(No Model.)

A. GIBB.

FOLDED PAPER FOR CARPET LINING, &c.

No. 379,571. Patented Mar. 20, 1888.

Fig 1

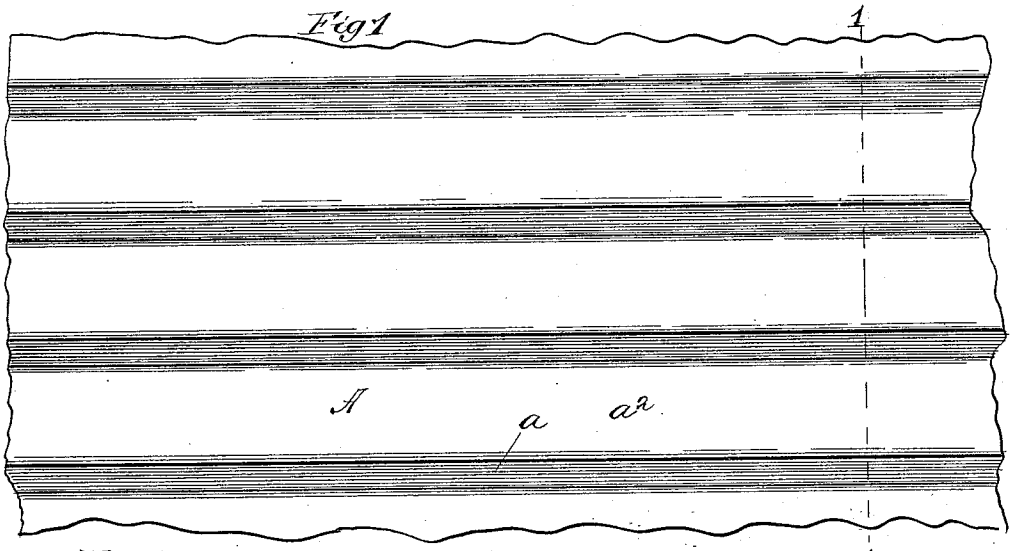


Fig 2

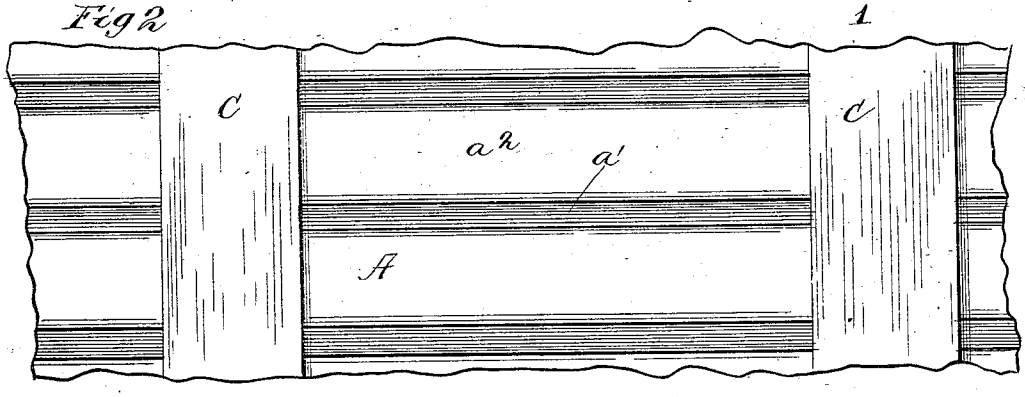
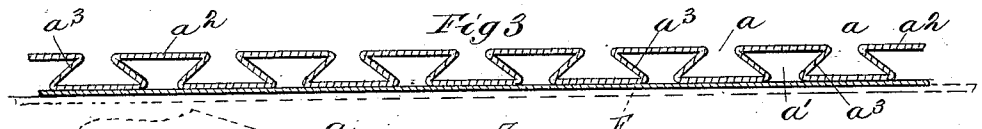


Fig 3



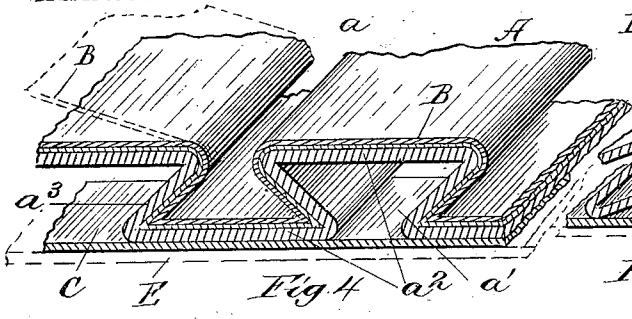


Fig 4

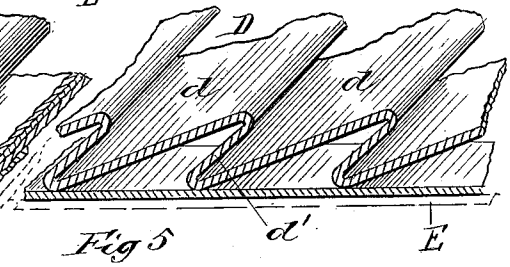


Fig 5

Witnesses
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UNITED STATES PATENT OFFICE.

AUSTIN GIBB, OF BELOIT, WISCONSIN.

FOLDED PAPER FOR CARPET-LINING, &c.

SPECIFICATION forming part of Letters Patent No. 379,571, dated March 20, 1888.

Application filed March 31, 1887. Serial No. 233,216. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN GIBB, a subject of the Queen of Great Britain, residing at Beloit, in the county of Rock and State of Wisconsin, have invented a certain new and useful Improvement in Folded Paper for Carpet-Lining and other Purposes, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan of a section of folded paper embodying my invention; Fig. 2, a bottom plan of the same with fastening-strip added; Fig. 3, a section of the same, taken on the line 1 1 of Fig. 1; Fig. 4, a detail perspective of the same on an enlarged scale; and Fig. 5, a similar perspective showing a modification in the folds, also on the same enlarged scale.

My invention relates to folded straw-board, paper felt, or other paper sufficiently stiff and heavy for carpet-lining and other purposes.

The object is to produce an article which will possess a certain amount of elasticity in a vertical direction, which quality will be retained by the nature of the folds. The improved paper, when used as a carpet-lining, will also effectually gather in its folds all dust which passes through the carpet, and may be provided with a thin lining or linings which can be easily stripped to remove, after wear, the dirt which has accumulated, leaving the main body for further use.

I will proceed to describe the construction and operation of my invention as I have carried it out in practical form, and will then point out definitely in claims the special improvements which I believe to be new and wish to protect by Letters Patent.

In the drawings, A represents a strip of straw-board or thick paper of any description. This strip is folded transversely by making creases or bends a and a' across the strip, one end being in an opposite direction to the other. The direction of the bends or folds is also alternated. Commencing at the right of the strip shown in Fig. 3 of the drawings, the first fold is to the right and downward and the second is to the left and downward. The next two folds are in the same direction; but it will be seen that thereby a right and left fold of each pair are brought opposite to each other, on one side the folds being turned outward from each other and on the other inward toward each other. It will be seen that there will be thus produced a folded strip the folds of which are so arranged as to produce a kind of box-plait.

Certain sections, a^2, of the paper will remain in a horizontal position, but facing on opposite sides of the sheet, and certain other sections, a^3, will stand between the horizontal sections and connect them together. These latter sections, in the folding process, are crimped or forced under the others, so that they stand in a position more or less inclined, as seen in Fig. 3 of the drawings. Preferably the sections or folds a^2 are considerably wider than the connecting sections or folds a^3. These folds are considerably elastic, so much so, in fact, that it is impossible to press the folded sheet down perfectly flat and have it retain this position. Owing to the inclination of the sections a^3, the folds may be pressed down upon each other; but as soon as relieved from pressure they will open more or less, thereby separating again the horizontal sections or folds a^2. I have submitted a web of paper-board thus folded to an enormous pressure under an exceedingly-heavy roller or a powerful press, and with the result that the folds would open, as described, as soon as the pressure was removed. Paper thus folded becomes, therefore, a very desirable carpet-lining, as it affords an elastic support to the carpet, thereby relieving the wear upon the latter, and also furnishing a soft elastic tread.

If it is desired to increase the elasticity of the lining under the carpet, two or more sheets of the folded paper may be used, one laid above the other.

In addition to the elasticity afforded for the carpet, as described above, the paper lining folded in this manner also provides large wide receptacles for the dust, which will almost all find its way into the spaces between each two of the upper plane surfaces. The carpet will therefore be kept cleaner than with ordinary lining. If at any time a carpet is taken up and the lining is not yet worn out, it may be relieved from the dust very easily by proper light shaking or by rolling up the lining and shaking from end of the roll. I have, however, devised a better way for effecting the

cleaning, which consists in providing one or more sheets, B, of very thin paper, which are laid upon the main lining A before folding, so as to be folded with the latter, as shown in Fig. 4 of the drawings. Now, if the lining is provided with one or more of these thin coverings, whenever the carpet is taken up the uppermost covering may be stripped off, thus leaving a perfectly-clean lining underneath, upon which the carpet may be relaid. I have shown in Fig. 4 of the drawings two thin covering-sheets, one of which is raised at one end, showing how it may be stripped off without destroying the layers underneath.

It may be desirable in some cases to hold the folds from any spreading, and to effect this narrow strips of paper, C, or other material may be pasted to the under side of the folded web, running lengthwise thereof. These strips may be used as desired, and arranged to suit the purpose required, and fastened to the main web in any suitable way. They may also be applied to the upper side of the lining, if desired, or to both sides if there should be any occasion for such use.

In order to produce this article of folded paper, I have found it necessary to devise a new machine, as I could find no machine for folding paper or other material which would produce the article described above. This new machine, however, does not constitute a part of the present invention, and need not be described in this connection. It will furnish the subject-matter for another application for patent.

The material which I have described and shown herein has been spoken of especially for use as a carpet-lining. It is particularly adapted to this use; but there are various applications which may be made of it, owing to its peculiar elasticity, which obviously is increased by arranging sheets in layers one upon another. I do not wish to be understood, therefore, as limiting this folded paper to carpet-lining, for I propose to apply it to various other purposes to which I may find it adapted.

In Fig. 5 of the drawings I have shown a modification in the folding by which the results which I have described above may be obtained in a measurable degree, but not to the full extent as when folded as already described. In this modification there is but a single bend, first in one direction and then in the other, something like an **S**. The sheet D shows no horizontal sections, but long inclines *d*, with short sections, *d'*, connecting each two of these and bent under slightly, so as to stand somewhat inclined from a perpendicular themselves. The paper folded in this way will have something of the elastic action of that shown in Figs. 3 and 4 of the drawings, but not to the same extent. In each of the Figs. 3, 4, and 5, E represents a flooring upon which the lining is laid.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A carpet-lining composed of a strip of paper-board, A, or other like material, bent or crimped, as described, to produce elastic folds, and one or more unattached and removable strips, B, of thinner paper, folded with the thick sheet A, but readily separable therefrom, substantially as and for the purposes specified.

2. In a carpet-lining, a strip of paper-board, A, or other like material, folded as described, in combination with one or more unattached sheets of thinner paper, B, folded therewith but readily detachable therefrom, and tying-strips C, secured to the back of the main strip A, substantially as and for the purposes specified.

AUSTIN GIBB.

Witnesses:
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WILLIAM H. WILLIAMS.