

(No Model.)

J. FEISS.

CLOTH SPONGING AND SHRINKING MACHINE.

No. 539,938.

Patented May 28, 1895.

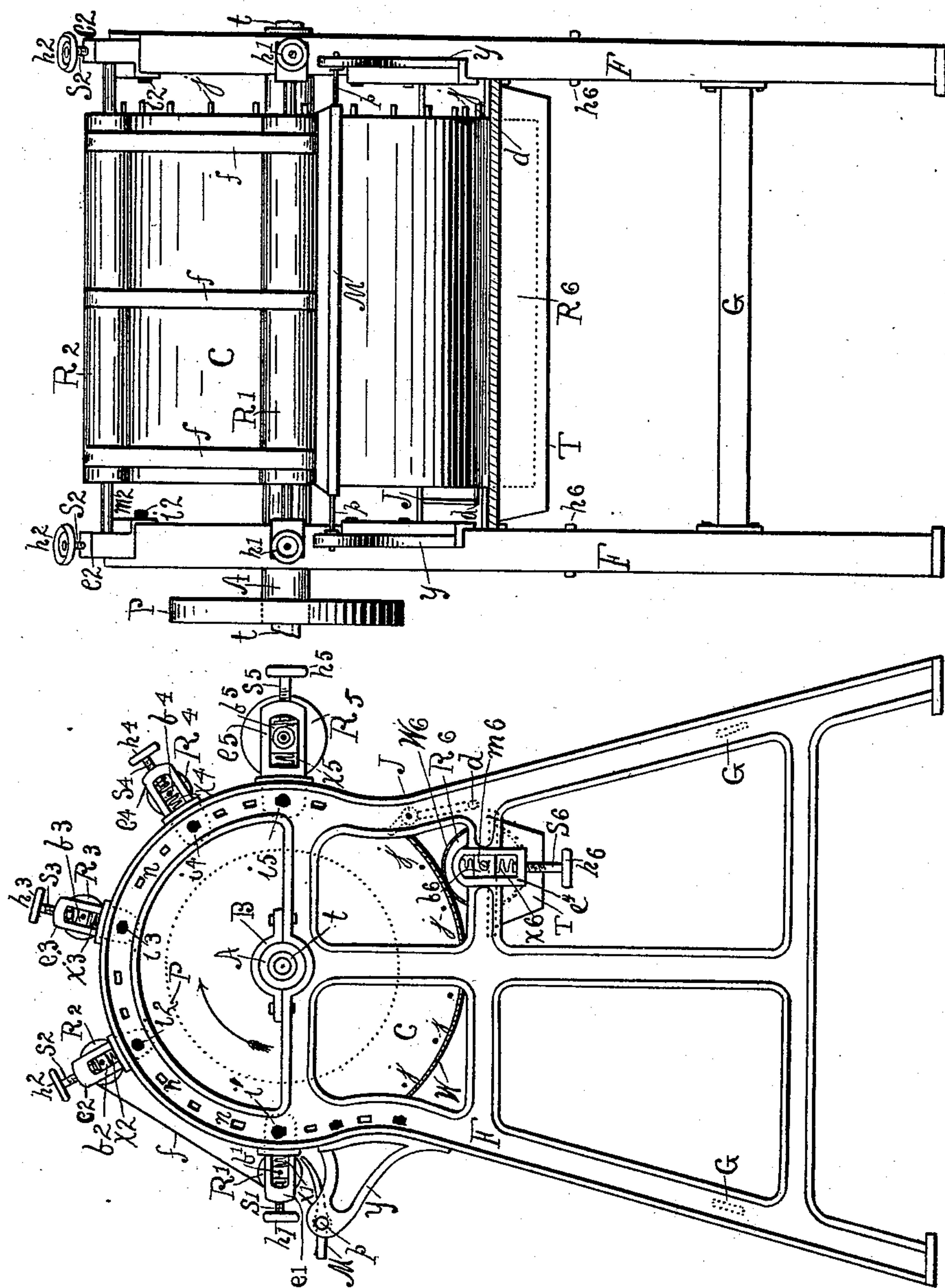


Fig. 2.

Fig. 1.

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UNITED STATES PATENT OFFICE.

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CLOTH SPONGING AND SHRINKING MACHINE.

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To all whom it may concern:

Be it known that I, JULIUS FEISS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Cloth Sponging and Shrinking Machines; and I do hereby declare the following to be a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to machines for sponging, shrinking and finishing cloth.

The object of my invention is to provide an improved machine for sponging cloth.

My invention consists in the details of construction and combination of parts described herein and defined in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of my improved machine, and Fig. 2 is a front elevation of the same.

In each view of the drawings the same parts of the machine are designated by the same reference characters.

F, F are the side frames or supports of the machine, which are connected by the bars G, G, and, as connected by such bars, constitute the machine frame. Boxes B are carried by the sides F, F of the frame.

C is a revolving cylinder that is supported by hollow trunnions or shaft A fitted to the boxes B. I provide for heating the revolving cylinder C by running a steam or a gas pipe *t* through one of the hollow trunnions A. However, the cylinder may be heated by any known means for heating rotating cylinders. The cylinder C has closely fitted to its periphery a water or a moisture absorbing jacket, W, which is preferably made of thick, smooth cloth of suitable texture.

The frames or standards F, F carry a series of rollers R', R², R³, R⁴ and R⁵ above and in contact with the rotating heated cylinder C, said rollers being journaled in the boxes b', b², b³, b⁴ and b⁵ of the box-frames e', e², e³, e⁴ and e⁵. The box-frames e', e², e³, e⁴ and e⁵ are secured to the standards F, F by means of bolts i', i², i³, i⁴ and i⁵ which pass through slots n, n, formed around the upper ends of the standards. The slots n, n, and the bolts i', i², i³, i⁴ and i⁵ provide a means of increas-

ing and of diminishing the number of rollers R, and of adjusting said rollers circumferentially of the cylinder C. Said rollers R are made adjustable radially to and from the cylinder C by means of the screws S', S², S³, S⁴ and S⁵ which are operated by the hand-wheels h', h², h³, h⁴ and h⁵; and the bearings for said rollers R are made yielding by means of the springs x', x², x³, x⁴ and x⁵. By providing the rollers R', R², R³, R⁴ and R⁵ with radially adjustable yielding bearings, any desired pressure of said rollers may be obtained, and the yielding bearings avoid the necessity of great accuracy in the radial adjustment of the rollers R and compensate for any unevenness in the fabrics run through the machine.

The rollers R', R², R³ and R⁴ may, if desired, be covered with a cloth jacket for protecting and maintaining a roughened surface to the cloth; or, if it should be desired to employ increased heat without raising the temperature of the cylinder C, any one or more of said rollers R may be heated in any known way for heating rotating cylinders.

The roller R⁵ is illustrated as being larger than the other rollers of its series. This roller is a smooth metallic cylinder, (preferably without a jacket or covering, and heated by any means known to the art) under and against which the cloth passes from the machine and whose smooth heated surface gives a "finish" to the cloth. The adjustment of the roller R⁵ circumferentially of the cylinder C, its radial adjustment and its yielding bearing have been described.

R⁶ is a dampening cylinder or roller which revolves by means of trunnions m⁶ journaled in the boxes or bearings b⁶. The boxes b⁶ have vertical adjustment in the box-frames e⁶ by means of the screw S⁶ operated by the hand-wheel h⁶. The springs x⁶ provide yielding bearings for the roller R⁶. The adjustment of the roller R⁶ to and from the cylinder C and its yielding bearings are like the adjustment and bearings provided for the superimposed series of rollers R. The dampening roller R⁶ is provided with a jacket W⁶, capable of absorbing and carrying water freely. This roller is partially immersed in a tank T that is kept partially filled with cold water, and forms a bath for the dampening roller.

M is a table supported on the pivot p of the

brackets *y*. Said brackets are attached to or made integral with the standards F, F.

The table M may be tipped on its pivot *p*, when a piece of cloth is started through the machine, to bring the end of the cloth up between the feed roller R' and the heated cylinder C to be gripped between the feed roller and the heated cylinder.

J are rods or swinging levers pivoted near their upper ends to the standards F, F. At the outer ends of the levers J is attached a rod *d* which extends across the machine from one of said swinging levers J to the other. Upon the end of the cylinder C are placed at desired intervals pins *j*. The pins *j*, as the cylinder C rotates, are adapted to engage the upper extensions of the levers J and to give the rod *d* a limited swinging movement, to serve as a folder of the cloth as it comes from the machine.

P is a pulley through which the machine is driven in the direction of the arrow in Fig. 1 by any suitable motive power.

The rollers R', R², R³, R⁴, R⁵ and R⁶ are rotated by frictional contact with the cylinder C, or by contact with the cloth as it travels over the cylinder C under said rollers.

f, f, are endless bands which travel around the rollers R' and R², as shown in the accompanying drawings.

By reason of the great simplicity of the construction of my machine, and in view of its description as given, its operation will be readily understood.

One end of the cloth to be sponged is placed on the table M, under the feed roller R', and the table is then swung on its pivot *p* so as to bring the end of the cloth into contact with the feed roller. The revolving heated cylinder C and the rotating roller R' grip the end of the cloth between them and cause the cloth to travel over the cylinder C below the endless bands *f, f* and the superimposed series of rollers R. The function of the endless bands *f, f* is to keep the cloth in contact with the

cylinder C on the upward travel. The dampening cylinder R⁶ carries water in sufficient quantity to the web or jacket W of the cylinder C. The dampness of the jacket W and the heat from the cylinder C cause the cloth to be sponged and shrunk as it passes over the cylinder C and under the rollers R', R², R³ and R⁴. The smoothing cylinder R⁵ puts a "finish" upon the face of the cloth. If it is not desired to put a "finish" on the cloth, the roller R⁵ need not be heated. The swinging of the bar *d* as described causes the cloth to fall in folds as it comes from the machine.

I am aware that internally heated cylinders have been employed for various purposes, and that rotating cylinders with a series of superimposed rollers have been used; but such machines do not anticipate my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a sponging machine, of a revolving heated cylinder, a jacket covering the revolving heated cylinder, a tank, a roller partially immersed in the tank, pins upon the end of the revolving heated cylinder, a lever adapted to be swung by said pins, said lever carrying at its outer end a rod for causing cloth as it comes from the machine to fall in folds, a feed roller, and a pivoted table, substantially as described.

2. The combination, in a sponging machine, of a revolving heated cylinder, a jacket covering the revolving heated cylinder, a tank, a roller partially immersed in the tank, an absorbent jacket covering the roller that is immersed in the tank, pins upon the end of the revolving heated cylinder, a lever adapted to be swung by said pins, said lever carrying at its outer end a rod for causing cloth as it comes from the machine to fall in folds, substantially as illustrated and described.

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