C. W. ARMSTRONG & R. A. TYRREL.

Multiplying Show-Cases for Exhibiting Carpets, &c.

No. 196,067. Patented Oct. 16, 1877.

Fig. 1.

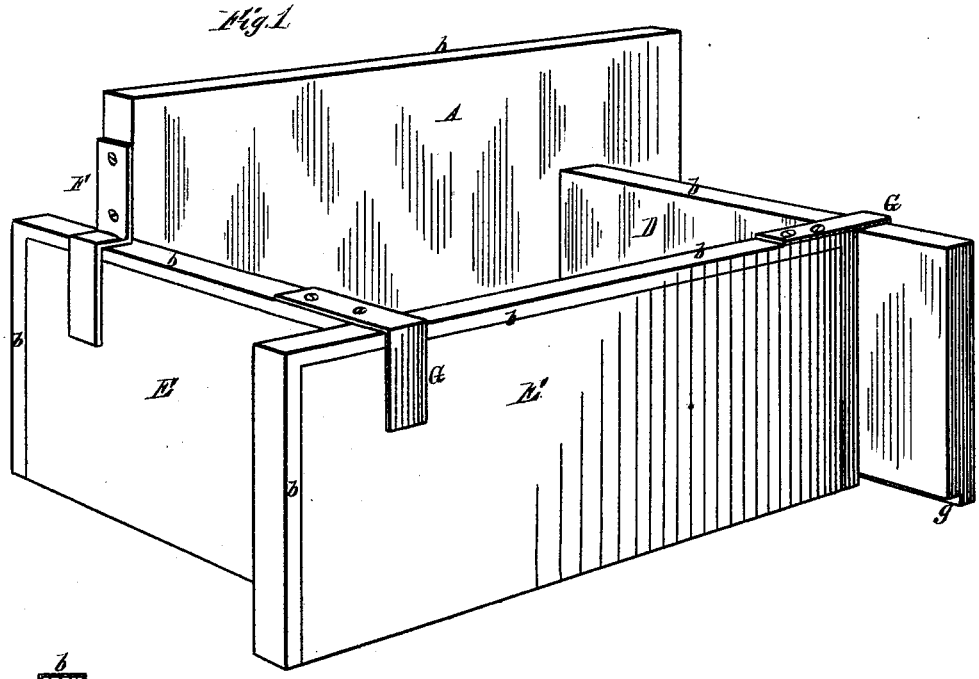
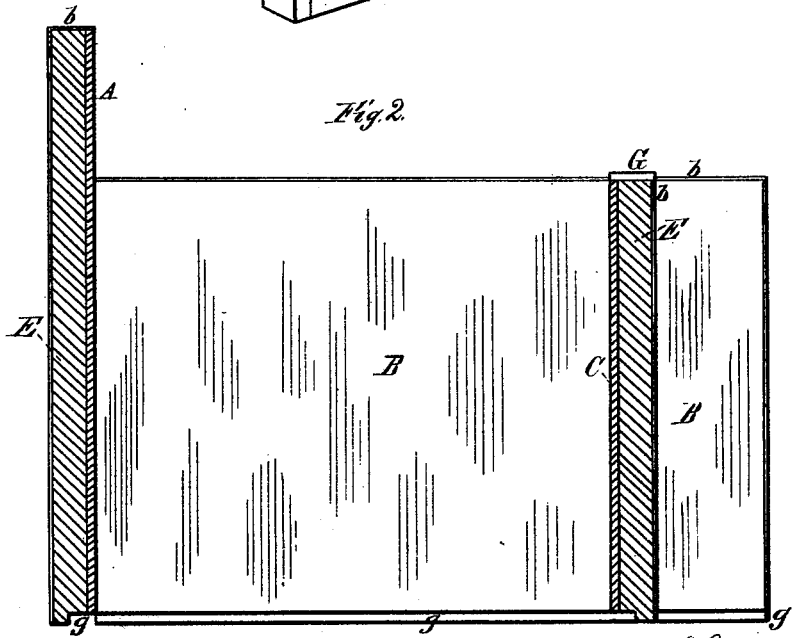


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES W. ARMSTRONG AND ROBERT A. TYRREL, OF DETROIT, MICHIGAN, ASSIGNORS, BY MESNE ASSIGNMENTS, TO SAID ARMSTRONG.

IMPROVEMENT IN MULTIPLYING SHOW-CASES FOR EXHIBITING CARPETS, &c.

Specification forming part of Letters Patent No. **196,067**, dated October 16, 1877; application filed July 23, 1877.

To all whom it may concern:

Be it known that we, CHARLES W. ARMSTRONG and ROBERT A. TYRREL, of Detroit, county of Wayne, and State of Michigan, have invented certain new and useful Improvements in Multiplying Show-Cases, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view of our improved device as it appears when composed of four mirrors assembled for use. Fig. 2 is a sectional view upon a plane at right angles to the higher mirror or reflector, exhibiting our several improvements in detail.

Like letters in both figures indicate corresponding parts.

Our invention has relation to that class of devices commonly known as "pattern-multipliers" or "multiplying show-cases," which are intended for exhibiting goods such as oil-cloths, wall-papers, carpets, and the like, so that samples of such goods containing a complete pattern may be many times multiplied, and thus give to the observer the appearance or effect of a whole piece matched together or covering an extended area; and it (the invention) consists in certain details of construction and arrangements of parts, as will be hereinafter first fully described, and then pointed out in the claims.

A, B, C, and D are, respectively, rectangular mirrors or reflectors, preferably of glass, of suitable dimensions, and each attached to a substantial back piece, E. When the multiplier is composed of four reflectors only, they are disposed at right angles to each other, as indicated in the drawing. One of these reflectors, as A, is extended above the others of the set, and so much higher than them as that the range of the observer's sight shall conveniently clear the top of the lower ones, and a good and perfect reflection be obtained of whatever article may be placed within the space inclosed by the several mirrors. The observer should station himself opposite the higher mirror, A, and at a point midway of its length. The portion of mirror A which projects above the tops of the other mirrors enables the observer to obtain a view of the multiplied reflections without interference by the pattern or object reflected, which would tend to obscure the general effect.

If the article being displayed should be the pattern of an oil-cloth, carpet, or wall-paper, the effect produced by the assemblage of reflectors would be practically the same as that of an extended area of such cloth, carpet, or paper; and if this article be smaller than the space inclosed, it (the article) would appear multiplied.

The back or frame E is preferably made of wood, and is as light as is consistent with the necessary strength and solidity of the structure. It is found most convenient, best, and cheapest to attach the reflectors to this back by cementing or gluing them thereto, affording thereby a perfect bearing for each point of the back of the reflector, and thus obviating any tendency to crack or become loosened, to which they are liable on account of the frequency with which they are handled. The cement, glue, or other adhesive substance should be spread evenly upon the back, and the glass be laid thereon and confined under moderate pressure until the union is effectually accomplished.

The reflectors being made of glass, their edges are rough when cut, and are liable to scratch the faces of the adjacent mirrors as well as to cut the hands of the operator. To protect or cover these edges we place a band, *b*, of cloth, paper, or leather, upon the top and each end of the frame E, extending the band inwardly as far as is necessary to overlap the edge of the glass, but not to cover any portion of the face thereof. Should it lap over the face of the mirror it would, obviously, destroy the continuity of the reflected pattern or reflection, giving the appearance of a divisional line across the top, bottom, and sides of each reflection. This band may also be extended slightly along the rear of the frame, as indicated, to give a neat and finished appearance to the device. Aside from these objects of the band *b*, it also serves the very useful purpose of preventing the connecting-hooks from injuring the top of the glass. It (the band) is glued or otherwise properly secured in posi-

tion. It may, if desired, be replaced by a narrow strip of metal; but this would add to the expense without increasing the utility of the contrivance.

Upon one end of the mirror and frame A E we attach a hook, F, of flat metal, which may be as broad as the combined thickness of the frame and mirror. This hook is placed so that its top shall be about as high as the top of the lower reflectors; and a space between it and its supporting-frame is left sufficient to receive the next frame and its mirror. Similar hooks G G are attached one to each end of the reflectors and backs B E and C E. D E is left without any hook. The hooks are rigidly secured in place by means of common screws or nails. By this arrangement the disadvantages attending the use of springs or spring-clamps for connecting the parts are obviated. With the springs, the multiplier cannot be readily adjusted to different sizes of patterns without danger of disarranging more than two of the reflectors; and the spring is liable to get out of order, besides being much more expensive to apply.

The better to protect the lower edges of the reflectors, and at the same time afford a means of concealing the ragged edges of the samples, we extend the backs E a trifle below the reflectors and cut a groove, *g*, in the material of the backs. The remaining portion of the wood forms a rest, upon which the multiplier may be sustained or moved about without danger to the glass.

The device is assembled for use as follows: The side A E is held in an upright position. B E is then placed under the hook F, C E under G. The remaining side, having no hook, is located under the one upon C E, and its end made to touch the face of the larger mirror. Of course, the faces of the mirrors are turned inwardly or toward each other; and it will appear from the location and arrangement of the hooks that the space inclosed may be readily diminished by simply adjusting the mirrors back and forth. The sample is placed upon the table, and the multiplier made to surround it, there being no bottom upon the device to interfere with the manipulation of its parts.

The simplicity of the completed device, its durable nature, and the cheapness with which it may be constructed, are features which, it is believed, will recommend it for use over any other form of multiplier now known to us.

We do not desire to be understood as laying any claim herein to the mere assemblage of a number of mirrors for the purpose of exhibiting patterns or goods in the manner hereinbefore set forth, as such devices have long been used; but

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a multiplier of the character herein specified, the combination, with three or more mirrors of about equal height, of the mirror A, extending above the tops of the others, as and for the purpose set forth.

2. In combination with the mirrors which form the sides of a pattern-multiplier, the sustaining backs or frames applied thereto and extending below the lower edges of said mirrors, to protect the same from injury, the backs or frames being recessed in the manner and for the purposes explained.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of two witnesses.

CHARLES W. ARMSTRONG.
ROBERT A. TYRREL.

Witnesses:
B. D. ANTHONY,
O. F. HALL.