March 1, 1927. 1,619,011

C. A. AGAR

SHIPPING MEMBER

Filed May 12, 1925

Fig. 1

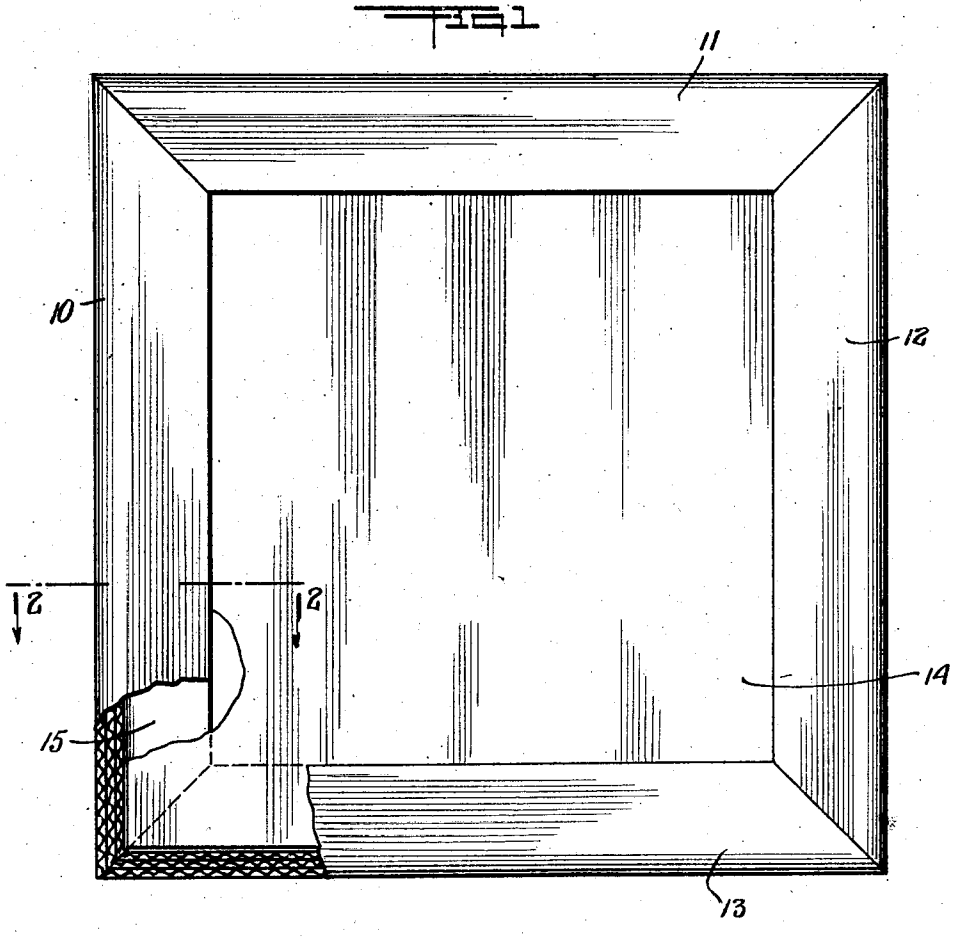
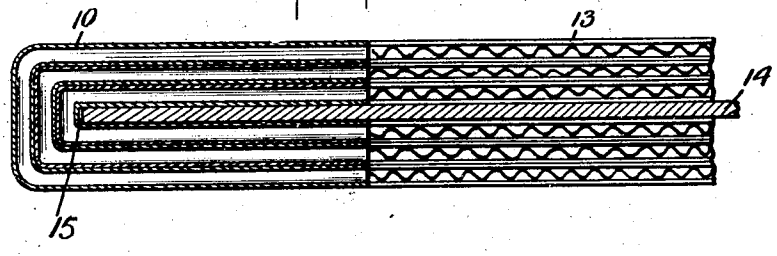


Fig. 2



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INVENTOR

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his ATTORNEYS

Patented Mar. 1, 1927. 1,619,011

UNITED STATES PATENT OFFICE.

CALVIN A. AGAR, OF WEST ORANGE, NEW JERSEY.

SHIPPING MEMBER.

Application filed May 12, 1925. Serial No. 29,667.

My invention relates to a new and improved shipping member or form.

One of the objects of my invention is to provide a shipping member which is especially adapted for shipping plates of fragile material.

Another object of my invention is to provide a shipping member made of a plurality of like parts which can be readily assembled.

Another object of my invention is to provide a shipping member which will be especially adapted for shipping panels of insulating material used in making radio receiving sets.

Other objects of my invention will be set forth in the following description and drawings, which show a preferred embodiment thereof, it being understood that the above general statement of the objects of my invention is to generally explain the same and not to limit it in any particular.

Fig. 1 is a top view, part of the device being shown broken away to more clearly illustrate the structure.

Fig. 2 is a section on the line 2—2 of Fig. 1.

The device is made up of four like members 10, 11, 12 and 13. Each said member has a U-shaped cross-section and it is provided with two inclined ends so that when the four members are assembled, they form a complete frame 15 for a panel 14, which can be held between them. The said panel 14 preferably fits tightly within the frame members so that a frictional grip is secured, and if desired, the frame members can be connected in any suitable manner.

Each said frame member consists of a plurality of alternate layers of corrugated board or paper and uncorrugated board or paper, each said layer of paper being bent along two substantially parallel longitudinal lines. Each layer of board or paper, both corrugated or uncorrugated, is continuous, hence the corrugations of the corrugated layers of paper are perpendicular to the longitudinal axis and fold lines of each frame member. The respective layers of paper can be scored or otherwise suitably treated so as to facilitate their bending into the shape shown in Fig. 2, for example.

The innermost layers of each said frame member may be corrugated or uncorrugated and the various layers of each said frame member are connected by glue or any other suitable means.

This construction provides very strong and resilient frame members which are particularly resilient or springy with respect to the longitudinal fold lines.

The individual layers of paper are bent into the shape shown in Fig. 2, and they are then assembled and glued together after they have been suitably shaped. The corrugated board of commerce consists of two outer sheets of smooth or uncorrugated paper having an intermediate sheet of corrugated paper which is glued or otherwise fastened to the said outer sheets. A piece of corrugated board of this type is so stiff that it cannot be rolled and must be handled in flat sheets. If it is attempted to score a piece of commercial corrugated board in order to bend it on a line perpendicular to the corrugations in the intermediate layer, then the scoring die cannot directly contact with the corrugations. This makes it very difficult to properly bend the board, and board of this type cannot be bent so as to form a sharp angle without flattening or breaking down the corrugations adjacent the bending line. However, the individual sheets of paper are flexible so that they can be rolled up and they can be individually scored so that they can be bent around sharp lines with minimum injury to the fibre of the paper. In particular, if the scoring die is applied directly to the corrugated paper, perpendicular to the corrugations thereof, the corrugated paper can be separately bent along a sharp line with little or no injury to the fibre of the paper.

Hence, a composite frame member composed of a series of alternate sheets of smooth paper and of corrugated paper, in which the layers or sheets of corrugated paper have been directly scored along lines perpendicular to their corrugations, is of maximum strength and in addition such a frame member can be given the normal shape shown in Fig. 2, for example. In Fig. 2 the corrugations have been shown as being omitted in the vertical leg of the member for the sake of clearness, but of course, the said corrugations are continued throughout and remain fully unbroken save where they have been scored along two parallel lines.

This construction provides a frame or form in which the article to be shipped is tightly gripped and is surrounded on all sides by a resilient frame composed of springy board.

While I have shown this device as being made of layers of corrugated board, I do not wish to exclude from the scope of my invention any other form of what may be called cellular board or paper, namely, board or paper so constructed as to have certain internal elasticity.

I have shown a preferred embodiment of my invention, but it is clear that numerous changes and omissions could be made without departing from its spirit.

Thus, a frame or container of any desired shape can be made by suitably bending a plurality of sheets of corrugated and uncorrugated cardboard, which are individually easily bendable, into a common predetermined shape of any contour, and then gluing or otherwise connecting said sheets so as to produce a resilient member having a definite normal contour. Containers or frames for objects of any shape can thus be provided.

I claim:—

1. A resilient frame member comprising a plurality of connected sheets of corrugated paper and of uncorrugated paper, the said sheets being bent around two parallel lines so that the transverse section of the said member is substantially U-shaped, the said lines being substantially perpendicular to the corrugations in the corrugated paper, the said corrugations being directly and independently scored along the said lines, the said member having a normal fixed shape, the corrugations of the corrugated paper being unbroken in the central leg of the said U-shaped member.

2. A resilient frame member comprising more than three connected sheets of corrugated paper and of uncorrugated paper, the outermost sheets of said member being composed of uncorrugated paper and the sheets of corrugated paper being alternately arranged intermediate the sheets of uncorrugated paper, the said sheets being bent around two parallel lines so that the transverse section of the said member is substantially U-shaped, the said lines being substantially perpendicular to the corrugations in the sheets of corrugated paper and the sheets of corrugated paper being directly and independently scored along said lines, the said member having a fixed normal shape, the corrugations of the corrugated paper being unbroken in the central leg of the said U-shaped member.

3. In the art of making a frame member having a plurality of sheets of corrugated paper and of uncorrugated paper, those steps which consist in directly and independently scoring the sheets of corrugated paper along two parallel lines substantially perpendicular to the said corrugations and then gluing the said sheets of paper to each other while the sheets of corrugated paper are arranged between sheets of uncorrugated paper so as to form a frame member having a substantially U-shaped transverse cross-section, the corrugations in the central leg of the said U-shaped member being maintained substantially unbroken.

In testimony whereof I affix my signature.

CALVIN A. AGAR.