

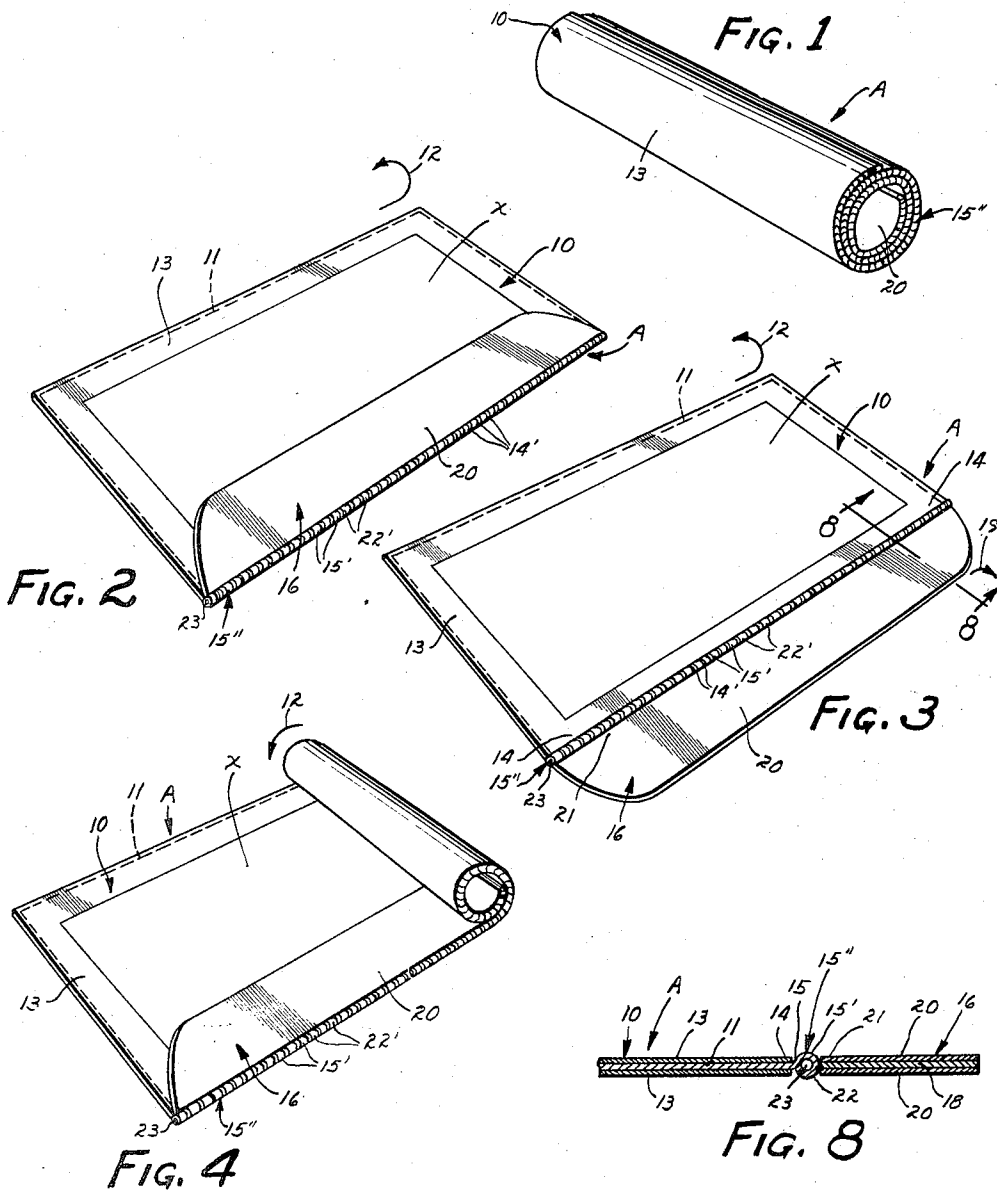
May 5, 1959

A. S. MILLER
ROLL-UP ENCLOSING DEVICE

2,884,980

Filed May 14, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

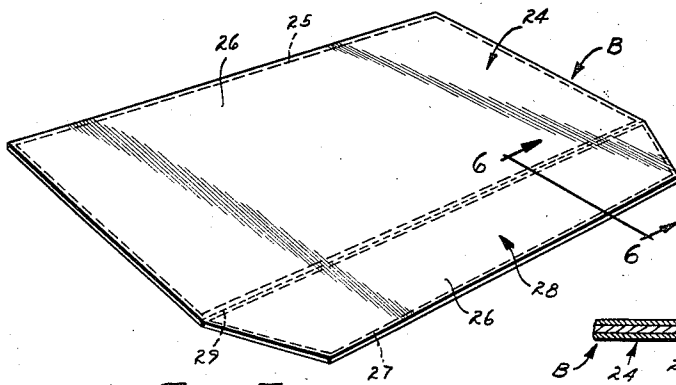


Fig. 5

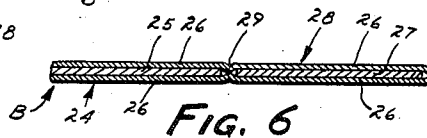


Fig. 6

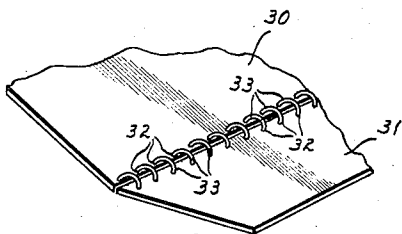


Fig. 10

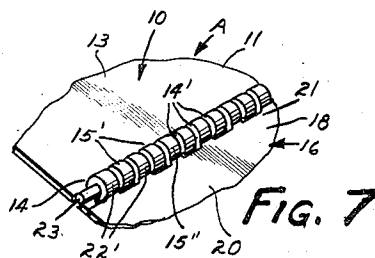


Fig. 7

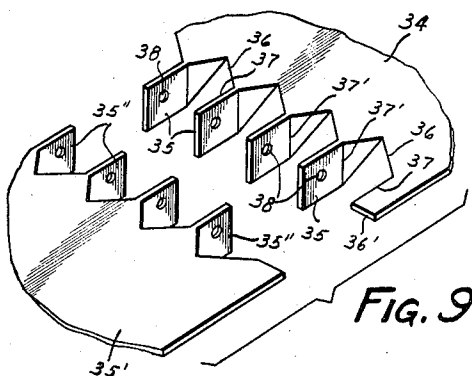


Fig. 9

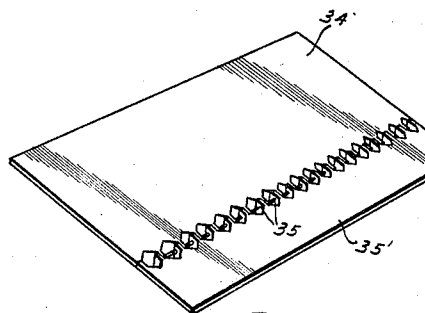


Fig. 11

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2,884,980

ROLL-UP ENCLOSING DEVICE

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6 Claims. (Cl. 150—39)

My invention relates to an improvement in an enclosing device for sheet material and more particularly to a device for enclosing sheet material in rolled-up formation which may be easily placed and held in flattened opened condition for receiving the sheet material or removal of the same and which automatically rolls up when simply and properly manipulated by a single movement of my construction.

It is an object of my invention to provide an enclosing device consisting of two sheet retaining members each formed with a ribbon like coil spring member hinged together along their opposed longitudinal adjacent edges with the tendency of each to coil in opposed relation when in open position.

It is also an object to provide novel means for hinging the retaining members together.

I shall not here attempt to set forth and indicate all of the various objects and advantages incident to my invention, but other objects and advantages will be referred to or else will become apparent from that which follows.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawings, showing by way of example preferred embodiments of the inventive idea.

In the drawings forming part of this application:

Figure 1 is a perspective view of my enclosing device in a compact rolled up position.

Figure 2 is a perspective view of my device in open flattened position with the retaining flap portion in position for rolling up of the device.

Figure 3 is a perspective view of my device in open flattened position with a currency bill in position thereon.

Figure 4 is a perspective view of my device in a partially rolled up position.

Figure 5 is an alternative form of my invention embodying a different type of hinge construction for the retaining body members.

Figure 6 is a sectional view on the line 6—6 of Figure 5.

Figure 7 is a detailed enlarged view of the hinge included in the device of Figures 1—4 and 8.

Figure 8 is an enlarged sectional view on the line 8—8 of Figure 3.

Figure 9 is an enlarged detailed perspective view of an alternative form of hinge for the retaining body members in separated condition with the hinge pin removed.

Figure 10 is a perspective view of a further alternative form of hinge.

Figure 11 is a perspective view of the hinge disclosed in Figure 9 in assembled position.

Referring to the drawings in detail, my roll-up enclosing device A includes the outer body member 10 which is composed of the thin flat spring steel member 11 which is formed with a permanent natural tendency to coil in the direction of the arrow indicated as 12 in Figure 2. The member 11 may be covered with a covering 13 of leather or any other suitable sheet material. It is apparent that the member 11 may be of any thin sheet material such

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as plastic or any sheet material which may be formed with a permanent natural tendency to coil.

Formed along the longitudinal edge 14 of the outer body member 10 is the half hinge portion 15 composed of the hinge segments 15' and which hinge portion extends beyond and free of the covering material 13. The numeral 16 designates the retaining member which is composed of the thin flat spring steel member 18 having a permanent tendency to coil in the direction of the arrow indicated as 19, Figure 3, which direction of coiling is opposite to that of the member 11, Figure 3.

The retaining member 16 is covered with the sheet portions 20 in the same manner as the outer body member 10 and has formed along the longitudinal edge 21 thereof the half hinge portion 22 composed of the hinge segments 22' which hinge portion 22 coincides with the half hinge portion 15 to make up the hinge 15''. The hinging of the outer body member 10 to the retaining member is completed by the flexible elongated hinge pin rod 23. The hinge segments 15' and 22' are constructed of such a length as to provide a space between the same indicated by the numeral 14' which construction allows the hinge 15'' to be coiled into the positions illustrated in Figures 1 and 4.

With the member 10 tending to coil in one direction and the member 16 tending to coil in the opposite direction and with both connected at their adjacent longitudinal edges and in substantially the same plane as in Figure 3, the result is that the hinge portion 15'' tends to assume a straight line and place both members 10 and 16 flat and in the same plane. It is apparent that the members 11 and 18 need not be covered, but the surface thereof may be anodized, enameled, etc.

In using my device A, the same is unrolled from the enclosing formation of Figure 1, which it normally assumes, to the flattened condition of Figure 2. Then the retaining member or flap 16 is hingedly moved into the position of Figure 3 whereby the members 10 and 16 maintain a substantially flat condition and the material X may be easily removed.

In the natural position shown in Figure 3 where the tendency of the member 10 is to coil one way and the tendency of the retaining member 16 is to coil the opposite way, the result is that both members, 10 and 16, tend to remain in flattened condition due to the counter stress created by each member relative to the other.

In closing the device A, the retaining member 16 is hingedly moved to the position of Figure 2, where it overlies the member 10 and in this position both members 10 and 16 coil in the same direction and automatically coil or roll up together as indicated in Figure 4 thereby enclosing the material X in compact rolled-up form.

In Figure 5 the body member 24 of the alternative form B is similar to the member 10 and includes a similar flat thin spring member 25 and the outer covering 26 which also extends over the spaced spring member 27 thereby forming the retaining member 28 which is hingedly mounted on the member 24 by stitching as at 29. The device B is rolled up in the same manner as A.

In Figure 10 the flat spring members 30 and 31, similar to 11 and 18, may be hinged by forming a series of spaced holes 32 along the longitudinal opposed edges thereof and a coil spring 33 inserted through said holes.

Further, the longitudinal edge of the spring body member 34, similar to member 11, may be formed with the ear members 35, Figure 9. The ear members 35 are punched from the spring member 34 at the time of formation of the latter and are punched along the lines 36 and 37 and then forced downwardly to a position substantially at right angles to the flat plane of the spring 34. The ears 35 are also folded slightly on the line 37' whereby the ears 35 are at right angles to the edge 36' of the

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member 34. The ears 35 are also formed with the holes 38 through which a flexible hinge pin similar to 23 is inserted. The opposing edge of a companion member 35', similar to member 16, is formed with ear members 35'' in the same manner and a flexible hinge pin is inserted through holes formed in the ears of both members 34 and 35' to thereby provide a flexible hinge.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described the invention, that which I claim as new and desire to secure by Letters Patent is:

1. In a roll-up enclosing device, an outer body member formed with a natural tendency to coil, a retainer member formed with a natural tendency to coil in a direction opposite to that of said body member when both are in the same plane, and flexible hinge means connecting said retainer to said body member along adjacent edges thereof.

2. A roll-up enclosing device comprising two members connected along one edge thereof and each formed with a natural tendency to coil in the direction opposite to the other when placed in the same plane to thereby maintain the two members in the same plane and each having a natural tendency to coil in the same direction when one overlies the other.

3. In a roll-up enclosing device, an outer body member formed with an intermediate member having a natural tendency to coil and outer covering means therefor, a retainer member including an intermediate member having a natural tendency to coil in the direction opposite to that of said outer body member when said members are placed in the same plane and outer covering means therefor, and flexible hinge means connecting said outer body member to said retainer member along one edge.

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4. In a roll-up enclosing device, an outer member having hinge segments formed on one edge thereof and a natural tendency to coil, a retainer member having hinge segments formed on one edge thereof in interfitting position with the hinge segments of said outer member, said retainer member having a tendency to coil in a natural direction opposite to that of said outer member when placed in the same plane, and a flexible hinge pin extended through said hinge segments.

5. In a roll-up device, a main body member formed with a natural tendency to coil, at least one auxiliary member hingedly connected to an edge of said main body member and formed with a natural tendency to coil in a direction opposite to that of said body member when said members are placed in the same plane and coil with said main body member when the same is placed in an overlying position on said main body member.

6. In a roll-up enclosing device, a thin outer coil spring body member, a thin coil spring retainer member, said outer body member and said retainer member hingedly connected along adjacent edges, the coiling direction of said retainer member being opposite to that of said outer body member when said members are placed in the same plane with one extended from the other at the hinged connection, and the coiling direction of said body member and said retainer member being the same when one member is caused to overlie the other.

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