

# JOHN C. MAYALL.

## CARPET LINING MACHINE.

116467

FIG. 9.

FIG. 1.

PATENTED JUN 27 1871

FIG. 8.

FIG. 2.

FIG. 6.

FIG. 5.

FIG. 3.

FIG. 4.

FIG. 7.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MACHINES FOR FOLDING CARPET-LININGS.

Specification forming part of Letters Patent No. 116,467, dated June 27, 1871.

*To all whom it may concern:*

Be it known that I, JOHN C. MAYALL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Underlinings for Carpets; and that the following is a full and exact description of the same, reference being had to the accompanying drawing forming a part hereof.

This invention relates to a machine for the manufacture of an underlining for carpets, or what is commonly called "carpet-lining," for which I have already made application for Letters Patent of the United States. This invention consists of a table, along and over which, from end to end, the paper sheet, with the batting, is dragged, and of a core or former tapering from end to end, which core is disposed above the said table, and is constructed and provided with a series and system of rollers to seize and pull upon the edges of the paper sheet, and to thereby produce a folding over of the paper sheet upon the batting, inclosing it therein, as desired.

In the accompanying drawing my improvements in making carpet-lining are illustrated—Figure 1 being a plan or top view of a machine arranged according thereto; Fig. 2, a central longitudinal vertical section; Figs. 3 and 4, transverse vertical sections in planes of lines *xx* and *yy*, respectively; Figs. 5, 6, and 7, views in detail of the arrangement of the rollers for seizing the paper sheet and folding it over; Fig. 8, a view in detail of a pasting-roller; Fig. 9, a view in cross-section of the underlining.

A in the drawing represents a frame-work, consisting of longitudinal beams B, braced by cross-beams C, and provided with posts D at suitable points, carrying and supporting a table or platform, E. Along the sides F of this table E are arranged posts G, supporting and carrying an upper frame-work, H, from which, by stanchions I at suitable points, is suspended a frame, J, just above the upper surface of table E, and extending horizontally along the length of the same. This frame J is the center core or former of the machine, and is constructed upon each edge *a* of a similar taper, slightly concaving, from end to end, (see Fig. 1,) with its end K, where the paper enters thereon, the wider. The edges *a* of the core-frame J are both provided along their length with a flange, *b*, projecting

downward; and at various points along the length of the core-frame J there are arranged rolls *c* within the thickness of the frame, but projecting slightly above the upper surface thereof. These rolls *c* are, by their journals, arranged to turn in bearings of plates *d*, constructed with a circular or arc-shaped slot, *f*, through which, by screws *g*, the plates *d* are secured to and within the core-frame J. By this arrangement and construction of the bearings *d* for the rolls *c* it is obvious that the rolls are rendered susceptible of adjustment and "set" in the former-frame J, as, for instance, to stand at right angles to the center line of the former J, or at an acute angle, more or less great, with the inner end of the roll in the rear—that is, the nearer to the end K at which the paper enters the former, or vice versa; it being found, however, the most advisable to have them stand as shown in the drawing—that is, with the outer end in the advance. The rolls *c*, as shown in the drawing, are six in number—three upon each side of the center line of the former, and in planes directly opposite to each other; and the several sets are arranged, respectively, at different distances from the center line of the former, with the two of each set, however, equally distant, as is plainly shown in the drawing, Figs. 1, 2, and 4, more particularly. Corresponding to each roll *c* a similar roll, *h*, is suspended from the upper frame-work H. The rolls *h* in each instance are suspended within and between the bifurcated ends *i* of stanchions L, secured by their screw-bolts *k* and nuts *l* in the cross-pieces M of upper frame-work H. The journals of the rolls *h* are hung within stems *m*, arranged to have an upward-and-downward play within the upright sockets of bifurcated ends *i*, so that the rolls *h*, when in position, can rest upon the roll *c* corresponding thereto arranged within the former J. (See Figs. 2, 3, and 4 more particularly.) For a complete illustration of the hanging of the two rolls *c* *h* for each set, see Figs. 5, 6, and 7. The stanchions L are in two parts, secured together by slot and set-screw, (see Fig. 5,) so as to allow their length to be increased or decreased, as may be required. By loosening the nuts *l* the stanchions L are susceptible of being turned to adjust the angle of the roll carried by them with reference to the center line of the former J, and to correspond with the plane of adjustment of the rolls *c* in former J. N is a



roll of paper, placed at the end K of the machine, and T a roller arranged to turn within a paste-tank, O, a roll, P, resting upon its upper side. Between the two rolls T and P the paper from the paper roll N is conducted, and thence up around and over the upper side of the roll P to and along the table, under the former J, out at the end Q of the machine, between rolls R R arranged thereat. By the roll T paste from the tank is transferred to the paper along its center, whereon the lap or bat is to lie; and for the purpose of depositing the paste on the paper in spots, in lieu of a sheet form, the roll T is conducted with depressions *p*, and a stationary scraper is arranged to scrape from the raised portions of the roll T the paste thereon, leaving the paste in the depressions *p*, from which it is transferred to the paper by the pressure of the roll P on the paper sheet, which, as before stated, passes between the roll P and the paste-roll T. In disposing the paper sheet on the table E its edges are laid between the series of rolls described, so that bringing tension and power to bear through the rolls R or otherwise sufficient to draw the paper along by means of rolls *c* and *h*, an additional tension is brought on the paper edges, drawing them in, and thus producing a folding over of the same upon the former J to a greater or less extent, according to the width of the paper sheet used, and, if sufficiently wide, overlapping them, so that when the paper sheet escapes from the machine it will be doubled upon itself. *t* is a spindle or rod, suspended across the machine at the end K. On this spindle *t* is wound a previously-prepared continuous sheet-bat or lap, V, composed preferably of loose fibrous materials, such as cotton; but it might be of material felted. This bat or lap V is conducted from the spindle *t* to and upon the paper sheet at the point, or near thereto, where it commences to pass upon the table E, and as such paper is prepared with paste it adheres thereto and passes along and in conjunction with the paper sheet. As the former J is provided with downward-projecting flanges, sufficient space is left for the lap or bat placed on the paper sheet as it enters the machine, which bat, provided its width relative

to the width of the paper is proper, by the operation of the machine above described will be inclosed within the folded paper sheet. In lieu of preparing a lap and placing it in the machine, as described, a machine, such as is known as a cotton-lapper, may be arranged to work in conjunction with the lining-machine, and, being placed in suitable position at the end K, can cause a direct continuous delivery of the lap upon the paper sheet at the point stated for the prepared lap. The overlapping edges of the paper sheet may be secured together by pasting, or by stitching through the whole thickness of the paper sheet and bat, or they may be left loose; but it is best to seal them in some manner. And, furthermore, in lieu of securing the bat to the paper sheet by pasting, it may be secured by stitching, or left loose thereon. In the practical manufacture of the lining no means of fastening the same to the paper sheet are employed, and a machine substantially such as herein described is found to work practically and successfully in producing a progressive complete inclosure of a bat within a paper sheet in the joint passage of the paper sheet and bat or lap-sheet from one end of the machine to the other.

It may be well to here observe that it is not intended to be limited to six sets of rolls, *c h*, as their number depends, in a great measure, upon the width of paper to be folded. The table E may be variously constructed to obviate friction on the paper drawn over it, as, for instance, constructed with frictional rolls, and the same remark will apply to the former J.

Having thus described my invention, I shall state my claim, as follows:

The combination of table E with the former J, having rolls *c* and rolls *h* relatively constructed and arranged for operation, substantially as and for the purpose set forth.

The above specification of my invention signed by me this 1st day of November, 1870.

JOHN C. MAYALL.

Witnesses:

EDWIN W. BROWN,  
ALBERT W. BROWN.