No. 763,895. PATENTED JUNE 28, 1904.

M. A. HOLMES.

LEATHER PRESS.

APPLICATION FILED SEPT. 26, 1901.

NO MODEL. 3 SHEETS—SHEET 1.

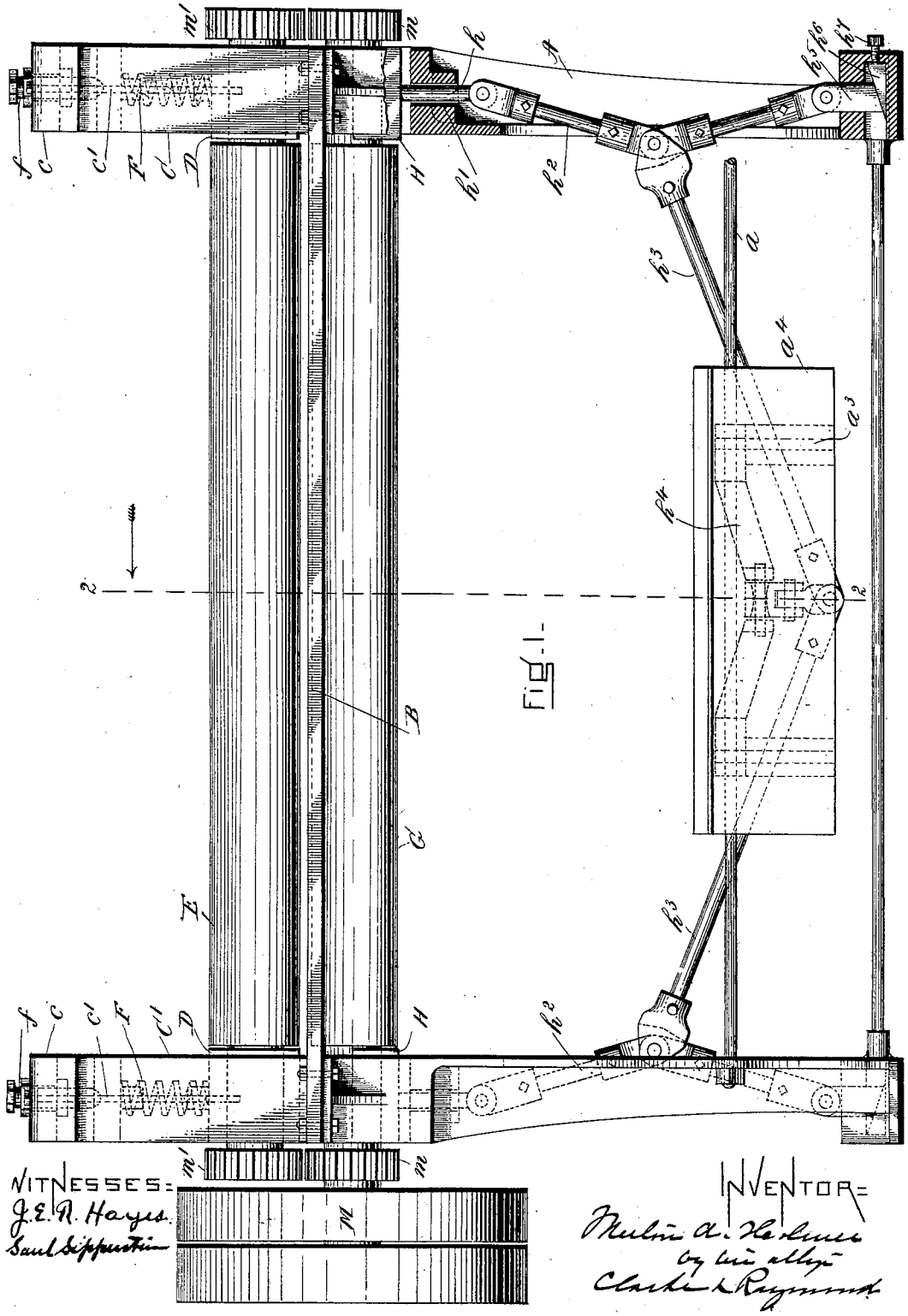

Fig. 1.

WITNESSES:
J. E. R. Hayes.
Saul Sippenstein

INVENTOR:
Melvin A. Holmes
by his attys
Clarke & Raymond

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 763,895. PATENTED JUNE 28, 1904.

M. A. HOLMES.

LEATHER PRESS.

APPLICATION FILED SEPT. 26, 1901.

NO MODEL. 3 SHEETS—SHEET 2.

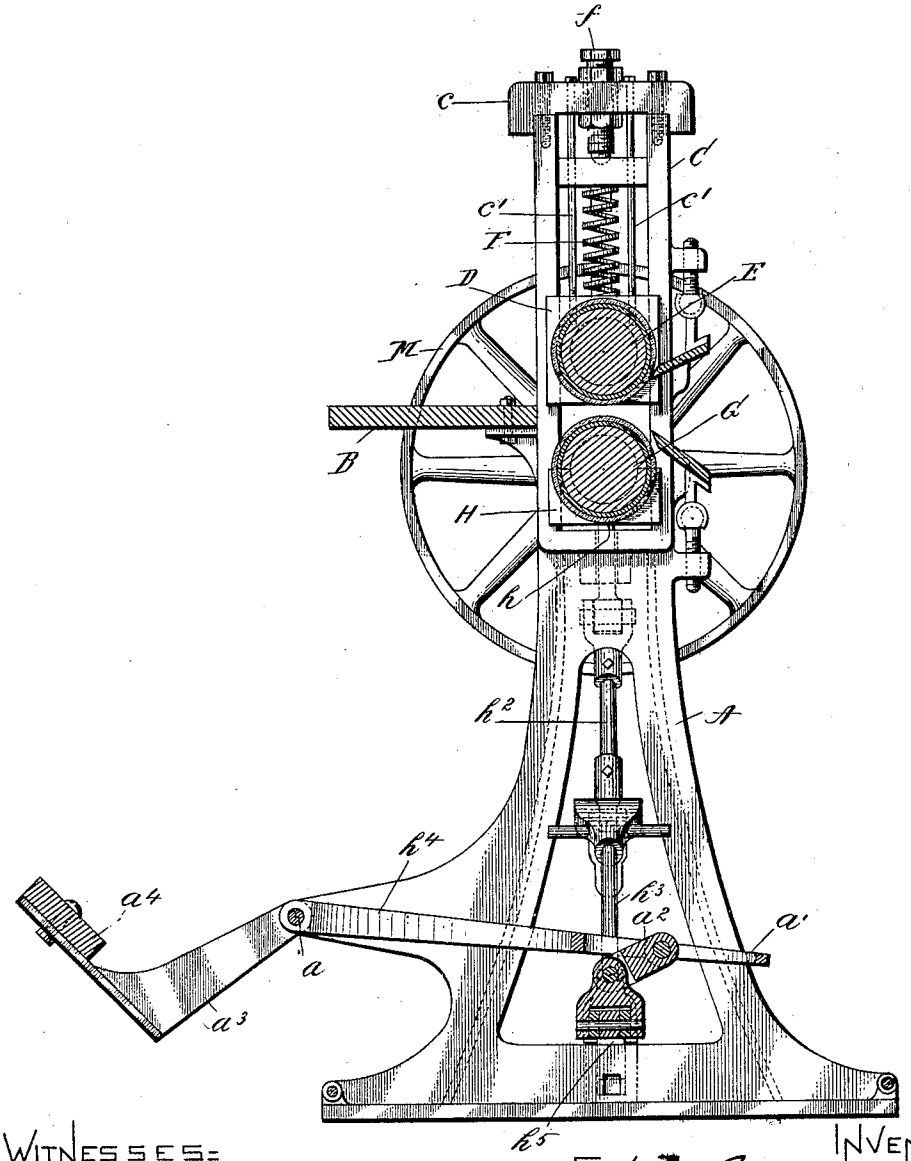

Fig. 2.

WITNESSES:

John E. R. Hayes.

Saul Sieferstein

INVENTOR:

Melvin A. Holmes

by his attys

Clarke & Raymond

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 763,895. PATENTED JUNE 28, 1904.

M. A. HOLMES.

LEATHER PRESS.

APPLICATION FILED SEPT. 26, 1901.

NO MODEL. 3 SHEETS—SHEET 3.

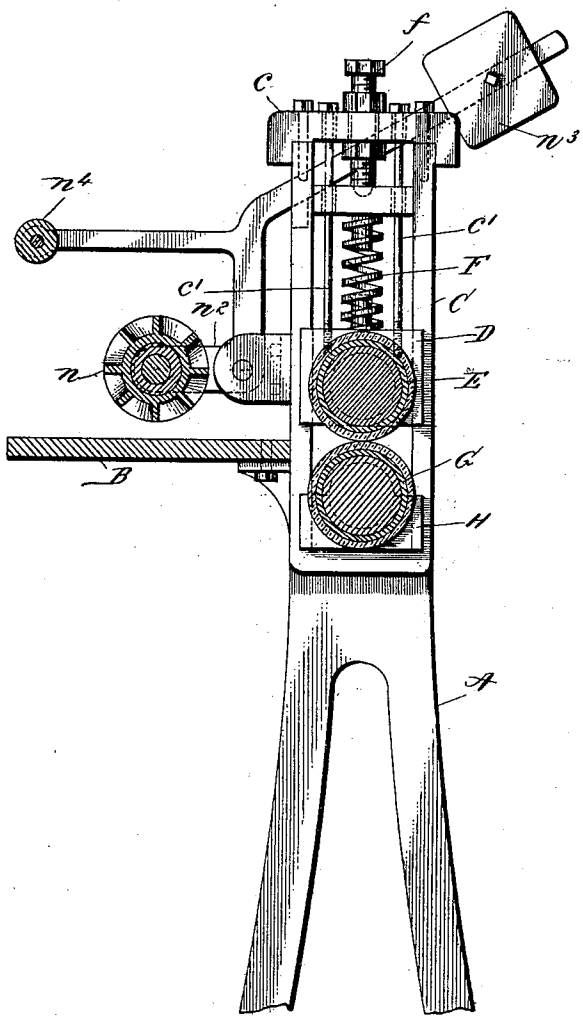

Fig. 3.

WITNESSES:

John E. R. Hayes.

Saul Sippenstein

INVENTOR:

Merton A. Holmes

by his Attys

Clarke & Raymond

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 763,895. Patented June 28, 1904.

UNITED STATES PATENT OFFICE.

MERTON A. HOLMES, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO CHARLES HOLMES MACHINE COMPANY, OF PORTLAND, MAINE, AND BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

LEATHER-PRESS.

SPECIFICATION forming part of Letters Patent No. 763,895, dated June 28, 1904.

Application filed September 26, 1901. Serial No. 76,632. (No model.)

To all whom it may concern:

Be it known that I, MERTON A. HOLMES, a citizen of the United States, and a resident of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Leather-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to presses for removing fluids from pieces or sides of leather, hides, or skins. It belongs to the class employing rolls for feeding the sides, &c., and for exerting a wringing or pressing action upon them while they are being fed. It is represented as embodied in an apparatus having a table, upon which the leather, skin, or hide may be spread by hand or other means, and two feed and pressure rolls back of the table arranged to feed and press the leather, skin, or hide upon the line of the table, the upper of which rolls is yieldingly mounted and the lower of which rolls is provided with vertical movement toward and from the upper by means of a treadle operated by the foot and weight of the operator and intermediate power-developing devices, the lower roll normally occupying a position removed from the upper roll and being moved against it, or rather the leather, hide, or skin between them, by the operation of the treadle, and also being held in such position by the treadle and, further, being immediately released in order that it may drop of its own weight upon the release of the treadle, the roll and its connections serving to overbalance the treadle and causing it to be automatically lifted upon its said release. This construction of the machine affords a means for the immediate variation of the degree of pressure upon the leather, hide, or skin or for the full release of such pressure and for the application of such pressure which is always within the prompt control of the operator. In fact, he feels the pressure as the machine runs, and therefore the leather, skin, or hide may be readily manipulated at any time during its progress between the pressure-rolls, and any tendency to plait, fold, or crease foreseen and avoided, the release of the treadle permitting the operator to immediately withdraw the hide from between the rolls upon the table. A spreading-roll arranged in front of the feed and pressure rolls to coöperate with the table in spreading the leather, hide, or skin may be used, if desired.

In the drawings, Figure 1 is a view, principally in front elevation, of a press having the features of my invention, one of the side frames being shown in vertical section to represent a part of the construction. Fig. 2 is a view in vertical central section from front to rear of the machine upon the dotted line 2 2 of Fig. 1, and Fig. 3 is a detail view upon the same section to illustrate the spreading-roll and its relation to the table and feed and pressure rolls.

Referring to the drawings, A represents the frame of the machine, preferably made of cast-metal sides tied together by tie-rods. It is shaped to provide in each side a housing for two slide-blocks, one above the other, and to support upon its front side the table B, upon which the leather, hide, or skin is spread and smoothed as it is presented to the feed and pressure rolls.

C is the housing at one side of the machine, and C′ the housing at the other side.

D in each housing is the upper box, which boxes support the upper feed and pressure roll E. Each of the boxes D is suspended from the cap *c* by rods *c′* free to move in the cap and screwing into the box. These rods when in their lowest position limit the extent of downward movement of the boxes D and roll E. The spring F bears against each of the boxes, and its tension is varied by means of an adjusting-screw *f*, mounted in the cap *c*, which bears against a block movable upon the rods *c′*, against the under surface of which the spring F bears. The box and the block may have pins for holding the spring in position between them.

The lower feed and pressure roll G is mounted upon the boxes H, one in each housing, and these boxes rest upon the lifting-

pins h, (see Figs. 1 and 2,) one upon each side. These pins are free to move in the holes h' in the side pieces of the frame and are provided with simultaneous movement in an upward or downward direction by means of the vertical toggles h^2, one under each pin, and the horizontal toggle h^3, connecting the moving centers of the vertical toggles and operated by means of the lever h^4, which turns upon the cross-rod a as a fulcrum, the inner end a' of which is connected with the moving center of the horizontal toggle by the link a^2 and the outer end a^3 of which forms the treadle a^4. The arms of the horizontal toggle h^3 are connected at their center to form a movable joint by being pinned together, while the lower end of the link a^2 is made to straddle the arms at this their point of jointure and be connected therewith preferably by the same connecting-pin that joins the arms together. The upper end of the link a^2 has a loose connection with the lever a' in order that it may play thereon as it is lifted from the inclined position represented in Fig. 2 to the vertical position which it occupies when the treadle is depressed to straighten the horizontal toggle. The lower end of each vertical toggle is jointed to a holder h^5, vertically adjustable in the side frame by means of the wedge h^6, upon which it rests and which is horizontally movable beneath it to vary its height. This adjustment is represented as obtained by an adjusting-screw h'. The operation of this part of the machine is as follows: When the treadle is in the position represented in Fig. 2, the inner end of the lever is depressed and the horizontal and both vertical toggles are in the open position represented in Fig. 1. This causes the lifting-pins to be depressed, the lower boxes to move down, and the lower roll to be moved down from the upper roll and held from it, so that there is a clear space between the two rolls, (see Fig. 2,) which is in the main below the upper surface of the table B. The operator may then spread the leather, hide, or skin upon the table B and even upon the surface of the under roll, and after he has so done he moves the treadle downward, thereby straightening the horizontal and vertical toggles and lifting the lifting-pin and the lower feed and pressure roll forcibly against the forward end of the leather, skin, or hide placed between them or next them, and both rolls revolving act to feed the leather, skin, or hide and at the same time to press it at as great a pressure as may be desired, which is always under the control of the treadle and operator, to remove therefrom the liquid with which it may be saturated. If the operator sees a tendency of the leather, skin, or hide to plait or wrinkle between the rolls as it is feeding he may release the treadle controlling the movable lower roll, which thereupon automatically moves downward from the upper roll, releasing said leather or skin and also lifting the treadle. This of course removes the pressure of the rolls from the leather or skin and permits it to be drawn backward upon the table and the wrinkles or plaits smoothed out before it is again fed to the action of the rolls. It will be understood that the pressure of the rolls upon the leather is varied according to the force exerted through the treadle due to such weight as the operator may wish to place upon it. It will be further understood that upon the release of the treadle the pressure of the rolls immediately ceases, as the lower roll not being then borne by the weight of the treadle immediately moves downward and serves with the toggles to lift the treadle. The rolls may be driven in any desired way. As a conventional means I have represented the driving-pulley M as mounted upon an extending end of the shaft of the lower roll, and I have also shown the shafts of the two rolls geared together by the gears m and m', so that the upper roll is driven from the lower roll. The pulley, however, may be on a counter-shaft and geared to the upper roll, if desired. It will be understood, of course, that where the lower shaft or roll G is driven from the source of power suitable provision will be made for maintaining the driving-belt in proper relation to the pulley M as the roll G and the said pulley are moved up and down. The rolls may be covered with layers of absorptive material, and I prefer for this purpose burlap or similar coarse-textured fiber, but do not confine myself to its use. It is applied to the outer surface of each roll in any desired way.

A spreading-roll N (see Fig. 3) may be used to coöperate with the table B in spreading the leather, hide, or skin thereon preparatory to the pressing action of the pressure-rolls. I have represented the roll as mounted upon arms n^2, fulcrumed to the side pieces of the frame and each of which arms extend backward and there carries an overbalancing-weight n^3 and has a forward extension to support a depressing-handle n^4. The roll is moved down upon the leather or hide by hand with any pressure desired and is moved out of engagement with it by the overbalancing-weights. It is rotated by a pulley mounted upon its shaft or in any other desired way and at any speed required. It may be of any usual construction, preferably that comprising spiral blades extending from the center of the roll in reverse directions.

The treadle a^4 is preferably weighted to very nearly counterbalance the weight of the lower roll G and of the toggles, but not enough to prevent the roll and toggles from automatically lifting the treadle upon the release of the foot of the operator from it, the idea being to provide on the one hand ease of movement for the operator and on the other for an automatic opening of the rolls upon the release of the operating pressure.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a leather-press and in combination, a plurality of feed and pressure rolls; a feed-table at the feeding-mouth of said rolls; a spreader above said table; and means for moving said spreader toward and from said table.

2. In a leather-press and in combination pressure-rolls, a feed-table, a spreader over said table and in front of said pressure-rolls, and means to normally hold said spreader away from said table.

3. In a leather-press in combination pressure-rolls, a feed-table, a spreader in front of said rolls above said feed-table and manually movable toward and from the same, and means to normally hold said spreader away from said table.

4. In a leather-press in combination pressure-rolls, a feed-table, a spreader in front of said rolls, and manually movable toward and from said table, and a counterbalance to normally hold said spreader away from said feed-table.

MERTON A. HOLMES.

Witnesses:
JOHN E. R. HAYES,
SAUL SIPPERSTEIN.