

1,025,711.

3 SHEETS—SHEET 1.

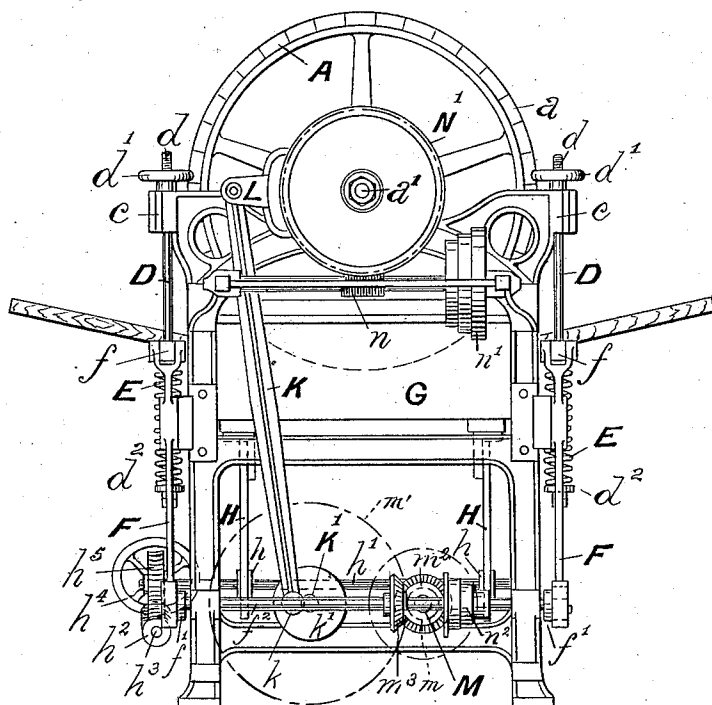


FIG. 1.

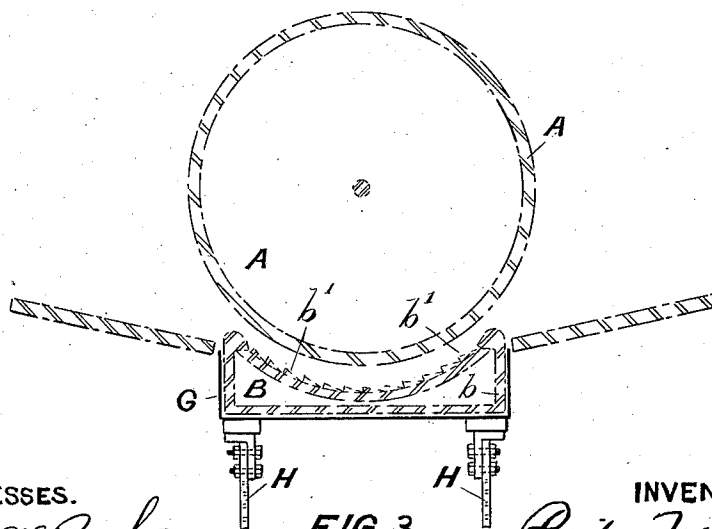


FIG. 3.

WITNESSES.

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E. B. McBath
L. M. Brooke.

INVENTOR:

Pietro Nebbia
 by Chas. E. Brock
 atty

P. NEBBIA.
MACHINE FOR PLANKING FELT HAT BODIES.
APPLICATION FILED MAY 17, 1909.

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Patented May 7, 1912.

3 SHEETS-SHEET 2.

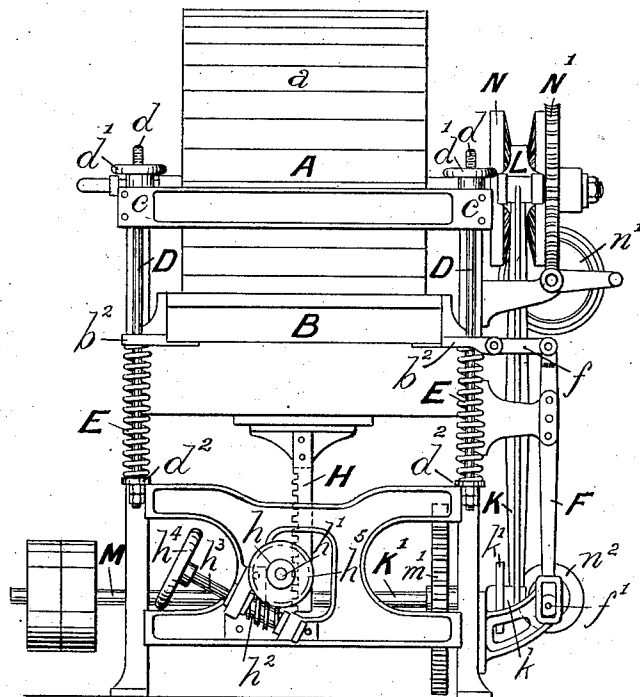


FIG. 2.

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E. B. McBath
L. M. Brooke

INVENTOR.

Pietro Nebbia
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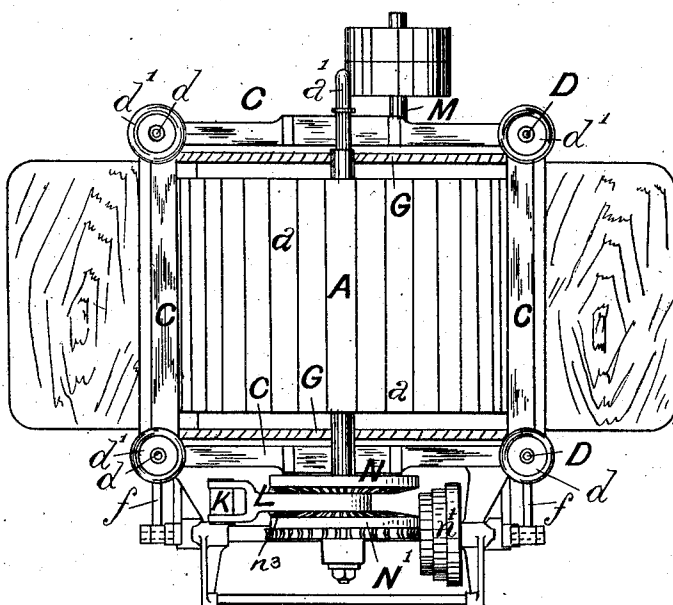


FIG. 4

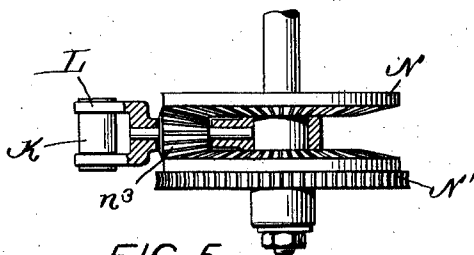


FIG. 5.

WITNESSES.

E. B. McBath
L. M. Brooke

INVENTOR.

Pietro Nebbia
by Chas. E. Brock

UNITED STATES PATENT OFFICE.

PIETRO NEBBIA, OF MILAN, ITALY.

MACHINE FOR PLANKING FELT HAT-BODIES.

1,025,711.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed May 17, 1909. Serial No. 496,578.

To all whom it may concern:

Be it known that I, PIETRO NEBBIA, subject of the King of Italy, residing at Milan, in the Kingdom of Italy, have invented certain new and useful Improvements in Machines for Planking Felt Hat-Bodies, of which the following is a specification.

This invention relates to that class of planking machine in which a drum or cylinder rotates in or over a curved spring supported bed or surface immersed in a trough of boiling water between which and the drum the hat body is placed.

The improvements are designed to provide a machine in which is produced an imitation of the oscillating movement of the hand planker, together with a reciprocating movement at right angles to the direction of travel, a regulated elastic pressure and a continual immersion of the hat bodies in boiling water while rolled around a rod or pin of wood or rubber or enveloped in a cloth or other material in the usual way.

This invention consists in the novel features of construction hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a side elevation of a hat planking machine. Fig. 2 is an end elevation of the said machine. Fig. 3 is a transverse section taken through the planking drum, bed and water trough, the parts being broken away. Fig. 4 is a plan view of the device. Fig. 5 is a sectional plan view illustrating the connection between two bevel gears.

The planking drum A is constructed in the usual way with a covering of laths or lags *a* of wood and is mounted upon a shaft *a'* and below the drum is placed the planking bed B, constructed with a frame *b* of cast iron and strips or lags *b'* of wood or bronze affixed thereto. The planking drum is mounted in suitable bearings upon the frame C which is also provided at each corner with support *c* for supporting screws *d* carried by rods D which depend therefrom. The supporting rods D pass loosely through the supports *c* and each screw *d* carries a hand nut *d'* (preferably in the form of a wheel) by which the rod can be raised and lowered and the position adjusted. At their lower ends the rods are each furnished with a collar or washer *d''* upon which rests the lower end of a spring E. As will be seen from the drawings there are four adjustable supporting rods D—one

at each corner of the machine—and four springs E and upon these four springs the planking bed B rests being supported by lugs *b''*—one at each corner. The planking bed B has thus an adjustable elastic support and is also free to swing horizontally in any direction.

A reciprocating horizontal vibratory movement is imparted to the planking bed B by rocking levers F connected to it by links *f* actuated by a cam or eccentric *f'* on the shaft *f''*. The horizontal movement imparted to the planking bed is at right angles to the direction of rotation of the planking drum A though it is also free to swing to a limited extent in any direction that is either parallel to or transverse to the axis of the planking drum. The distance between the planking drum A and the planking bed B is set and adjusted by the screws *d* and hand nuts or wheels *d'* and the springs provide an elastic or yielding pressure at any point over the surface of the planking bed upon the hat bodies which are placed between it and the drum A. The planking bed B is set in a tank G with a lead or copper lining and is immersed in boiling water which is contained therein so that the hat bodies are worked continually in boiling water.

The tank G is supported by racks H which gear with rack wheels *h* on the shaft *h'*. The shaft *h'* is rotated to raise and lower the tank by a worm *h''* on the shaft *h'''* gearing with the worm wheel *h''''* and operated by a hand wheel *h'''''* also on the shaft *h'''*. The water in the tank G is heated by means of a steam pipe and inlet and outlet pipes are placed in convenient positions but are not shown in the drawings.

The planking drum A is oscillated intermittently in its bearings to plank or full the hat bodies placed between it and the planking bed B by a rocking lever K operated by a crank pin *k* carried by a disk *k'* on the shaft K'. The shaft K' is driven from the driving shaft M by the pinion *m* of 14 teeth gearing with the pinion *m'* of 84 teeth. The lever K is pivoted at its upper end to an arm L which is pivoted free on the shaft *a'* of the planking cylinder A or on the hub of the wheel N of 48 teeth fixed on the shaft *a'*. The wheel N is a bevel gear wheel and on the same shaft and adjacent to it is loosely mounted a combined bevel gear and worm wheel N' loose on the

shaft. The arm L swings or works between these two wheels and carries a loosely mounted pinion n^3 adapted to engage the bevel gear teeth of the wheels N and N' and transmit motion from one to the other, as will be hereafter described. The worm wheel N' is driven by a worm n in turn driven from the shaft f^2 by means of a belt, (not shown) which runs over pulleys n' and n^2 . The shaft f^2 is driven from the shaft M by means of bevel gear wheels m^2 and m^3 . When the wheel N' is stationary the alternate movement given by the lever K to the arm L will be transmitted to the wheel N by means of the pinion n^3 , by means of the resistance presented by the teeth of the bevel gear portion of N'. The extent of rotation of the wheel N will be equal to the distance over run by the arm L, therefore an alternating movement equal in both directions will be produced. But if the wheel N' is also turning and its direction of rotation is that of the lever, the extent of rotation of the wheel N will be less than when the wheel N' was stationary, and will be equal to the difference between the distance covered by the arm L and that over run by the wheel N'. If the movement of the lever is reversed, *i. e.* when its movement is in a direction opposite to that of rotation of the wheel N', the extent of rotation of wheel N will be increased, being equal to the sum of the distances covered by the arm L and the wheel N'. If therefore alternate movement is imparted to the arm L the cylinder A, which is fixed on the same shaft as the wheel N will cover a greater distance forward than backward, advancing the felts from five to ten inches on each forward movement or oscillation, and moving them backward from two to five inches. This movement is continued during the entire travel of the body through the machine, and is independent of the reciprocating movement of the planking bed B.

What I claim as my invention and desire to protect by Letters Patent is:—

1. In a machine of the kind described, a frame, depending suspending rods arranged at the corners of the frame, a bed arranged within the frame and yieldingly supported upon the depending suspending rods, said suspending rods being loosely supported at their upper ends whereby said bed can have a limited movement in all directions, a cylinder mounted in the frame above the bed and means for rotating said cylinder first in one direction and then in the reverse direction, the reverse movement being less than the first mentioned movement of said cylinder, together with means for simultaneously reciprocating the bed, the line of reciprocation of the bed being parallel to the axis of the cylinder.

2. In a machine of the kind described, a frame, depending suspending rods arranged at each corner of said frame, said rods being loosely mounted at their upper ends and capable of adjustment, a bed arranged within the frame, said bed being yieldingly supported at its corners and upon the depending suspending rods, a cylinder mounted within the frame above the bed and in close proximity thereto, means for rotating said cylinder alternately in opposite directions, the first movement of said cylinder being greater than the reverse movement whereby a complete rotation is ultimately accomplished, means for reciprocating said spring supported bed simultaneously with the oscillating movement of the cylinder, the line of reciprocation of said bed being parallel to the axis of the cylinder.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PIETRO NEBBIA.

Witnesses:

I. OWDEN O'BRIEN,
HARRY BARNEFATHER.