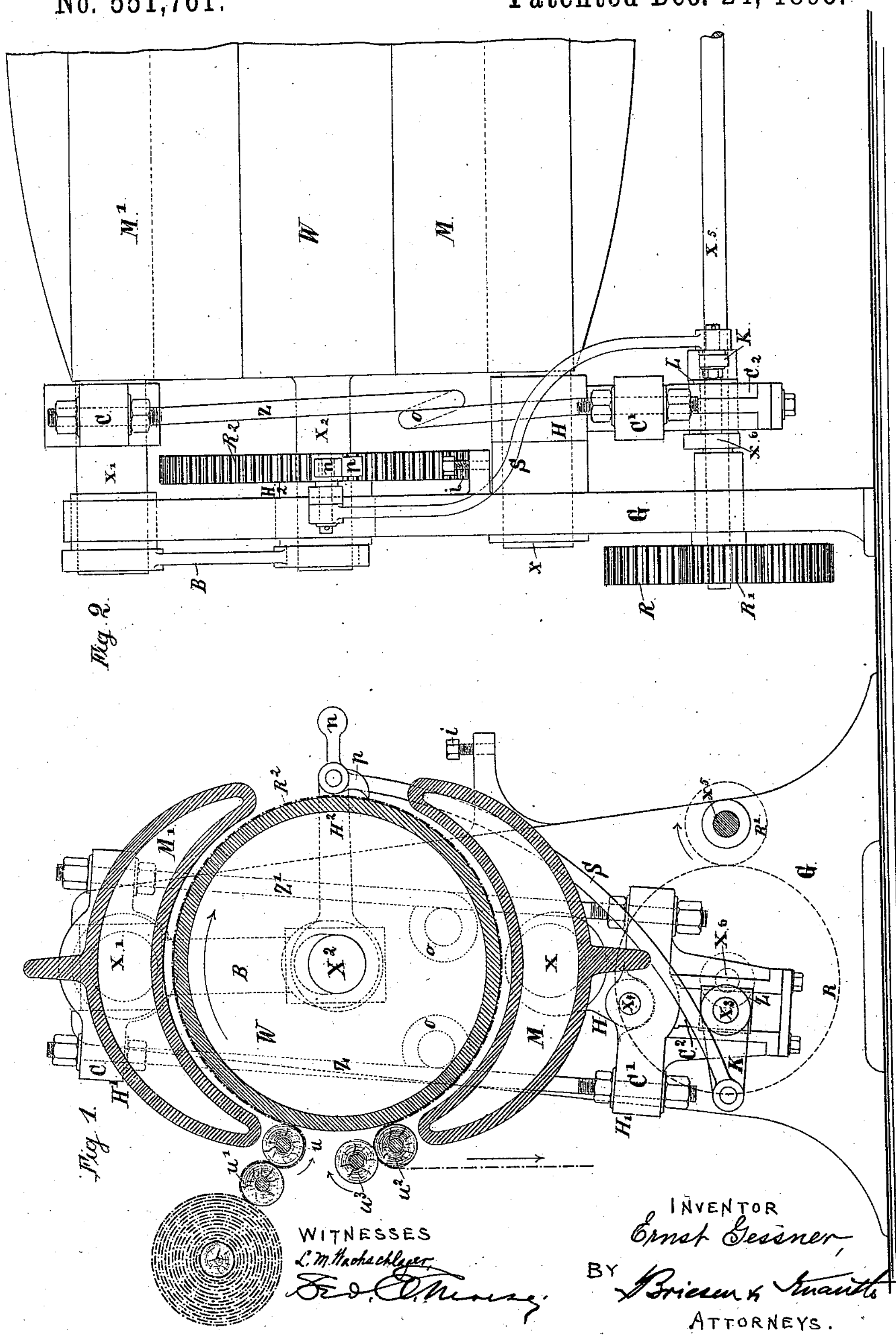
(No Model.)

E. GESSNER.

CLOTH PRESSING MACHINE.

No. 551,761. Patented Dec. 24, 1895.



WITNESSES
L. M. Kochschlager
Fred. C. Moses

INVENTOR
Ernst Gessner,
BY
Briesen & Knauth
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ERNST GESSNER, OF AUE, GERMANY.

CLOTH-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,761, dated December 24, 1895.

Application filed June 21, 1894. Serial No. 515,217. (No model.) Patented in Germany November 18, 1892, No. 71,699; in Belgium May 5, 1893, No. 104,538; in England May 11, 1893, No. 9,477, and in France May 16, 1893, No. 230,117.

To all whom it may concern:

Be it known that I, ERNST GESSNER, machine-builder, residing at Aue, in the Kingdom of Saxony, Germany, have invented new and useful Improvements in Cloth-Pressing Machines, (for which I have obtained Letters Patent in the following countries, namely: Germany, No. 71,699, dated November 18, 1892; Belgium, No. 104,538, dated May 5, 1893; France, No. 230,117, dated May 16, 1893, and Great Britain, No. 9,477, dated May 11, 1893,) of which the following is a full, clear, and exact description.

This invention relates to cloth-pressing machines having a rotary cylinder and heated concave presser-plates about the same.

In some such machines as heretofore constructed the cloth, when carried around with the cylinder, is subjected to friction against the presser-plates while under pressure between them and the cylinder, which pressure gives rise to certain defects, among others that of producing on certain goods a peculiar metallic luster or glaze known as the "stove-pipe-glaze," which is frequently considered objectionable, the fabric, moreover, being subjected to such excessive tension as to become diminished in width. Another defect is that certain fabrics, especially starched goods, are liable to adhere to the presser-plates and be torn.

The object of this invention is to obviate these defects, and this is accomplished by making the rotating motion of the cylinder and the pressing action of the presser-plates intermittent, and causing them to alternate the one with the other, so that the fabric only receives pressure when the cylinder is stationary and is only carried through the machine by the rotation of the cylinder when the presser-plates are out of contact with the cloth, these intermittent and alternating actions being so regulated that there shall not be any deficiency or excess of pressure on any portions of the fabric.

The invention will be described with reference to the accompanying drawings, wherein—

Figures 1 and 2 show, respectively, a central transverse section and a front elevation of one end of the machine.

M M′ are two steam-heated presser-plates arranged respectively below and above the cylinder W, the lower presser-plate journals X being supported in fixed bearings in the frame G, while the journals X^2 of the cylinder and X′ of the upper presser-plate M′ pass through vertical slots in the frame G and are supported in bearings to which up-and-down motion is imparted by mechanism, such as hereinafter described, the extent of such motion being twice as great for the top presser-plate as for the cylinder, so that in the upward motion the upper presser-plate M′ is raised from the cylinder W and the latter is separated from the lower stationary presser-plate M to about the same extent. This motion is produced by toggle mechanism, one at each end of the machine and each consisting of two main members whereof the one is a radius arm H, turning loosely on the journal X of the lower stationary presser M and pivoted by pin X^4 to the lower cross-head C′ of the other member H′. This member is composed of the lower cross-head C′ above mentioned and an upper cross-head C pivoted on the journal X′ of the upper presser M′, the two cross-heads C C′ being coupled by a pair of rods Z Z′ provided with screw-adjustments, to regulate the pressure, and spring loops O to enable the rods to yield to any excessive strain. The lower cross-head C′ has a guide-slot C^2 in which plays a die-block L in which is journaled a crank-pin X^3 on a rotating crank X^6 on a shaft driven from the main shaft X^5 by wheels R R′, whereby a pendulum-like motion is imparted to said member H′, which under the control of the radius arm H constituting the other member of the toggle is caused to move up and down. When the two members of the toggle are in the vertical line of centers or at the dead-point, the upper presser-plate M′ is forced down upon the cylinder W which is at the same time stationary, and bearing upon the lower presser-plate M, so that the fabric about the cylinder is pressed between it and the two presser-plates, whereas when the toggle-joints are moved to the one

side or the other of the line of centers, the upper presser-plate M′ is raised off the cylinder W which is at the same time also raised off the lower presser-plate M by suspension-links B coupling the journals X′ of the upper presser-plate to those X^2 of the cylinder through a slotted or loose connection with the latter, which permits of the upper presser-plate M′ being raised about half its distance of travel before it takes the cylinder W along with it. The fabric on the cylinder being then out of contact with both presser-plates is carried through the machine by the intermittent rotation of the cylinder W, which is effected by a pawl *p* with counterbalance *n* engaging a wheel R^2 on the cylinder, the pawl being carried by an arm H^2 pivoted about the cylinder-journal X^2 and operated through a link S by a crank-arm K fast on the end of the crank-pin X^3 which actuates the toggle, the amount of feed being regulated by a screw abutment *i* which when struck by the tail *n* of the pawl throws the latter out of engagement, the feed-rollers *u u′*, and driving-rollers u^2 u^3 for the fabric, being suitably geared or connected with the cylinder, no such connection however being shown, since it will be readily understood.

It will be seen that the timing of the toggle and feed motions is such that the feed takes place only when the pressers M M′ are quite separated from the cylinder W and the pressure is applied only when the cylinder W is stationary.

I claim—

In a cylinder cloth pressing machine, the combination, of a rotatable and transversely movable cylinder, a stationary and a transversely movable presser-plate, toggle mechanism and a crank therefor, and a feed arm actuated by the toggle operating crank to rotate the cylinder intermittently when the presser-plate and cylinder are being separated by said toggle mechanism, substantially as described.

ERNST GESSNER.

In presence of—
F. W. E. PRESUHN,
J. EMIL FALKE.