S. PIRON.

Hat Finishing Machine.

No. 204,994. Patented June 18, 1878.

Fig. 1.

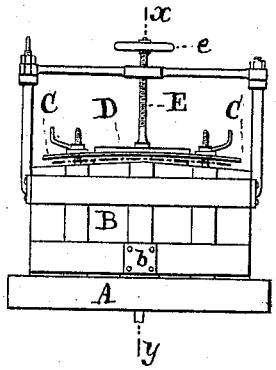


Fig. 2.

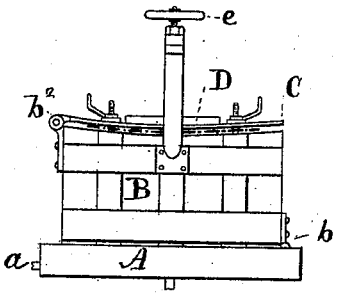


Fig. 3.

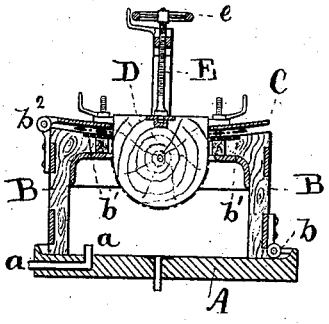


Fig. 4

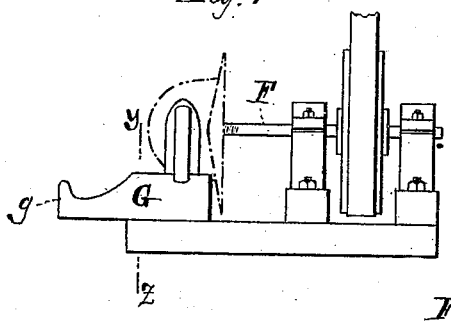


Fig. 5.

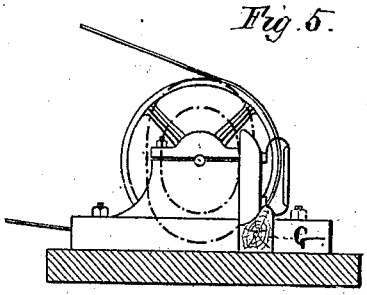
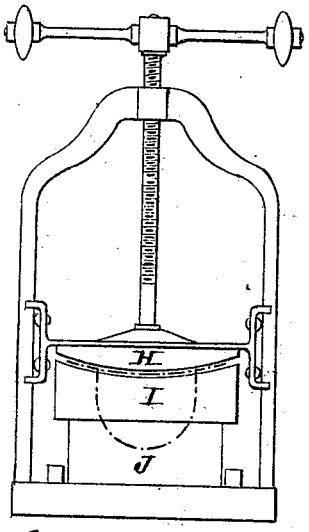


Fig. 7.

Fig. 6.



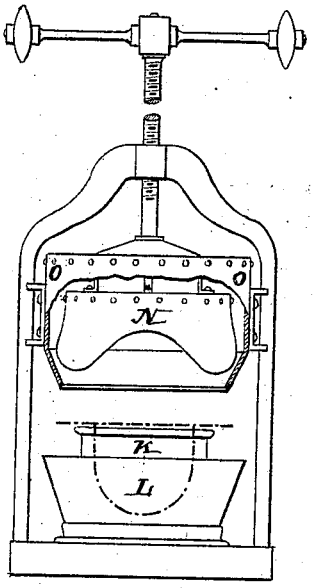
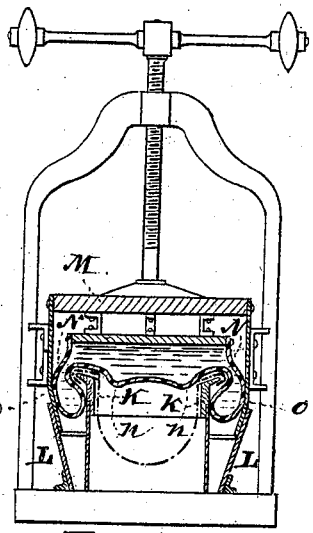


Fig. 8.



Witnesses.

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Aug. Vinck

Inventor:

S. Piron

UNITED STATES PATENT OFFICE.

SIMON PIRON, OF PARIS, FRANCE.

IMPROVEMENT IN HAT-FINISHING MACHINES.

Specification forming part of Letters Patent No. **204,994**, dated June 18, 1878; application filed April 25, 1878.

To all whom it may concern:

Be it known that I, SIMON PIRON, of Paris, in the Republic of France, have invented certain new and useful improvements in the method of finishing hats by mechanical means, and of machinery or apparatus used in connection therewith, of which improvements the following is a full, clear, and exact description.

My invention has for its object to effect by mechanical means such operations in the finishing of hats which heretofore could only be done in an economical and advantageous manner by hand, which for this purpose necessitated the highest skill in labor, and which for this reason was expensive.

To this end my invention consists in the successive application of four machines, all cooperating toward the same result. I shall now proceed to describe their construction and operation.

The first, which I shall call the "shaping-machine," has for principle of action the combination of two distinct pressures applied separately, one on the brim, the other on the crown, of the hat. I am thus enabled to make hats of different heights with one and the same shaping-form.

Figure 1 represents a front view of such a shaper. Fig. 2 is a side view of the same, and Fig. 3 a vertical section on line *x y* in Fig. 1.

The machine is generally placed on a table, A, which is supported at the proper elevation by means of legs. (Not shown in the drawings.) Upon the table is placed an iron-hooped wooden drum, B, which can be lifted on turning it on a hinge, *b*. This drum terminates at its upper side in a flange, b^1, upon which are placed, in a recess therefor provided, oval-shaped rings of iron of a rectangular or square cross-section, the last of which rings corresponds in shape exactly to and is the counterpart of the exterior contour line of the hat to be shaped at the part where the crown meets the brim. The iron rings are perforated with small holes, as indicated in Fig. 3, for the purposes hereinafter explained.

Upon this flange of the drum is placed the rim of the hat, in the manner shown in the drawing in dash and dotted line. An iron yoke or annular disk, C, capable of rotating upon the hinge b^2, is then clamped down against the rim, and compresses it by means of screws and nuts suitably arranged.

When this is done a wooden form, D, is introduced in the interior of the hat. This form may without inconvenience protrude from the hat any height, and may therefore serve for hats of different heights. A notable economy in the stock of tools or material is thus effected. I would observe, it is important that the angle at the brim and crown should be sharply defined.

After having brought the several parts described into their proper relation, as set forth, and shown in the drawings, pressure is applied by means of the screw E, which is rotated by the hand-wheel *e*, and while this is being done steam is admitted through the conduit *a* in the table. It will be seen that the steam will come in contact with the crown, and, penetrating through the foraminous plate, will act on the brim.

The reversing of the operations described will set the machine ready for another hat and operation thereon.

The first operation having been thus accomplished, the hat, with its wooden form, is mounted upon the revolving shaft of the ironing-machine, which is represented in side elevation in Fig. 4 and in end view in Fig. 5, the latter being a partial sectional view on line *y z* in Fig. 4. The extremity of the revolving shaft F is screwed into a corresponding piece, which carries the form, and rotary movement is imparted to the shaft by means of a belt and pulley.

The sad-iron is held in a slide or groove in the movable wooden support G. The operator will hold the sad-iron by its handle with the right hand, while he will give with his left hand, resting on the extremity *g* of the support G, the necessary movements to the support. It will be understood that by this means the different parts of the surface of the crown can be ironed without excessive fatigue, and yet great yielding pressure can be exerted, which, as competent persons well know, is important, and could only be heretofore accomplished by manual skill.

The second operation of the finishing—that is to say, the ironing of the crown—having thus been effected, the hat is now subjected

to the action of a brim-press. (Shown in the annexed drawings in Fig. 6.) The brim of the hat is in said machine compressed between two blocks, H and I, made of a plaster composition. These blocks are iron-hoop bound, and the surface of the lower one is covered with a number of sheets of prepared canvas, and is supported by a wooden socket, J. Suitable guides and rollers insure the rectilinear movement of the upper block when it is forced down by means of the screw.

From this brim-press the hat is carried to the rim-turn-over press, which is shown in Figs. 7 and 8, the former figure representing in elevation the different parts before pressure is given. The latter shows the same pieces, partly in section, after pressure.

K is a wooden matrix, supported by a sheet-iron cylinder. Upon the borders of this matrix is placed the brim of the hat, as seen in Fig. 7. The matrix, with its hat, is then placed, after having its brim exposed to the action of heat for a few moments, in the center of a conical receptacle, L, fixed upon the table.

The platen M, which is attached to the screw, carries a rubber pouch, N, of a peculiar conformation, as shown in the drawings, and filled with water, and a cylindro-conical casing, O, which surrounds said pouch. The conical receptacle L and the lower portion of the cylindro-conical casing are made to fit each other, the latter into the former, with precision. When, therefore, the platen, with its pouch and casing, is lowered by the action of the screw, it will be understood that the pouch will adapt itself to the shape of the matrix and exert a uniform pressure in every direction, so much so that the brim of the hat will be obliged to conform therewith and take the shape of the matrix. The angle formed between the brim and the crown will also be sharply defined by the ridges *n n* thus formed in the pouch.

Having thus described my said invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

The herein-described apparatus for shaping and finishing hats, the same consisting substantially, first, of mechanism for shaping by two distinct but simultaneously-produced pressures upon the brim and crown of the hat while both are subjected to the action of steam; second, of mechanism for ironing the crown, consisting of a revolving hat-carrying form and an adjustable sad-iron support operated by hand, substantially as herein shown and set forth; third, of mechanism for shaping and pressing the brim, consisting of blocks made of a composition of plaster, one stationary and the other movable, as herein set forth; and, fourth, of mechanism for turning the rim, consisting of a matrix supporting the brim of a platen, carrying an india-rubber pouch filled with water, and a cylindro-conical case in two parts, operating as herein shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

S. PIRON.

Witnesses:
EMILE BARRAULT,
AUG. VINCK.