* illustrated.

It may be advisable to lay in two breadths of fabric side by side as illustrated or any other plurality of breadths may be laid in. In the case of two breadths being laid in there are, of course, two openings *f* provided and two covers *o* for said openings. The holder is also divided into compartments by means of perforated plates *q*. In the position illustrated in Fig. 4 the two lengths of laid in fabric rest on these perforated plates with one of their long edges while the folds of the fabric bear against the side walls of the curved receptacle and thereby secure a very even resistance to the penetration of the treating fluid while at the same time insuring that the folding edges of the material are not subjected to the weight of superincumbent soaked material.

I claim:—

1. An apparatus of the kind described comprising a holder having curved walls and an opening in said curved walls, means for oscillating said holder about a substantially horizontal eccentric axis parallel with said curved walls, a cover for said opening and an inlet and outlet to said holder arranged at opposite ends of the same, substantially as described.

2. An apparatus of the kind described for use in treating spread out fabrics comprising a cylindrical shell having an opening therein in the curved walls for the admission of the
5 spread out fabric, a pivot eccentrically arranged with regard to the axis of said vessel and about which the vessel may be oscillated, means for oscillating said vessel about said eccentric pivot and a cover for
10 closing said opening in the curved walls, substantially as described.

3. An apparatus of the kind described for use in treating spread out fabrics comprising a cylindrical shell having openings
15 therein for the admission of the spread out fabric, a substantially horizontal pivot ar-

ranged eccentrically to said cylinder and about which said cylinder may oscillate, perforated cross division walls dividing said vessel into compartments into each of which
20 an opening in the curved side walls opens, means for oscillating said vessel about its pivot, an inlet and outlet at opposite ends of said cylindrical vessel and covers for said
25 openings in the side walls.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

EMIL GMINDER.

Witnesses:

P. S. H. ALEXANDER,
TH. HERPICH.