

H. M. SMALL.
Machinery for Making Pads for Carpets.
No. 224,053. Patented Feb. 3, 1880.

Fig. 1.

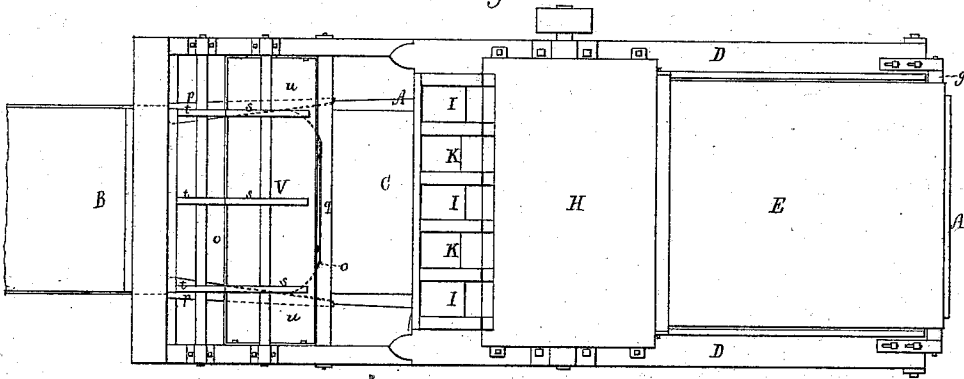


Fig. 2.

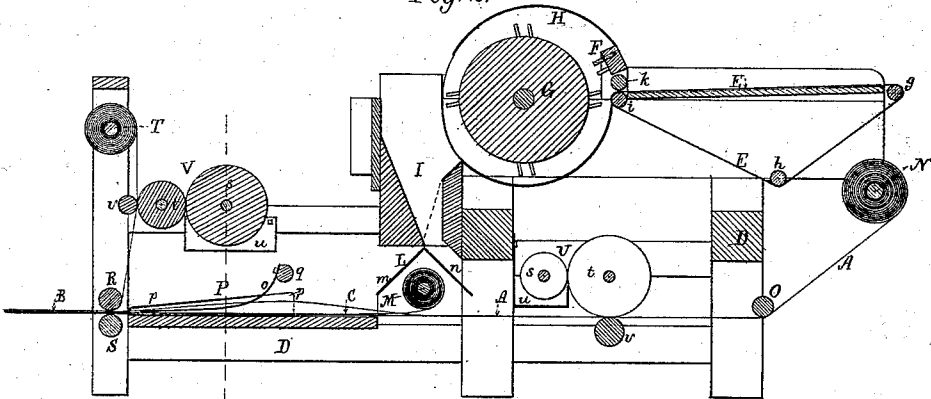


Fig. 5.

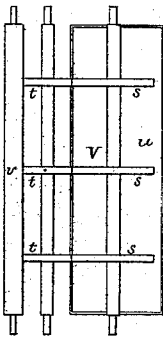


Fig. 6.

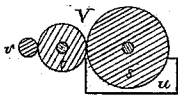


Fig. 3.

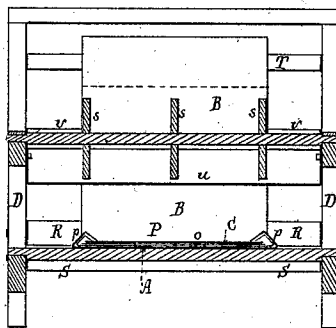


Fig. 4.



Fig. 7.

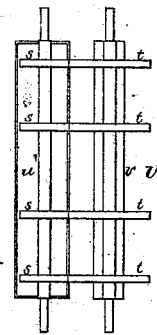
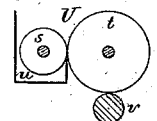


Fig. 8.



Witnesses.
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HERBERT M. SMALL, OF BALDWINSVILLE, MASSACHUSETTS.

MACHINERY FOR MAKING PADS FOR CARPETS.

SPECIFICATION forming part of Letters Patent No. 224,053, dated February 3, 1880.

Application filed December 13, 1879.

To all whom it may concern:

Be it known that I, HERBERT M. SMALL, of Baldwinsville, of the town of Templeton, of the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machinery for Making Pads for Carpets; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a longitudinal section, and Fig. 3 a transverse section, of a machine embodying my invention. Fig. 4 is a transverse section of the carpet-pad manufactured by the said machine, such pad being composed of three layers, A B C, of paper or other suitable material, one of which, C, is between the others, A B, and connected thereto alternately by paste or cement, as shown at *a b c d e*, so as to form between the two outer layers, A B, a series of insulated pockets P, or receptacles for holding the padding *f* of excelsior or other suitable material. Near its opposite edges the broadest or outer layer, A, is folded in and extended between the other layers and cemented to them.

The article or pad shown by Fig. 4 constitutes the subject of the United States Patent No. 222,605, dated December 16, 1879, and granted to me.

In the drawings of the machine, D denotes the frame thereof, having within it an endless delivery-apron, E, extending around and upon three rollers, *g h i*. Over the inner roller, *i*, is a feed-roller, *k*, over and in advance of which is a comb or hackle, F. In front of the delivery-apron and the said hackle F is a rotary picker or toothed cylinder, G, whose teeth, as it revolves, run between those of the hackle. Over this cylinder is a housing or cover, H, and in front of the cylinder is a series of vertical passages, I K. Extending underneath these latter is a duplex or angular chute, L, within which is a roller, M, on which is wound the intermediate sheet of paper, C, which extends therefrom directly over the lower or widest sheet, A.

The passages I K discharge or open alternately over the two inclined planes *m n* of the duplex chute—that is to say, while every other of the passages opens at bottom directly

over the forward plane, *m*, the others, or intermediate ones, open over the rear plane, *n*. All the said passages open at their upper parts in front of the picker-cylinder, in order for it, while revolving, to throw and force into them the fibrous material which, by the said passages, becomes separated into masses, part of which, by the plane *m*, are deflected upon the inner sheet, C, of paper, and the rest by the plane *n* upon the lower sheet, A.

The said sheet A proceeds from a roller, N, arranged at the rear part of the frame, and after passing under a guide-roller, O, is led under the duplex chute and the sheet C and into the folder P, and thence between two draft and pressure rolls, R S, arranged in advance of the folder. Above the said rolls R S is a roller, T, about which the sheet B is wound, such sheet being led from such roller T down to the sheets A C, and with them into the bite of the rollers R S.

The folder P consists of two metallic sheets, *o p*, the lower of which, *p*, is bent up near its two opposite edges, as shown, and over the upper sheet, *o*, which, at its rear edge, is fixed to a stationary cross-bar, *q*, arranged as shown.

The folder is to fold the lower sheet, A, at its opposite edges, over and down upon the sheet C.

Furthermore, the machine has suitable means or devices for applying paste or cement to the upper and lower sheets, in order to paste each of them at intervals to the middle sheet, and also to paste the three sheets together at their ends, where they are lapped on each other. To this end there is arranged within the frame and over the lower sheet, A, a suitable apparatus, U, for striping with paste the sheet while it may be advancing, the stripes being laid on the sheet at its edges and at suitable intervals apart between them. There is also properly arranged with the carrying-roll of the sheet B a suitable pasting apparatus, V, to apply to the rear side of such sheet the paste in stripes both at its opposite edges and between such, each of the intermediate stripes of the upper sheet being arranged to come between two of those of the lower sheet when both sheets are pasted to the intermediate sheet, C.

Fig. 5 is a top view, and Fig. 6 a transverse

section, of a pasting apparatus for the upper sheet, while Fig. 7 is a top view, and Fig. 8 a transverse section, of one for the lower sheet.

In the said Figs. 5, 6, 7, and 8, *t t* are the wheels for applying the paste to the sheets A B, *s s* being wheels inserted in troughs *u u*, and being for applying paste to the peripheries of the pasting-wheels. *v v* are rollers for supporting the sheets against their pasting-wheels. Each set of the wheels is mounted on a shaft supposed to revolve freely in suitable boxes. The pasting-wheels for each sheet revolve against the sheet as it passes along, and they revolve their wheels for supplying them with paste, so that by means of such pasting mechanism the two sheets become properly striped with paste.

In using the machine the fibrous stuffing of the pad is to be laid on the endless feeding-apron, which, with the toothed cylinder and the delivery-rollers, are to be supposed to have suitable mechanism for putting them in revolution or movement, as may be required. By the toothed cylinder the stuffing material will be seized and drawn through the hackle, and will be combed thereby, and discharged by the cylinder into the vertical passages leading to the duplex chute. Parts of it, in parallel layers, will be delivered upon the lower sheet, A, of paper, and the rest, in like manner, upon the sheet C, and with such sheets will be carried through the folder, which, in turn, will operate to fold the lower sheet, near its edges, upward and over and upon the sheet C. In passing between the delivery-rollers the sheet A will be pasted to the sheet C at its edges and between such, the intermediate pastings being between the ranges of fibrous material laid between the said sheets A and C. The sheet B will also be pasted to the laps of the sheet A, and also to the sheet C between the ranges of fibrous material laid thereon.

When it may not be desirable to fold the edges of the lower sheet up over those of the middle sheet the folder may be dispensed with.

What I claim as my invention is as follows:

1. The combination of the duplex chute L and the series of passages I K, arranged to alternately open upon its opposite inclined planes *m n*, as set forth.

2. The combination of the delivery-cylinder G with the duplex chute L and the series of passages I K, leading, as described, to its inclined planes.

3. The combination of the delivery-cylinder G and the hackle F, the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

4. The combination of the endless feeding-apron E, the toothed cylinder G, the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

5. The combination of the endless feeding-apron E, the hackle F, the toothed cylinder G,

the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

6. The combination of the folder P, the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

7. The combination of the delivery-rolls R S, the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

8. The combination of the delivery-rolls R S, the folder P, the duplex chute L, and the series of passages I K, leading to the latter, in manner described.

9. The combination of the three sheet-supporting rolls or beams M N T, the delivery-rolls R S, the duplex chute L, the series of passages I K, and mechanism for feeding or delivering the fibrous stuffing into such passages.

10. The combination of the three sheet-supporting rolls or beams M N T, the delivery-rolls R S, the folder P, the duplex chute L, the series of passages I K, and mechanism for feeding or delivering the fibrous stuffing into such passages, as set forth.

11. The combination of the three supporting rolls or beams M N T, the delivery-rolls R S, the duplex chute L, the series of passages I K, the toothed cylinder G, the hackle F, and the endless feeding-apron E, all being arranged and to operate substantially as described.

12. The combination of the three sheet-supporting rolls M N T, the delivery-rolls R S, the folder P, the duplex chute L, the series of passages I K, the toothed cylinder G, the hackle F, and the endless feeding-apron E, all being arranged and to operate substantially as described, when provided with means for applying paste or stuffing to the outer sheets of the carpet-padding to be made.

13. The combination of the two sets U V of paste-striping mechanisms, the duplex chute L, the series of passages I K, and the delivery-rolls R S.

14. The combination of the two sets U V of pasting mechanisms, the duplex chute L, the series of passages I K, the folder P, and the delivery-rolls R S.

15. The combination of the two sets U V of pasting mechanisms, the duplex chute L, the series of passages I K, the delivery-rolls R S, and mechanism for delivery into such passages the fibrous material to be conveyed by them to the chute, in manner as described.

16. The combination of the two sets U V of pasting mechanisms, the duplex chute L, the series of passages I K, the folder P, the delivery-rolls R S, and mechanism for delivering into such passages the fibrous material to be conveyed by them to the chute, in manner as described.

17. The combination of the feeding-apron E, the delivery-cylinder G, two or more sheet-supporting rolls, M N T, the set of delivery-

rolls R S, and one or more conduits or passages to guide the fibrous material from the toothed cylinder to and upon the sheet or sheets to receive it.

passages to guide the fibrous material from the toothed cylinder to and upon the sheets to receive it.

HERBERT M. SMALL.

Witnesses:

R. H. EDDY,
W. W. LUNT.

5 18. The combination of the feeding-apron E, the hackle F, the delivery-cylinder G, two or more sheet-supporting rolls, M N T, the set of delivery-rolls R S, and one or more conduits or