G. A. Mandeville,

Felting Machine.

No. 108715. Patented. Oct. 25. 1870.

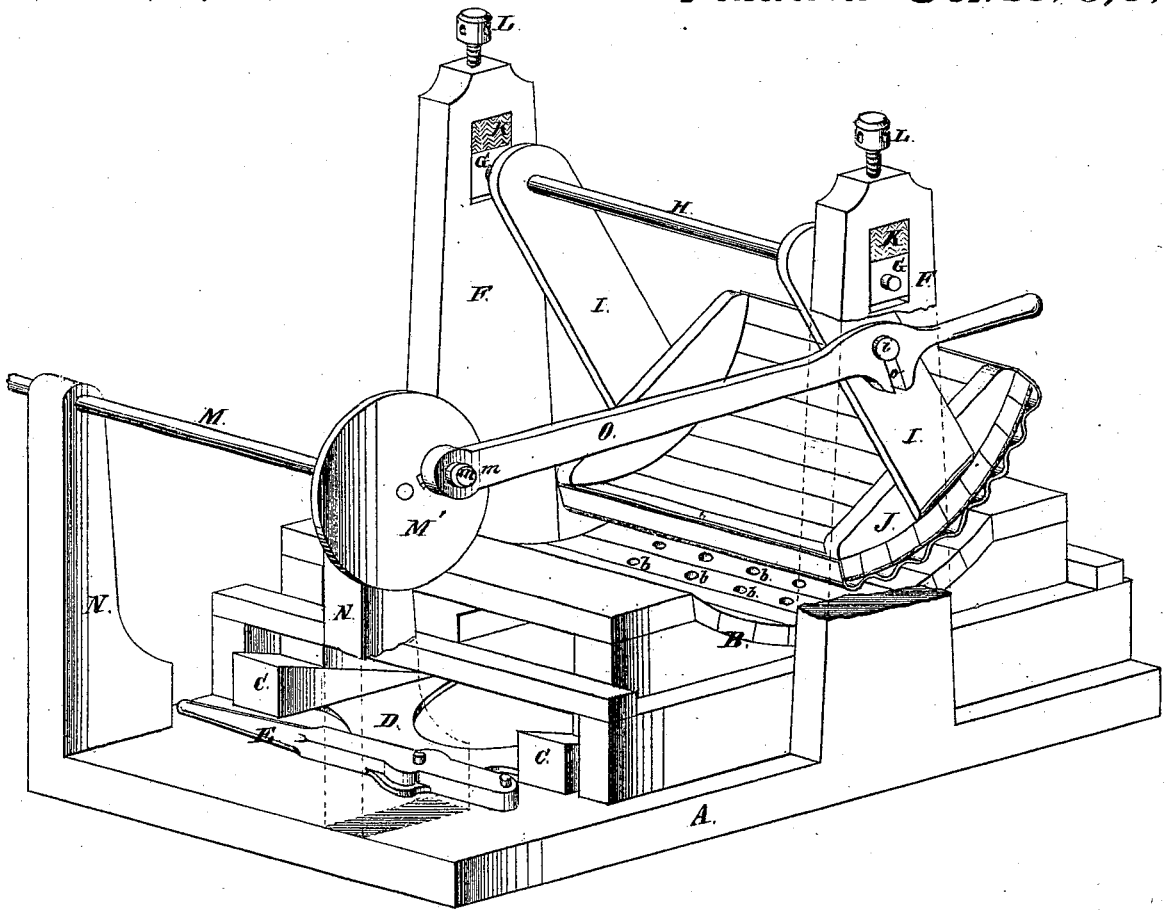
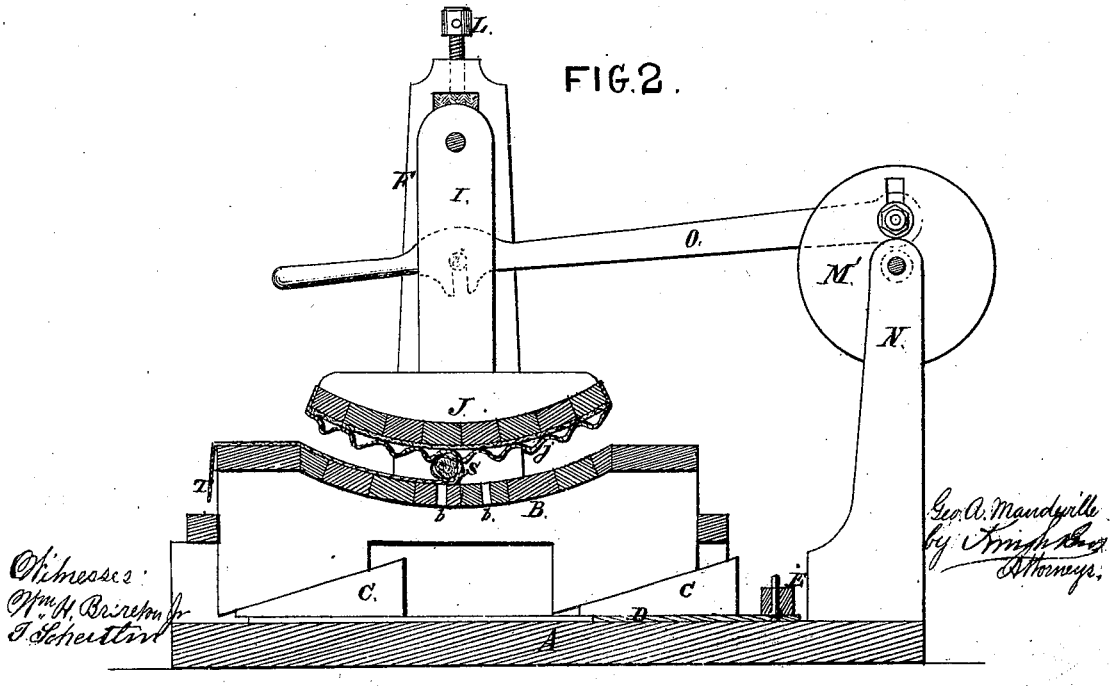


FIG. 2.



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UNITED STATES PATENT OFFICE.

GEORGE A. MANDEVILLE, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF AND ABRAM C. WHEATON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR SIZING AND FELTING HAT-BODIES.

Specification forming part of Letters Patent No. **108,715**, dated October 25, 1870.

To all whom it may concern:

Be it known that I, GEORGE A. MANDEVILLE, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Machine for Sizing and Fulling Hat-Bodies, of which the following is a specification.

My machine is constructed with a stationary concave bed and an oscillating presser, the surfaces of the said bed and presser constituting parallel arcs concentric with the axis on which the presser vibrates. The surface of the presser is preferably corrugated, and either or both surfaces may be formed of sheet metal, or of india-rubber or wood, as preferred. Wedges are employed to adjust the height of the bed relatively to the presser, and the bearings of the latter are provided with springs and adjusting-screws. Oscillation may be communicated to the presser by means of a crank-shaft and connecting-rod. A suitable appliance is provided to discharge steam through the bed into the fabric under treatment.

In the accompanying drawings, Figure 1 is a perspective view of my improved machine. Fig. 2 is a vertical transverse section thereof.

A represents the base of the machine, upon which the concave bed B is supported adjustably by wedges C C connected to a yoke, D, and slid in and out as required by a lever, E. The concave surface of the bed B may be formed of slats, some of which are perforated, as shown at *b b*, to admit of steam being passed through the bed to assist the operation.

F F are standards, in which are mounted the bearings G G of a shaft, H.

I I are arms depending from the shaft H, so as to oscillate therewith. The said arms carry a presser, J, which has a convex surface concentric with its axis of vibration. The concave surface of the bed B is also about concentric with the shaft H, and hence the working surfaces of the presser and bed will be about parallel. I prefer to make the surface of the presser corrugated, of sheet-zinc or other metal, as shown at *j*, but it may be of india-rubber, wood, or other material, if preferred.

The boxes or bearings G G are held down by springs K K, of rubber, metal, wood, or other material, and set-screws L L, so as to exert an elastic pressure, which may be regulated as required.

A crank-shaft, M, mounted in standards N N, imparts a vibratory motion to the presser J through the medium of a connecting-rod, O, the wrist on which it works having a radial adjustment in the crank-wheel M′ to regulate the length of stroke. The other end of the connecting-rod has a deep notch or recess engaging over a pin, *i*, on one of the arms I, so that it may be detached at will.

S represents a hat-body in course of being sized or fulled, and T a towel or "scalding-cloth" in which it is wrapped.

Operation: The hat-body having been scalded or steamed and then rolled in the scalding-cloth in the usual way, the roll is introduced beneath the presser with the cloth partially unrolled. A reciprocating motion being then imparted to the presser J in the manner already explained, a rolling and pressing action will be exerted on the hat-body, causing its fibers to become interlocked and condensed, as in other fulling processes.

By lifting off the connecting-rod at any time the swinging presser may be allowed to remain in any position, and the work inserted, removed, arranged, or adjusted as desired.

The machine may be run by any power or by hand. By its means the same effect is produced on the hat-bodies as in the usual hand process, and with much greater ease and expedition, and with better effect. Several rolls may be treated at one and the same time by a single operative, and in this way the time and labor of several men may be saved.

For some classes of work a smooth rubbing-surface will be found more desirable; but for others the corrugated surface here represented is much preferable.

I claim as my invention—

1. The machine for sizing and fulling hat-bodies, constructed as herein described, with the concave bed B, adjusting-supports C, and swinging presser J, with yielding and adjustable bearings, all substantially as set forth.

2. The inclined supports C C and the lever E, or other equivalent device for adjusting the same, for supporting the bed B at any height.

GEORGE A. MANDEVILLE.

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