Blocking Machine: A machine in which the crude cone-shaped hat-body is brought to shape.

The operation consists in pulling out the edge to develop the brim, and widening out the upper part to form the tip and side crown.

It is necessary, in order to stretch the hat, to soften the felt in boiling hot water, and the handling is exceedingly difficult.

The first machine for the purpose was invented by D. Beard, of Guilford, N. C., and patented May 26, 1835. It was a block made of a number of pieces hinged at their lower ends to a bench and spread from the center by a treadle while the hat body was held on the block by the operator. This was the only invention in this part of the hat manufacturing until that of W. A. Fenn, of Danbury, Conn., patented April 21, 1857.

In Fenn's machine, two pairs of conical rollers were put into a frame so arranged that the upper pair could be pressed upon the lower one. The forward pair of these rollers revolved at a slightly faster speed than the other pair, and kinds of work is now almost exclusively used in the hat factories of this country. The machine illustrated in Fig. 335 represents a stretcher now in use in the wool hat factories. A ribbed and recessed former is mounted upon an upright spindle, which receives motion through a walking beam and connecting-rod from the crankshaft. Upon the cast-iron side frame the head of the machine is supported; in this head the stretching devices are suspended. The details are more clear in some respects in the sectional view, Fig. 337.

A series of levers, L, corresponding in number with the recesses in the upper part of the former, B, is suspended upon bearings held in position by a plate, H, upon which a rubber spring, G, is pressed by a screw-wheel, G₂. In the lower ends of the forked levers smooth rounded rollers have their bearings.

Another series of rollers, M, with levers, N, and corresponding in number with the ribs in the lower part of the former, is also suspended from this head, and these latter levers are adjustable by a hand-wheel, F, nearer to or farther from the center of the machine, as shown in dotted lines on one side of the sectional view.

A hat body properly wetted with hot water, or by steam, is placed upon the former while the machine is in motion. The former moving upward brings the hat body in contact with these rollers which enter the recesses between the ribs of the former, and the hat body is thus readily stretched. Five or six upward motions are required to develop the tip and brim fully, the operator shifting the hat body around the center every time the former is at its lowest position, to present other parts of the hat body for contact. The hat having been stretched, it now remains to make what is called in the trade the band, namely, the sharp angle formed by the junction of the brim and side-crown.

This operation is performed on the blocking machine, of which Fig. 337 is a perspective view, while in Figs. 339, 340,
and 340 the action of the machine upon the hat is illustrated.
The machine consists of a frame, in which an upright slid-
ing-spindle is centrally mounted. Upon this spindle, which is ope-
rated from the crank-
shaft by the walking-
beam, is the block d
(Fig. 328, etc.), upon
which the hat to be
drawn is placed. A
supporting plate, e,
which receives motion
through two rods from
a lever, f, from the ad-
justable crank on the
side of the machine,
receives the hat. When
the plate e is raised, a
plate, f, which rests
upon brackets on the
frame, clamps the hat
brim, and the two, con-
tinuing to move up,
draw the hat body over
the banding shell h.
The block-carrier i,
with the block d, has
in the mean time also moved up to position shown in Fig.
328.


Fig. 328.
The clamping plates e / now commence to de-
send, while the block d continues to move up,
and enters the banding shell, drawing the side-
crown over the round edge of the shell h, as
seen in Fig. 329.
These motions continue until the plate e / rest
upon the flange of the block-carrier i, and the
hat is drawn perfectly smooth upon the block
d, as shown in the last of the sectional diagrams,
Fig. 340.
The spindle now begins
to move down, when the clamping-plate / is left
upon the brackets of the
frame, the hat and block
repeated on the next hat.

Banding Machine. Second Posi-
tion.

Fig. 329.

Banding Machine. Third Posi-
tion.

Fig. 340.

are removed, and the operation
With the use of the stretcher, Fig. 327, and one of the block-
are here described, 20
dozen of wool hats can
be stretched and blocked
ever hour by two opera-
tors.
To adopt the principle of stretching by corrup-
tation to fur hats, a num-
ber of modifications were
required. It was found
advantageous to separate
the trim-stretcher from
the trim-stretcher, and to
substitute round-edged
bars for the round-edged
rollers.
S e e H R I M - S T R E T C H E R S,
T I P - S T R E T C H E R S.
F o r t h e f i n i s h-
blocking, see H A T - S H A P I N G
MACHINE.