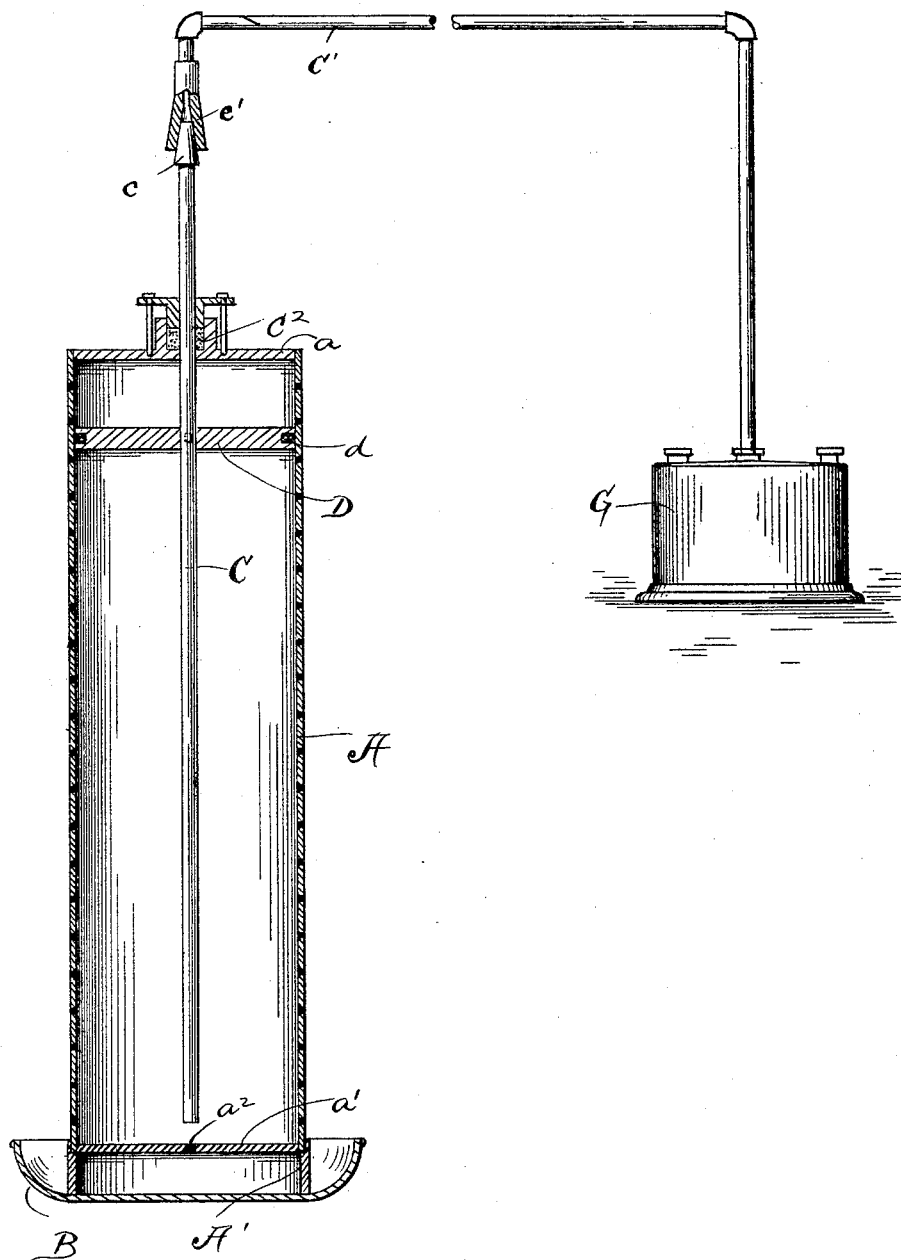


(No Model.)

C. W. SCHAEFER,
CLOTH SHRINKING MACHINE.

No. 459,021.

Patented Sept. 8, 1891.



Witnesses.
E. Byron Gilchrist
[Signature]

Inventor.
Charles W. Schaefer
[Signature]
attorneys

UNITED STATES PATENT OFFICE.

CHARLES W. SCHAEFER, OF CLEVELAND, OHIO.

CLOTH-SHRINKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,021, dated September 8, 1891.

Application filed June 17, 1891. Serial No. 396,589. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SCHAEFER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Cloth-Shrinking Machines; 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 pertains to make and use the same:

My invention relates to improvements in apparatus for steaming cloth; and it consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

The accompanying drawing presents an elevation in central section of a device embodying my invention.

A represents an upright hollow cylinder closed at the ends by means of heads *a a'*. The cylinder between the heads has numerous small perforations to allow the steam to escape from the cylinder into the cloth that is supposed to be wound around the cylinder. The lower head *a'* has a drip-hole *a²* for the escape of condensed steam, and the cylinder has a depending rim *A'* at the bottom, that the cylinder stands on. This rim sets in a vessel B, and as soon as a little condensed steam passes beneath the rim *AA'* and accumulates in the vessel a water seal is formed around the lower edge of the rim of the cylinder, that prevents the escape of steam at this point.

C is a steam-pipe that enters the cylinder from above through a central hole in head *a*, a stuffing-box being provided, as at *C²*. This pipe C is supposed normally to extend to near the bottom of the cylinder, from whence the steam on entering the cylinder rises and fills the cylinder, and from thence passes out through the perforations of the cylinder into the cloth. The cylinder is supposed to be long enough to accommodate the widest cloth to be steamed—that is to say, the narrow or single goods are wound singly on the cylinder, while the wide or double-width goods are wound double on the cylinder, so that usually there will be but a few inches in width variation in the different kinds of goods as applied to the cylinder. In case the cloth is narrow, if wound next to the bottom of the cylinder the perforations would not be covered

by the cloth near the upper end of the cylinder, in which case the steam would mostly escape through these unobstructed perforations, so that but little steam would enter the cloth. To prevent this I provide a disk D, mounted on and rigidly secured to pipe C inside the cylinder. The periphery of the disk is provided with a groove and packing, as at *d*, so as to make a steam-tight joint with the inside of the cylinder. The packing of the disk and of the stuffing-box causes sufficient friction to hold the pipe and disk in place without other fastening; but these members can be moved up and down the cylinder by hand. If the cloth is wide enough to cover the entire perforated section of the cylinder, the disk by means of the pipe is drawn up against the upper cylinder-head. On the other hand, if the cloth is narrow it is wound on the cylinder, so as to cover the perforations at the bottom of the cylinder, and then the disk is depressed by means of the pipe, so as to confine the steam to that portion of the cylinder that is covered by the cloth.

G is a steam-generator, that may set, for instance, on a stove or over a gas jet or burner, and from this generator leads a small steam-pipe *C'*, connecting with the upright pipe C aforesaid. Only a slight pressure of steam is required, and dry or superheated steam is not desirable for the purpose, but, on the contrary, the wetter the steam is on entering the cylinder the better, and pipe *C'* is preferably of considerable length, in which case this pipe will readily bend to accommodate the limited movement up and down of pipe C. If for want of room pipe *C'* was necessarily short, an elastic tube could be substituted for a metal pipe, or a joint could be had in the metal pipe. When the steam is discharged into the top of the cylinder, the most of the steam will escape at or near the top end of the cylinder, and hence the lower portion of the cloth will receive little or no steam, especially as the supply of steam is likely to be quite limited. With the construction shown, while the steam discharges near the bottom of the cylinder, the tendency of the steam being to rise, the cylinder becomes filled with steam, and the discharge through the perforations is more nearly equal throughout the length of the cylinder, by rea-

son of which the cloth is treated substantially the same throughout its width.

The union between pipes C and C' comprises, preferably, a female member *c'*, having a conical bore adapted to fit the corresponding conical male member *c*, the latter being secured to pipe C, whereby pipe C' may be raised by hand to separate the pipes, so that the cylinder can be disconnected for convenience of winding the cloth thereon, it being found more convenient to roll the cloth on the cylinder by rolling the latter on the table. The friction, as between members *c* *c'*, is sufficient to hold the parts in contact as against the slight pressure of steam employed, and of course the gravity of pipe C' also aids in holding the parts together.

What I claim is—

1. In cloth-steaming apparatus, an upright hollow perforated cylinder closed top and bottom and provided with an induction steam-pipe discharging downward into the cylinder near the bottom of the latter, substantially as set forth.

2. In cloth-steaming apparatus, an upright hollow perforated cylinder having an induction steam-pipe discharging downward into the cylinder near the bottom thereof, a disk

mounted on the steam-pipe inside the cylinder, the disk and pipe being adjustable lengthwise of the cylinder, substantially as set forth.

3. In cloth-steaming apparatus, an upright hollow perforated cylinder and a steam-pipe, arranged substantially as indicated, the cylinder having a depending rim with a drip-hole discharging inside the rim, the rim serving as a supporting-base for the cylinder, the rim being seated in a vessel, whereby the condensed steam forms a water seal around the bottom of the rim, substantially as set forth.

4. In cloth-steaming apparatus, an upright hollow perforated cylinder and a steam-pipe, the latter entering the cylinder through a hole in the top head thereof, this pipe connecting with a steam-pipe leading from the generator by means of a conical union held in place by friction or gravity, or both, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 1st day of May, 1891.

CHARLES W. SCHAEFER.

Witnesses:

C. H. DORER,

WARD HOOVER.