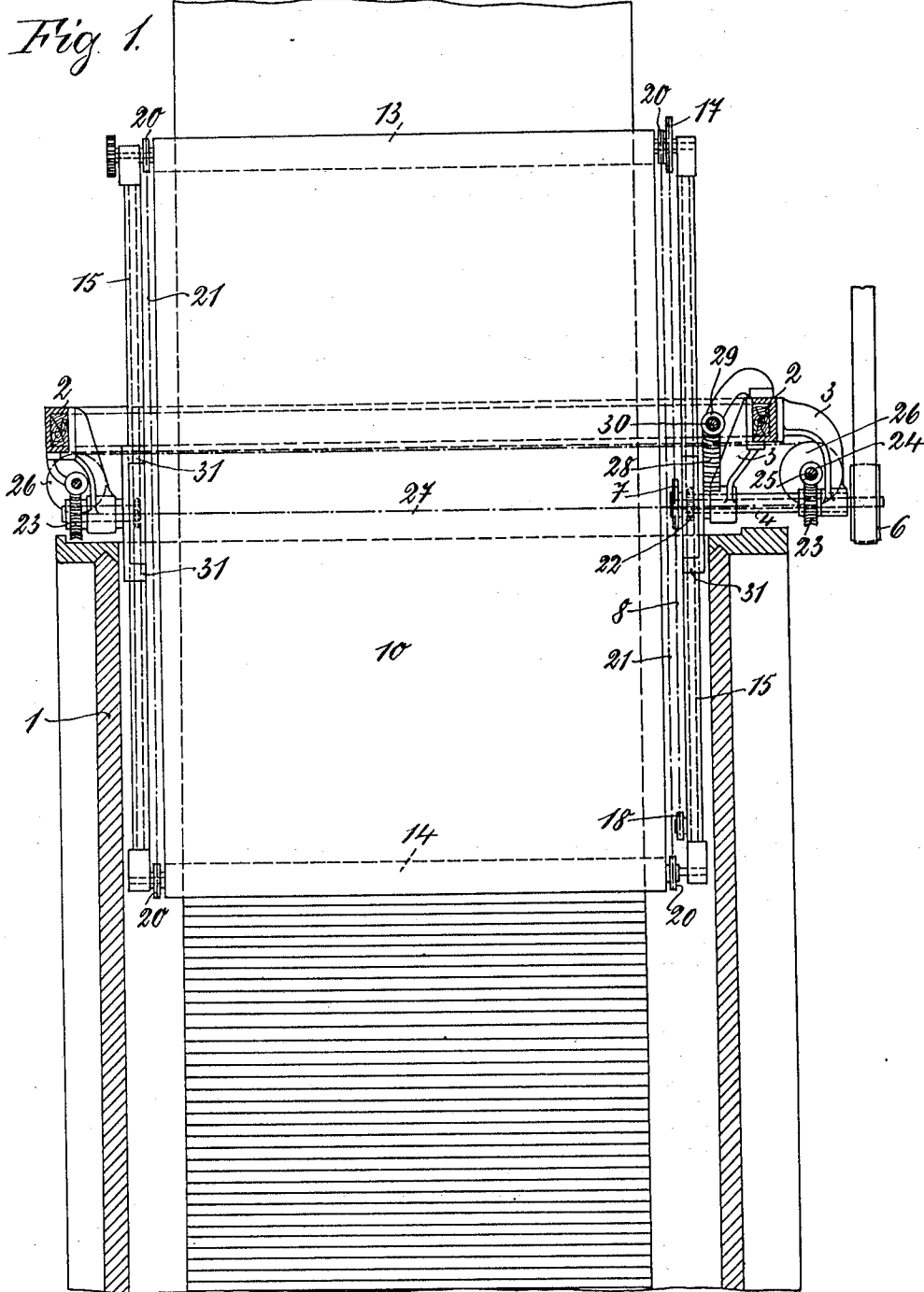


E. GMINDER.
 APPARATUS FOR FEEDING FABRICS TO RECEPTACLES.
 APPLICATION FILED DEC. 13, 1910.

1,053,490.

Patented Feb. 18, 1913.

3 SHEETS—SHEET 1.



Witnesses:
 Corinne Myers
 Vera Paulson

Inventor
 Emil Gminder
 by *E. K. Böhm*,
 Attorney

E. GMINDER.
 APPARATUS FOR FEEDING FABRICS TO RECEPTACLES.
 APPLICATION FILED DEC. 13, 1910.

1,053,490.

Patented Feb. 18, 1913.

3 SHEETS—SHEET 2.

Fig. 2.

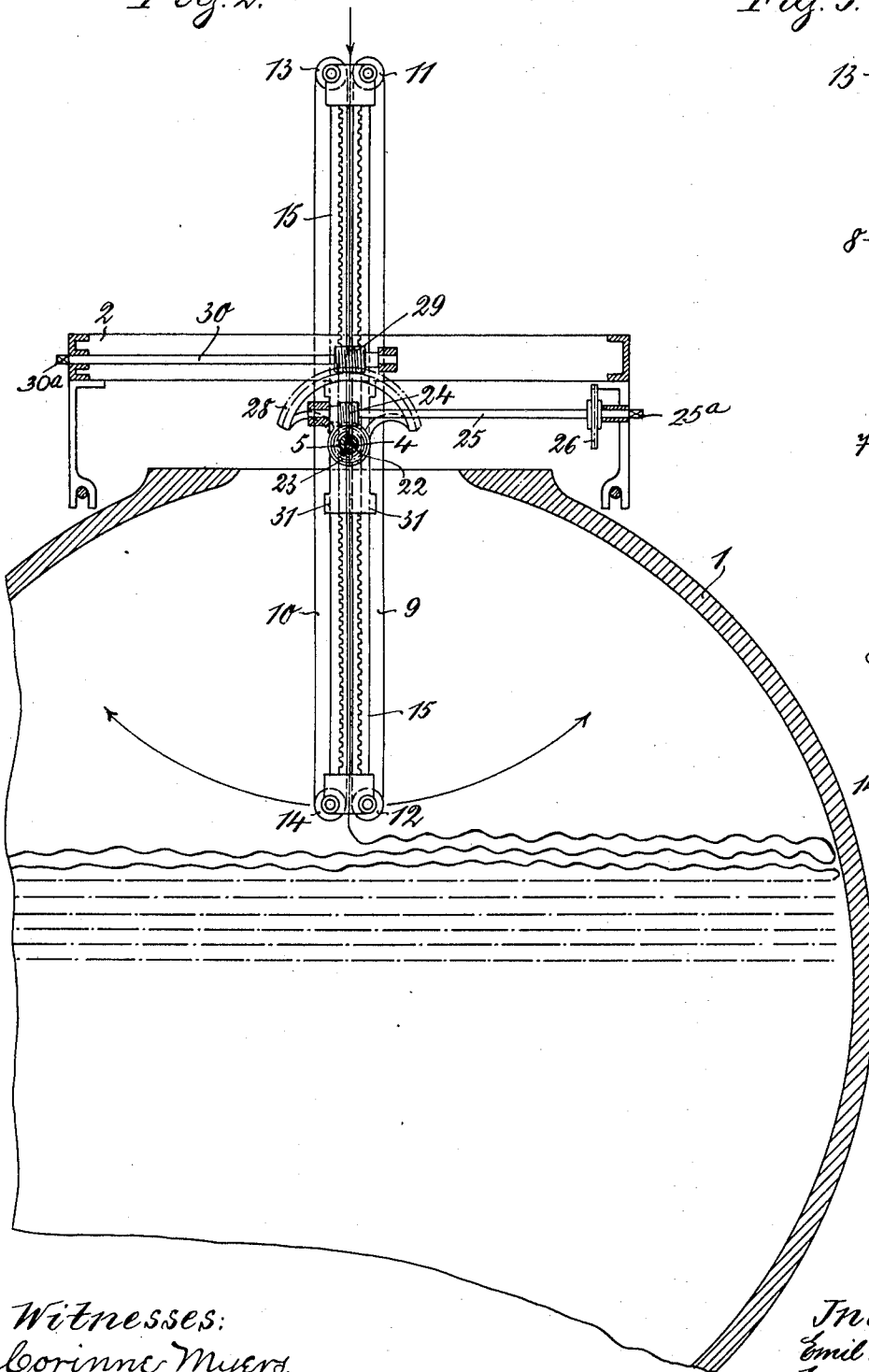
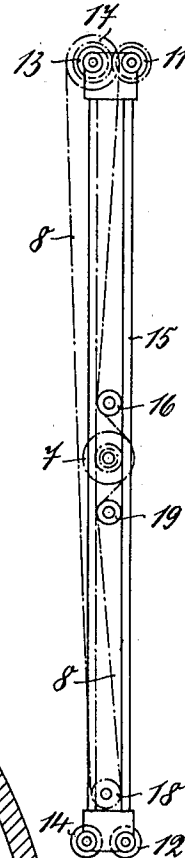


Fig. 3.



Witnesses:
 Corinne Myers.
 Vera Paulsen.

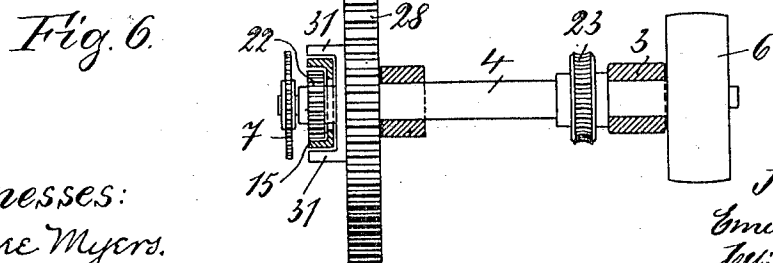
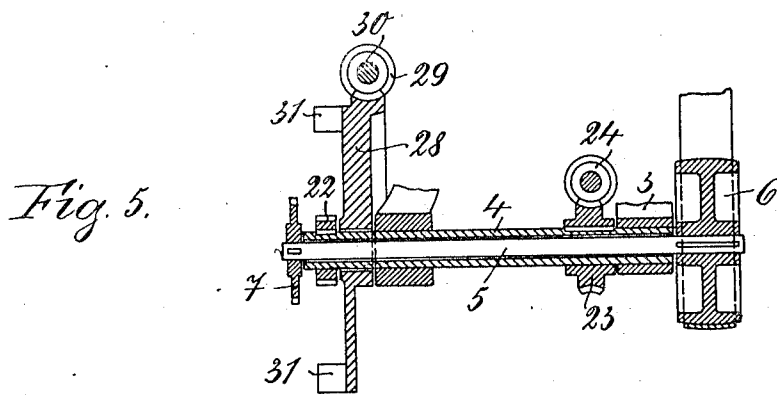
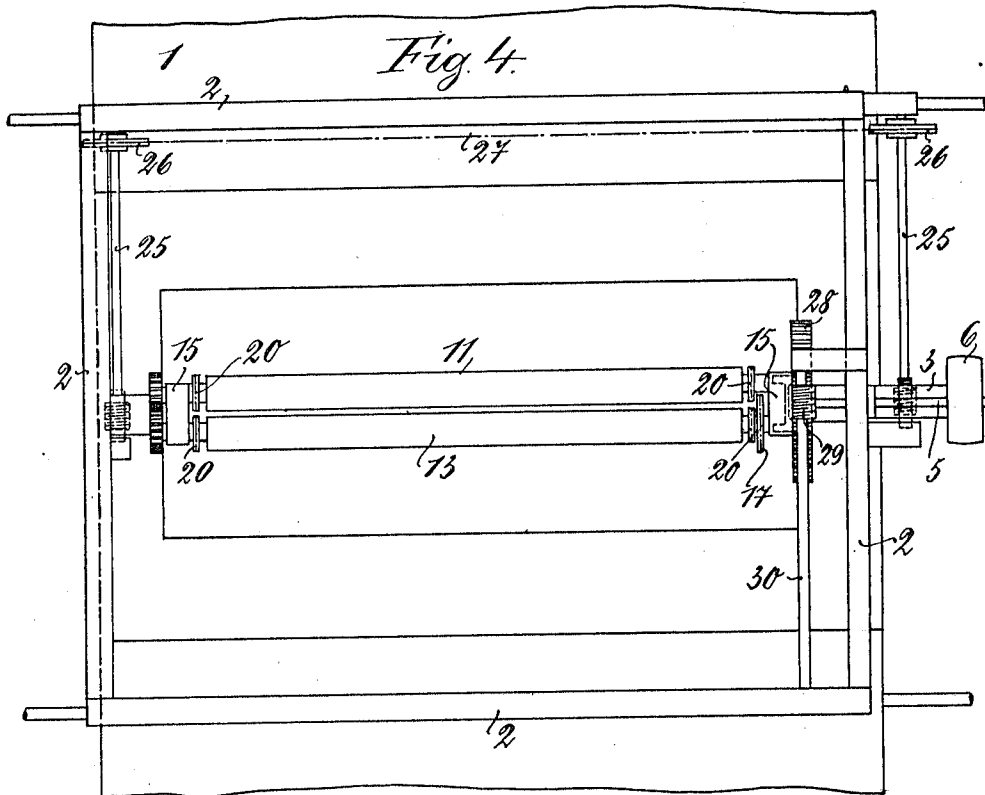
Inventor
 Emil Gminder.
 By L. K. Böhm,
 Attorney.

E. GMINDER.
 APPARATUS FOR FEEDING FABRICS TO RECEPTACLES.
 APPLICATION FILED DEC. 13, 1910.

1,053,490.

Patented Feb. 18, 1913.

3 SHEETS—SHEET 3.



Witnesses:
 Corinne Myers.
 Vera Paulsen.

Inventor
 Emil Gminder
 by L. K. Böhm,
 Attorney.

UNITED STATES PATENT OFFICE.

EMIL GMINDER, OF REUTLINGEN, GERMANY.

APPARATUS FOR FEEDING FABRICS TO RECEPTACLES.

1,053,490.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed December 13, 1910. Serial No. 597,115.

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, in the Kingdom of Wurttemberg, German Empire, have invented certain new and useful Apparatus for Feeding Fabrics to Receptacles, of which the following is a specification.

This invention relates to an apparatus for feeding fabric either in broad lengths or other form to a drum through an inlet opening parallel with the axis of the drum. The object of feeding the material is for the purpose of thereafter treating the fabric with liquid in the drum in the usual manner.

According to this invention the fabric is passed into the drum by a to and fro movement which must be varied according to the width of the drum at the point where the last layer has been laid and the delivery means must be capable of being raised as the drum is gradually filled.

In delivering the fabric so as to obtain undulating folds in the drum, it is necessary that the speed at which the delivering means is driven should be somewhat greater than that of the to and fro movement of the delivering device. By this means the fabric lies transversely in the drum not perfectly straight but in undulating form so as to provide intermediate spaces between the folds.

The drum is provided with an inwardly projecting delivering device which swings upon a pivot either above the periphery or on the periphery of the drum or the pivot may be arranged somewhat within the periphery of the drum. The delivery device is gradually drawn out of the drum during its swinging movement and the swinging movement may be varied according to the transverse length over which the lower end of the delivery device is capable of moving within the drum. After the drum has been filled the delivery device may be removed and the drum closed, after which the fabric may be treated in the usual manner, and for this purpose the delivery device is preferably carried by a removable frame arranged on the drum.

In order that the delivery device may swing from one side of the drum to the other it is necessary that its axis be directly over the opening of the drum and for delivering the fabric the delivery device is preferably provided with a pair of endless traveling bands. These bands prevent the fabric

from being given out too quickly so that the material is delivered in an almost horizontal position. The delivery bands are driven by suitable gearing which is so arranged that it is independent of the rising movement of the delivery device.

In order that the invention may be more clearly understood, reference is made to the accompanying drawings in which I have shown by way of example the preferred method of carrying out the invention.

In the drawings: Figure 1 shows the apparatus in axial section, Fig. 2 is a cross section of same, Fig. 3 is a detail view showing the driving means for the delivery device. Fig. 4 is a plan view of Figs. 1 and 2. Fig. 5 is a detail vertical section of the driving gear in enlarged view, and Fig. 6 is a plan view of Fig. 5.

On the drum 1 which is to be filled with fabric, to be laid therein in folds, is a frame 2 which may be readily removed when required. This frame 2 carries in bearings 3 an outer hollow spindle 4 through which passes an inner spindle 5; the spindle 5 is driven by means of a pulley 6 and carries at the opposite end a chain wheel 7 engaging with one side of an endless driving chain 8 which drives the endless bands 9 and 10, the latter traveling around rollers 11, 12, 13 and 14 respectively, which are carried by a frame 15.

As shown in Fig. 3 the driving chain 8 passes from the driving wheel 7 over a tension roller 16 and then over chain wheels 17 and 18 and over a second tension roller 19. By this means it is possible to raise or lower the frame 15 with the rollers 11, 12, 13, 14 and the endless bands 9 and 10 without in any way affecting the drive, the wheel 7 remaining in its original position. The axle of the roller 13 carries a toothed wheel engaging with a toothed wheel on the axle of the roller 11, so that the bands 9 and 10 are simultaneously traversed. All the rollers carry chain wheels 20, see Fig. 1, over which run chains 21 and to these chains 21 are connected the delivery bands 9 and 10, preferably by sewing thereto, so that the bands 9 and 10 are driven simultaneously from the wheel 7. The hollow spindle 4 carries a spur wheel 22 which engages with a rack on the frame 15 (see Fig. 6). By rotating the spindle 4 in one direction or the other the frame 15 may therefore be raised or lowered within the drum 1. The driv-

ing mechanism is duplicated, that is, it is arranged on both sides of the frame, and each spindle 4 carries a worm wheel 23 with which engages a worm 24 carried by a spindle 25 having at one end a chain wheel 26, and over the two chain wheels 26 passes a chain 27, so that the spindles 25 operate simultaneously and thereby insure the frame 15 being raised or lowered at both sides equally. The spindles 25 may be rotated by hand so as to raise or lower the frame 15 by means of a crank handle which may be fitted on the squared end 25^a of one or other of the spindles 25. The frame 15 carries a toothed sector 28 by means of which a swinging motion is imparted to the frame, this sector 28 being capable of oscillating on the hollow spindle 4 and being driven by means of a worm wheel 29 on the spindle 30, the spindle being oscillated by hand by means of a crank handle which may be fitted on the squared end 30^a of the spindle 30. The sector 28 is provided with claws 31 which grasp the frame 15 on both sides so that when the sector 28 is oscillated, the frame 15 is moved therewith, but at the same time the arrangement permits of the raising and lowering of the frame, independent of the sector 28.

30 The operation of the apparatus is as follows: At the commencement of the filling operation the delivery device is in its lowest position so that by its to and fro movement the fabric is delivered in folds in the lower part of the drum, the oscillation of the delivery device being effected by hand by oscillation of the spindle 30. At the same time the chain 8 is driven through the pulley 6, spindle 5 and chain wheel 7, so that the delivering bands 9 and 10 are caused to travel and thereby deliver the fabric to the drum. The oscillation of the spindle 30 is so regulated by the operator that the rate of movement of the lower end of the delivery device is less than that of the speed of the delivery bands 9 and 10, so that at each oscillation of the delivery device a greater length of fabric is delivered than the length of the path over which the delivery device moves, so that the fabric is delivered in undulating folds, as shown at Fig. 2. As the drum is gradually filled with fabric, the frame 15 is gradually withdrawn from the boiler by the operator by the means already described and at the same time the swinging movement of the frame may be varied by the operator according to the distance from side to side of the drum within which the lower end of the delivery device may move. In this manner the drum can be entirely filled and the frame 2 and delivery device thereafter removed, whereupon the drum may be closed and the fabric is then ready for further treatment in the drum. Instead of giving a circular swinging movement to the de-

livery device, as hereinbefore described, it is also possible to cause the lower end of the delivery device to move over a straight path by correspondingly oscillating the spindles 25 during the swinging movement of the delivery device so as to cause the delivery device to be lowered into the drum as it moves from the center to the sides and to be raised during its return movement to the center of the drum. Should it be desired, the delivery device may be caused to take a convex path according to requirements by correspondingly raising or lowering the delivery device by oscillation of the spindles 25. The arrangement also enables the fabric to be arranged within the drum in any desired manner.

I claim:—

1. A device for laying fabric in folds in a cylindrical vessel having a narrow inlet opening parallel to its axis, comprising a delivery device for the fabric projecting through said opening into said vessel, a shaft mounted in a position over said opening substantially coincident with the periphery of said vessel, and means for swinging said delivery device about said shaft, said delivery device being adjustable vertically relatively to said shaft, so as to enable it to be raised vertically and withdrawn from said vessel, while its point of oscillation remains located centrally over the fabric previously laid in folds in said vessel.

2. A device for laying fabric in folds in a cylindrical vessel having an inlet opening parallel to its axis, comprising a removable frame supported on the vessel, a delivery device for the fabric projecting through said opening into said vessel, shafts at each side of said delivery device, bearings on said frame for said shafts, vertical rack bars at each side of said delivery device, pinions on said shafts engaging said rack bars so as to rotatably support said delivery device and to raise or lower it on rotating said shafts while its point of oscillation remains located centrally over the fabric previously laid in folds in the vessel and mechanism for imparting a swinging movement to the delivery device about said shafts.

3. A device for laying fabric in folds in a cylindrical vessel having an inlet opening parallel to its axis, comprising a removable frame supported on the vessel, a delivery device for the fabric projecting through said opening into said vessel, shafts at each side of and rotatably supporting the delivery device, bearings on said frame for said shafts, mechanism for moving said delivery device longitudinally relatively to said shafts so as to raise it vertically and withdraw it from the vessel while its point of oscillation remains located centrally over the fabric previously laid in folds in the vessel, a toothed

sector rotatably mounted on each of said shafts and having projections embracing said delivery device, and gearing for oscillating said sector so as to impart a swinging movement to the delivery device about said shafts.

4. A device for laying fabric in undulating folds in a cylindrical vessel having an inlet opening parallel to its axis, comprising a delivery device for the fabric projecting through said opening into said vessel, a pair of endless traveling bands carried by said delivery device and adapted to take the fabric between them and feed it into said vessel, a shaft about which the delivery device is capable of swinging, means for swinging said delivery device about said shaft, said delivery device being adjustable vertically relatively to said shaft so as to enable it to be raised vertically and withdrawn from said vessel while its point of oscillation remains located centrally over the fabric previously laid in folds in said vessel, and mechanism for traversing said bands at a greater speed than the speed of the swinging movement of the lower end of said delivery device.

5. A device for laying fabric in folds, in a cylindrical vessel having an inlet opening parallel to its axis, comprising a delivery

device for the fabric projecting through said opening into said vessel, rollers carried by said delivery device, a pair of endless traveling bands around said rollers and adapted to take the fabric between them and feed it into said vessel, a shaft about which the delivery device is capable of swinging, means for swinging said delivery device about said shaft, said delivery device being adjustable vertically relatively to said shaft so as to enable it to be raised vertically and withdrawn from said vessel, while its point of oscillation remains located centrally over the fabric previously laid in folds in said vessel, and mechanism for traversing said bands while permitting the vertical and swinging movement of said delivery device comprising a chain wheel on one of said rollers, tension wheels carried by the delivery device, a chain passing around said chain wheel and tension wheels, a driving chain wheel engaging only one side of said chain, and means for rotating said driving chain wheel.

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

EMIL GMINDER.

Witnesses:

FRIDA KLAIBER,
ERNEST ENTENMANN.