No. 813,656. PATENTED FEB. 27, 1906.

W. H. LYONS.

HAT SIZING MACHINE.

APPLICATION FILED JULY 24, 1905.

2 SHEETS—SHEET 1.

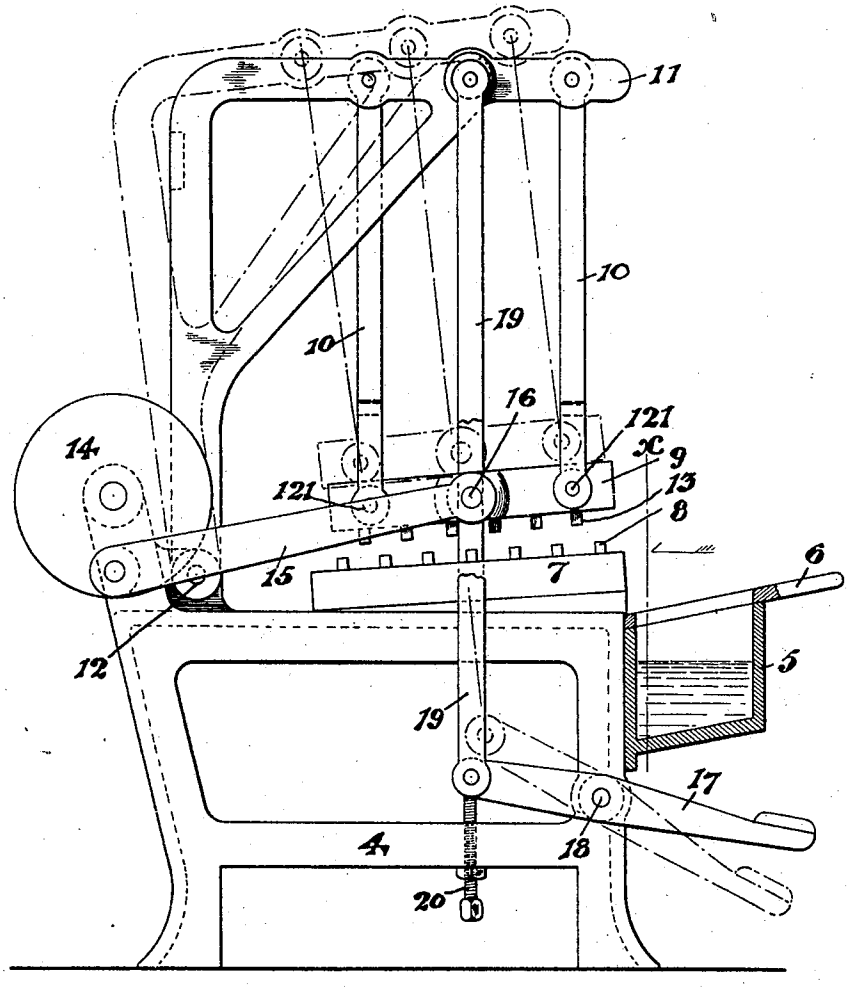

Fig. 1.

WITNESSES

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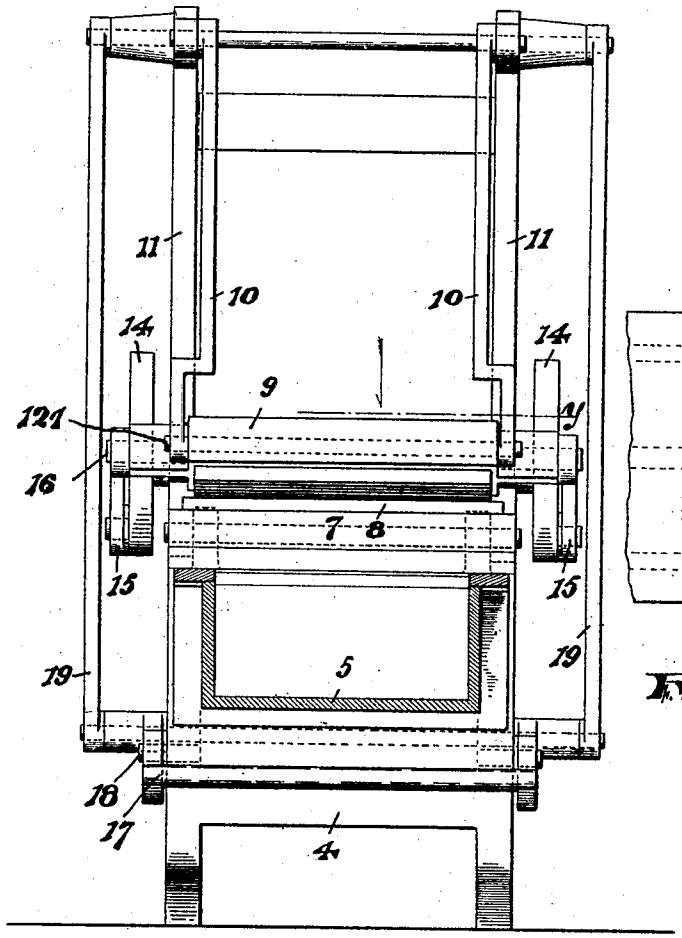

Fig. 2.

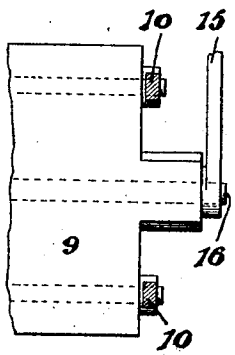

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM H. LYONS, OF WEST ORANGE, NEW JERSEY.

HAT-SIZING MACHINE.

No. 813,656. Specification of Letters Patent. Patented Feb. 27, 1906.

Application filed July 24, 1905. Serial No. 270,958.

To all whom it may concern:

Be it known that I, WILLIAM H. LYONS, a citizen of the United States, residing at West Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Hat-Sizing 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 appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The objects of this invention are to secure a more perfect sizing of the hat, to reduce the "croze" marks and other similar imperfections incident to the use of the machines having rolls, to avoid the loss resulting from the production of "knockdown" hats because of such imperfections, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved hat-sizing machine and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like figures of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of my improved hat-sizing machine. Fig. 2 is a sectional view of the same, taken at line x, Fig. 1; and Fig. 3 is a horizontal section taken at line y, Fig. 2.

In said drawings, 4 indicates a frame which forms a bed or support for a tank 5, disposed at the front thereof, and for the various working parts hereinafter described. Said tank 5 contains a coil of steam-pipes, (not shown,) such as is commonly employed in connection with hat-sizing machines. At the front of said tank is a board or plank 6, on which the felt is rolled up preliminary to being inserted in the machine and afterward unrolled and again rolled by the operator from time to time as the hat-sizing operation progresses.

Back of the tank 5 and a little above the same is formed a horizontal or slightly-inclined rubbing-board 7, which is supported on the said frame 4 in any suitable manner, the said rubbing-board being provided with lags 8, over which the roll of felt forming the hat-body is reciprocated by a coöperating reciprocatory rubbing-board 9, which is substantially parallel with the first said board. The last said rubbing-board is suspended at its opposite ends by means of parallel connecting-rods 10 10, with an angular supporting-frame 11, which latter is pivoted, as at 12, to the rear of the bed 4 and extends upward from its hinge pin or pivot and projects forward to receive the suspensory connecting-rod 10. The said connecting-rods 10 are pivoted at their lower ends, as at 121 121, to the upper rubbing-board 9, the pivotal connections being disposed one pair near the front of the said upper rubbing-board and the other pair at the rear part of said board, the said rods holding the said upper rubbing-board approximately parallel with the lower rubbing-board, and because of the front rods being of substantially equal length to the rear rods the said upper board maintains its parallel relation with the lower board as it moves backward and forward, as hereinafter described. The said upper rubbing-board 9 is provided on the under side with lags or projections 13, corresponding with the lags or projections formed on the upper side of the lower rubbing-board.

While the movement of the upper board is approximately in lines parallel with the plane of the lower rubbing-board, I prefer to make the connecting-rods 10 slightly longer at the front or at the rear of the upper rubbing-board than those at or near the opposite edge of said board, which gives to the upper board a tilting movement. This in practice serves to prevent the roll of hats undergoing the sizing operation from working out from between the said board.

The reciprocatory action of the upper rubbing-board 9 is effected preferably by means of a pair of eccentric or crank wheels 14 and connecting-rods 15, which latter extend from said crank-wheels to the opposite ends of the said reciprocating upper rubbing-board, the said connecting-rods being pivoted both to the crank-wheel and the rubbing-board, the pivotal connections being central between the opposite longitudinal edges of the said board at 16. Power is applied for operating the crank-wheels in any suitable manner.

To open up the upper board from the lower to permit insertion of the roll of hats between or the removal of the said roll from between said rubbing-boards, I have provided a foot

lever or treadle 17, which is fulcrumed at 18 and is pivotally connected at its rear end with a connecting-rod 19, which extends to and is pivoted on the upper part of the pivotal frame 11, so as to throw said frame upward and rearward, as will be understood.

To limit the downward movement of the upper rubbing-board and to regulate and control the pressure of said upper rubbing-board upon the roll of hats lying thereunder, I have provided a limiting-screw 20, adapted to be turned by hand or tool, so as to engage the pedal 17 or some connection thereof, and thus prevent said downward movement.

It is obvious that the construction above detailed may be modified without departing from the spirit or scope of the invention.

Having thus described the invention, what I claim as new is—

1. In a hat-sizing machine, the combination of a tank, a rubbing-board outside of said tank, a second rubbing-board parallel with the first said rubbing-board and above the same, a suspensory frame having an extension above said rubbing-boards, parallel rods connecting the second rubbing-board to said suspensory frame, and means for reciprocating the upper rubbing-board, substantially as set forth.

2. In a hat-sizing machine, the combination of a tank, a rubbing-board rearward of said tank and above the same, a second rubbing-board above the first said rubbing-board, a pivoted suspensory frame, rods connecting the second rubbing-board to said frame, means for reciprocating the second rubbing-board, and a pedal for raising the second rubbing-board with its suspensory frame from the first, substantially as set forth.

3. The combination with the bed, having pivotal bearings near the back thereof, and a frame extending upward from the said pivotal bearings and having at the top thereof, a forwardly-projecting suspensory extension, rods pivoted upon the said forward extension, a rubbing-board carried by said rods, and a lower rubbing-board seated beneath the upper rubbing-board upon the bed, an eccentric or crank wheel, and connections of said crank-wheel with the upper rubbing-board.

4. The combination with the bed, having pivotal bearings near the back thereof, and a frame extending upward from said pivotal bearings and having at the top thereof, a forwardly-projecting suspensory extension, rods pivoted upon the said forward extension, a rubbing-board carried by said rods, and a lower rubbing-board seated beneath the upper rubbing-board upon the bed, an eccentric or crank wheel, and connections of said crank-wheel with the upper rubbing-board, a screw limiting a downward movement of the upper rubbing-board, and a pedal and connections of said pedal with the pivoted frame.

5. The improved hat-sizing machine herein described, comprising a bed having a tank at the front, and back of, and a little above said tank, having an approximately horizontal rubbing-board, a frame pivoted at the rear of said bed and extending upwardly and forwardly therefrom, a pedal and a rod connecting said pedal with the forward extension of said frame, a reciprocating rubbing-board and suspensory rods for the same, a crank-wheel and connecting-rod of said wheel and reciprocating rubbing-board, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of July, 1905.

WILLIAM H. LYONS.

Witnesses:
CHARLES H. PELL,
M. V. DOYLE.