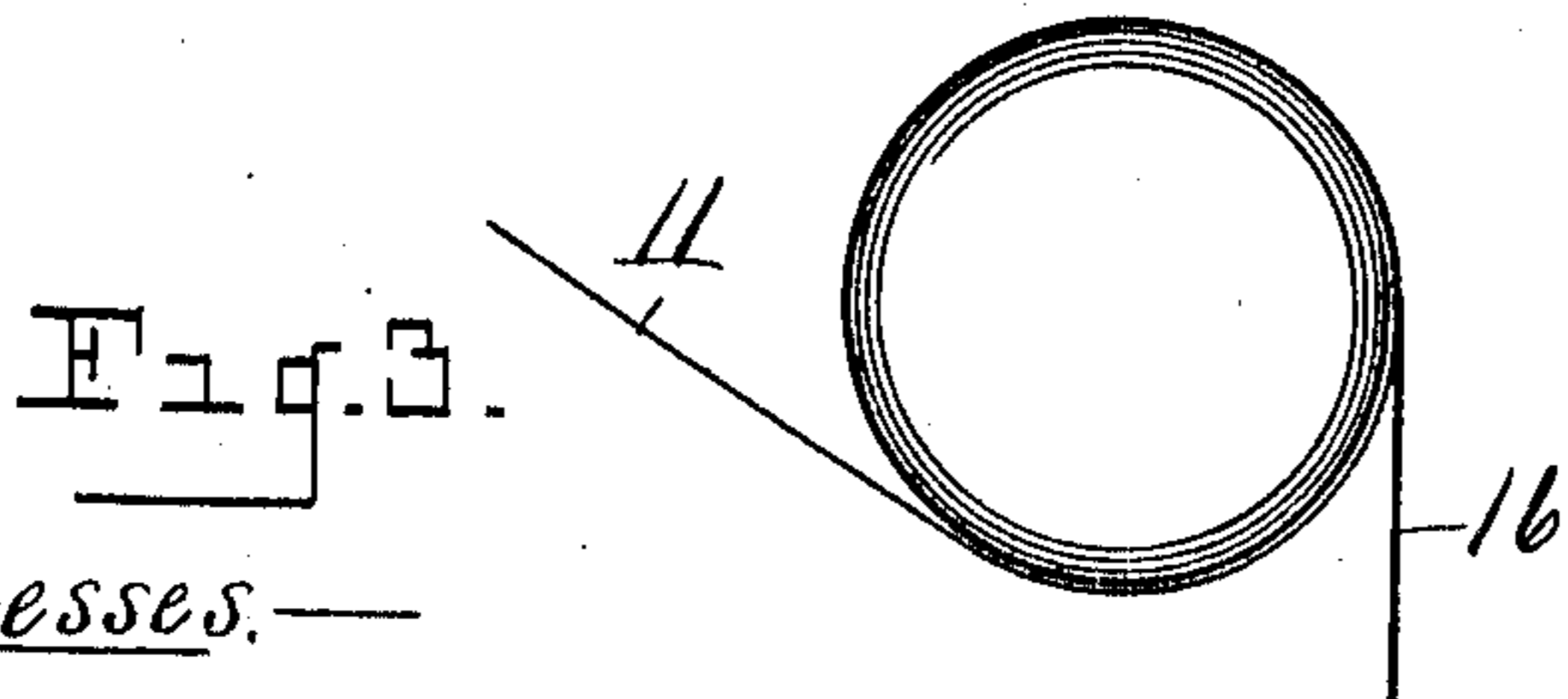
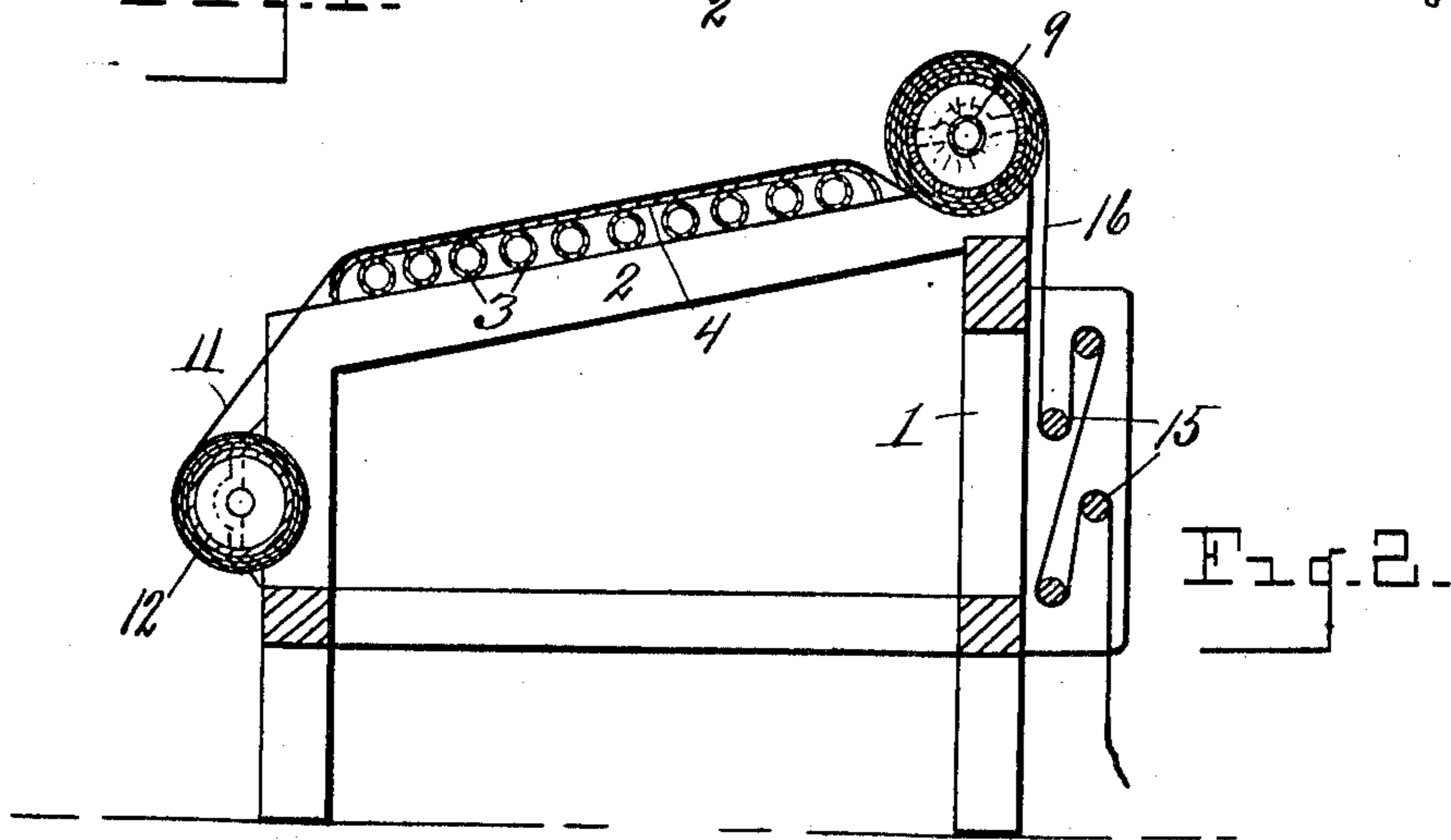
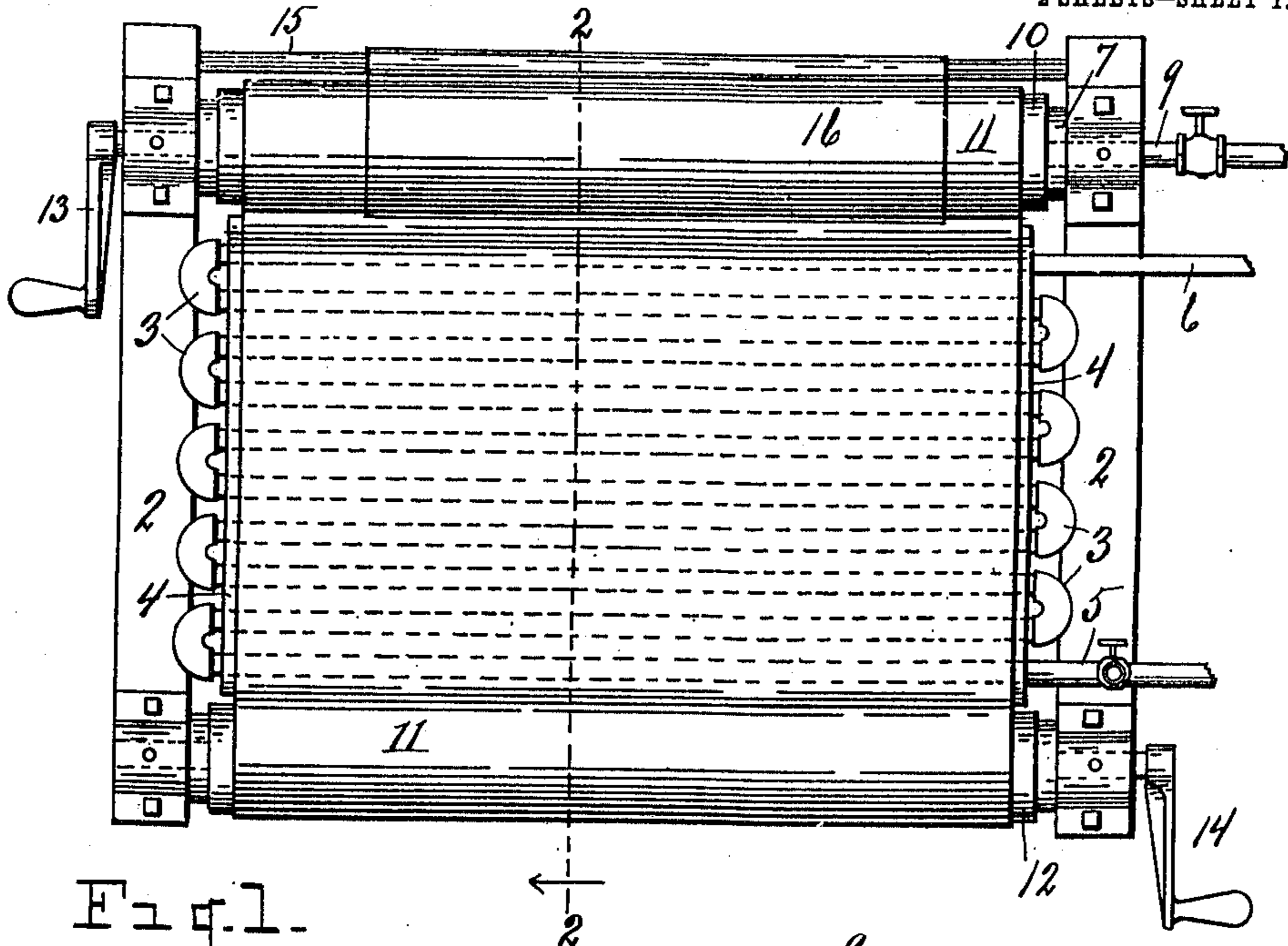


G. HATT.
CLOTH SPONGING AND REFINISHING MACHINE.
APPLICATION FILED FEB. 12, 1906.

969,864.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



—Witnesses—
O. B. Baenziger,
J. G. Howlett.

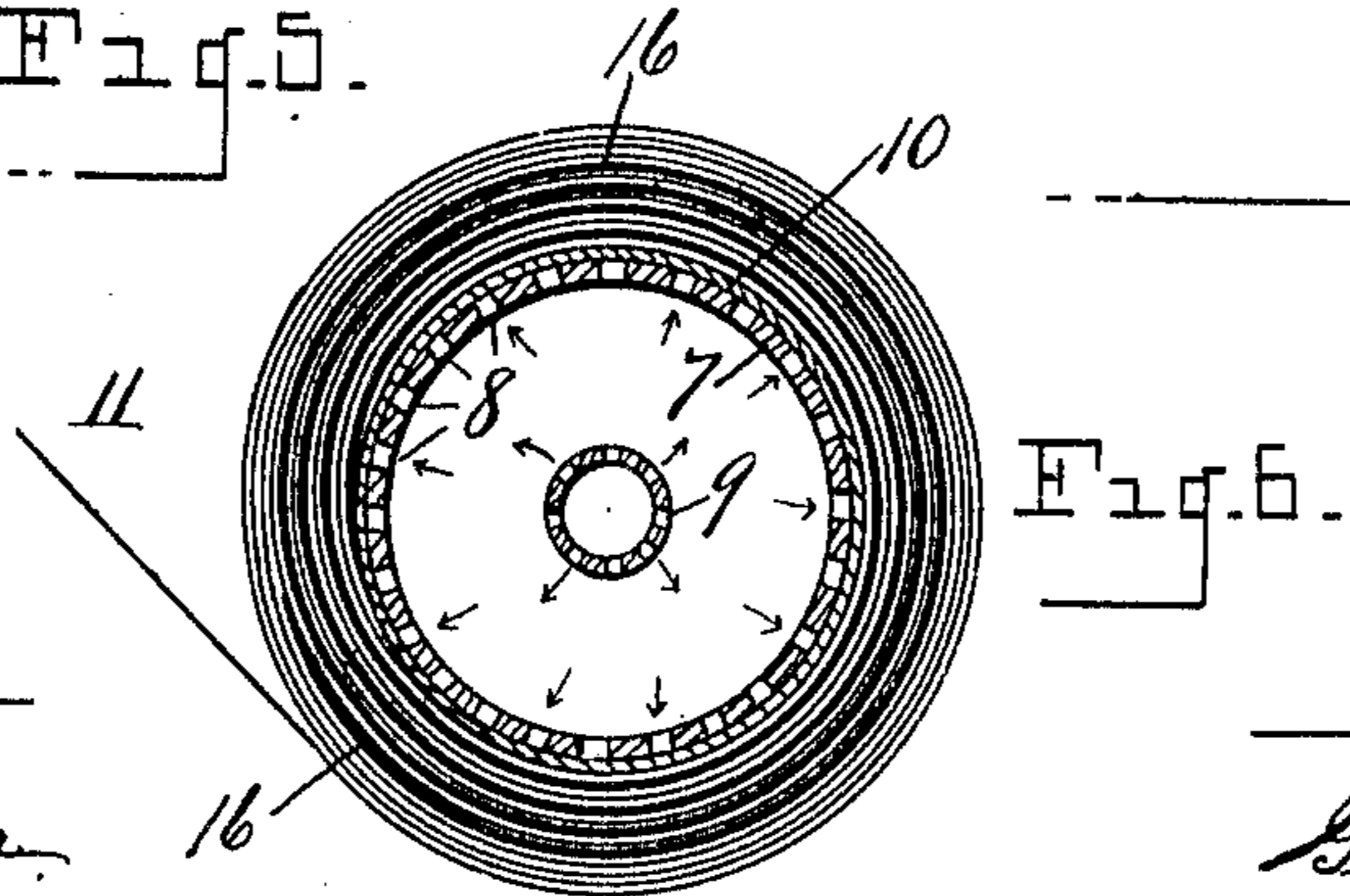
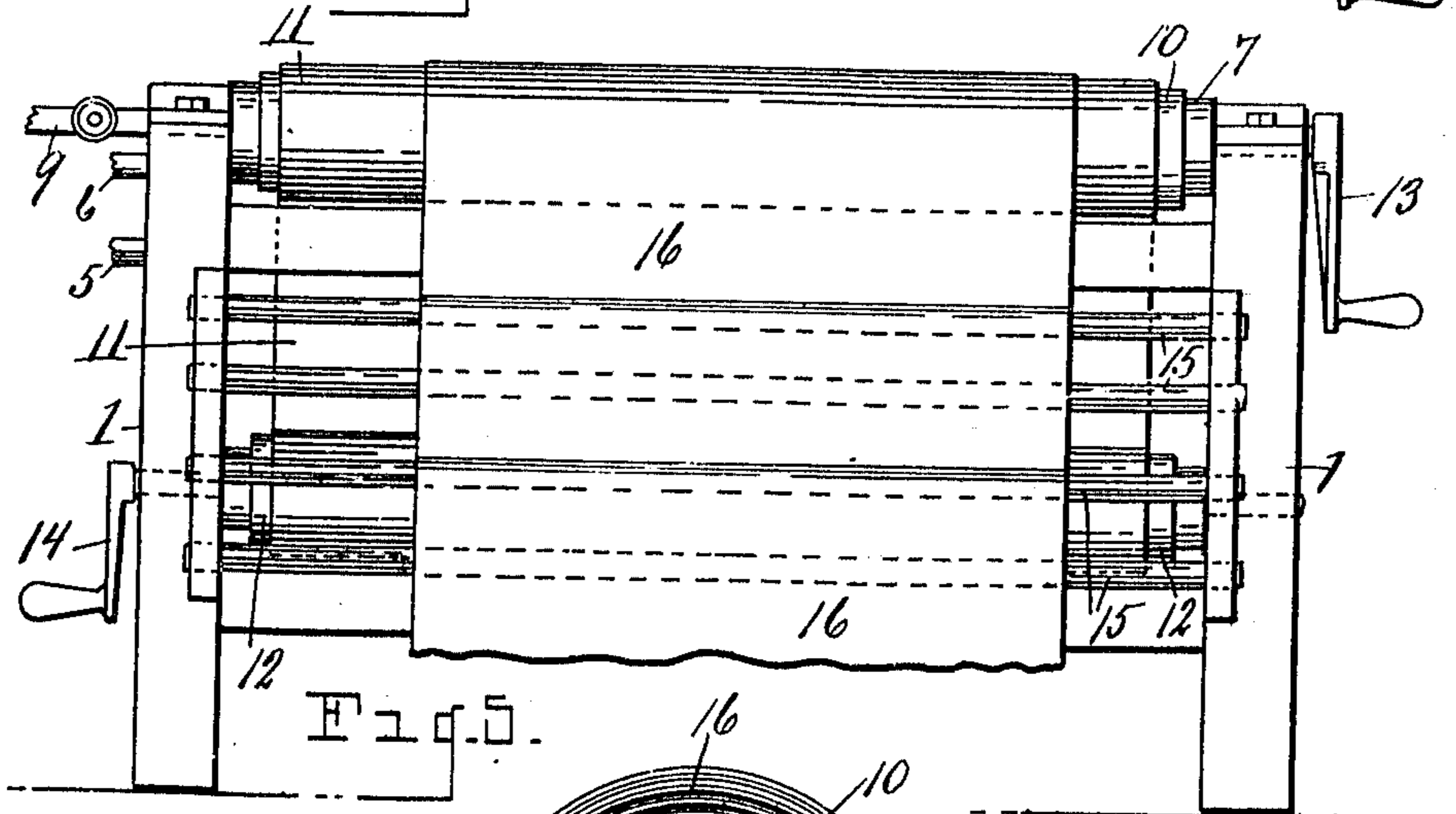
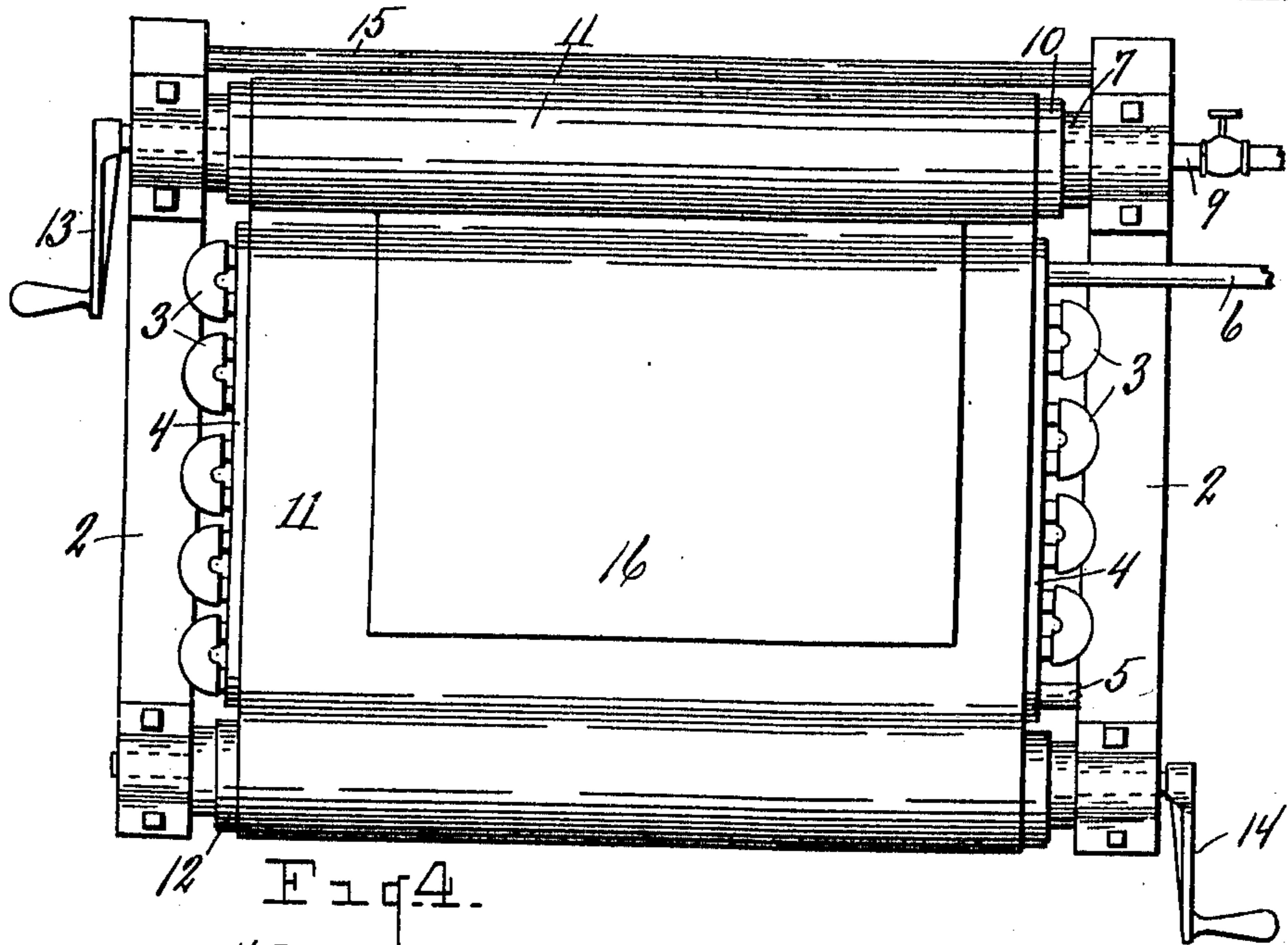
—Inventor—
George Hatt.
By E. M. Wheeler & Co. Attys.

G. HATT.
CLOTH SPONGING AND REFINISHING MACHINE.
APPLICATION FILED FEB. 12, 1908.

969,864.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 2.



—Witnesses—
O. B. Baerziger
J. G. Howlett.

—Inventor—
George Hatt.
By T. A. Wheeler & Co. attys.

UNITED STATES PATENT OFFICE.

GEORGE HATT, OF DETROIT, MICHIGAN.

CLOTH SPONGING AND REFINISHING MACHINE.

969,864.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 12, 1906. Serial No. 300,603.

To all whom it may concern:

Be it known that I, GEORGE HATT, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Cloth Sponging and Refinishing Machines; and I do 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 the figures of reference marked thereon, which form a part of this specification.

This invention relates to a cloth sponging and re-finishing machine, especially designed for the handling or treatment of delicate fabrics, and consists in the construction and arrangement of parts hereinafter fully set forth and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for sponging, shrinking and re-finishing all characters of fabrics in a manner to prevent discoloration or soiling, to prevent wrinkling or puckering of the goods, and to enable the cloth to be shrunk to any desired extent, while re-finishing it to remove creases and stock wrinkles, and properly restore the nap on the surface of the fabric.

The above object is attained by the structure illustrated in the accompanying drawing, in which:—

Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a transverse section as on line 2—2 of Fig. 1. Fig. 3 is a diagrammatical view, showing the cloth being treated as it is rolled between the layers of the fabric apron, between which the cloth is confined while being treated. Fig. 4 is a view similar to Fig. 1, showing the cloth or fabric after being treated, as it is carried from the steam cylinder on the apron over the surface of the drier. Fig. 5 is a rear elevation of the machine, showing the fabric passing from the tension bars onto the cylinder. Fig. 6 is an enlarged transverse section through the steam cylinder, showing the fabric being treated, wound between the layers of the apron upon said cylinder.

Referring to the characters of reference, 1 designates a suitable frame, having the inclined top 2, across which extend the steam-pipe coils 3, and which are covered by a

suitable plate 4 forming a heating or drying table. The valve-controlled steam pipe 5 communicates with said coils, and leading therefrom is a suitable discharge pipe 6. Crossing the top of the frame and suitably journaled therein above the drying table, is a steam cylinder 7 having perforations 8 in the wall thereof, and having a valve-controlled steam pipe 9 communicating with one end, which steam pipe within the cylinder is perforated, as clearly shown in Fig. 6. Surrounding the exterior of said steam cylinder is a pad 10, preferably of fabric material, and attached to said pad in any suitable manner is one end of a strong, though flexible, apron 11, adapted to be rolled onto said cylinder, the other end of said apron being rolled upon a drum 12, suitably journaled at the front of the machine below the top thereof. The relative position of the drum and steam cylinder is such that the intervening portion of the apron extending between them lies upon the surface of the heating table 4. In order to cause the apron to draw across the drying table, it is rolled onto the under side of the cylinder 7. Mounted upon the shaft of the cylinder at one end is a crank 13 through the medium of which the cylinder is rotated. In like manner the drum 12 is rotated by a crank 14 mounted upon one end of the shaft thereof.

At the rear of the machine and crossing between the sides of the frame are the tension bars 15 between which the fabric being treated is rove to apply the proper tension thereto when passing onto the cylinder.

In the operation of this device the apron is caused, by a rotation of the cylinder, to wind thereon and the fabric 16 to be treated, is passed around the tension bars and its initial end is caused to lie upon the surface of the apron upon the cylinder, when, by a further rotation of the cylinder the fabric is caused to wind thereon between the layers of the apron. As the fabric is being wound onto the cylinder steam is allowed to enter it and to pass through the pad and layers of the apron, and through the fabric. The presence of the apron between which the fabric is rolled, prevents the fabric puckering and wrinkling and holds it in proper position to receive the action of the steam thereon, while the pressure which is applied to the fabric by the layers of the apron holds it in place after being wound onto the cylinder, so that additional steam may

be applied without danger of shrinking the fabric more than is desired. In instances where it is necessary to shrink the fabric to a certain extent, the shrinking is accomplished by passing the steam from the cylinder through the fabric as it is rolling thereon, the cylinder being rotated slowly to allow the steam to act upon the fabric before it is wound between the layers of the apron. This operation being made possible because of the fact that the cloth or fabric winds onto the upper arc of the cylinder while the apron winds onto the lower arc thereof. As the cylinder is rotated to wind the apron thereon, the drum 12 revolves to permit the apron to pay off as rapidly as it is taken up by the cylinder.

When it is desired to remove a piece of fabric that has been wound upon the cylinder between the layers of the apron 11, the drum 12, by means of the crank 14, is rotated to wind the apron thereon, said drum being turned slowly so as to cause the apron to pass slowly over the heating table 4, whereby said apron is dried of the moisture which may have been imparted thereto by means of the condensation of the steam. As the apron rolls from the cylinder, the piece of fabric which has been treated, is carried outwardly thereon, as shown in Fig. 4, the heat of the drying table evaporating the steam or moisture therefrom as it is carried slowly over the table on the apron, thereby raising the nap upon the fabric and giving it the required finish, at the same time drying it so as to complete the process of re-finishing.

The drying table not only performs the functions before described, but as well serves to heat the apron as it rolls onto the cylinder, preventing the presence of a cold apron chilling the steam and causing an undue condensation thereof.

By means of this machine fabrics of the most delicate texture may be successfully

treated without danger of injury thereto and in a manner to freshen and increase their attractiveness.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a machine for the purpose set forth, the combination of a rotary steam cylinder, a rotary drum, a flexible apron wound at its opposite ends upon the drum and upon the cylinder and adapted to pass from one to the other in reciprocal succession, means for directing a piece of fabric under tension onto the cylinder remote from or opposite the point at which the apron rolls thereon to expose the fabric to the action of the steam before being compressed by said apron, and means for heating the apron before it passes onto the roller.

2. In a machine for the purpose set forth, the combination of the rotary steam cylinder, a rotary drum, the apron wound at its opposite ends upon the drum and upon the cylinder and adapted to pass from one to the other in reciprocal succession, said apron being maintained in a dry state while on the drum, a heating table interposed between the drum and cylinder and having a flat surface over which the apron passes, tension bars for directing a piece of fabric onto the periphery of the cylinder at a point on its periphery remote from the point where the apron rolls thereon, to subject the fabric to the action of the steam before entering between the layers of said apron, means for introducing steam to the cylinder, and means for rotating the cylinder and drum.

In testimony whereof, I sign this specification in the presence of two witnesses.

GEORGE HATT.

Witnesses:

E. S. WHEELER,
I. G. HOWLETT.