

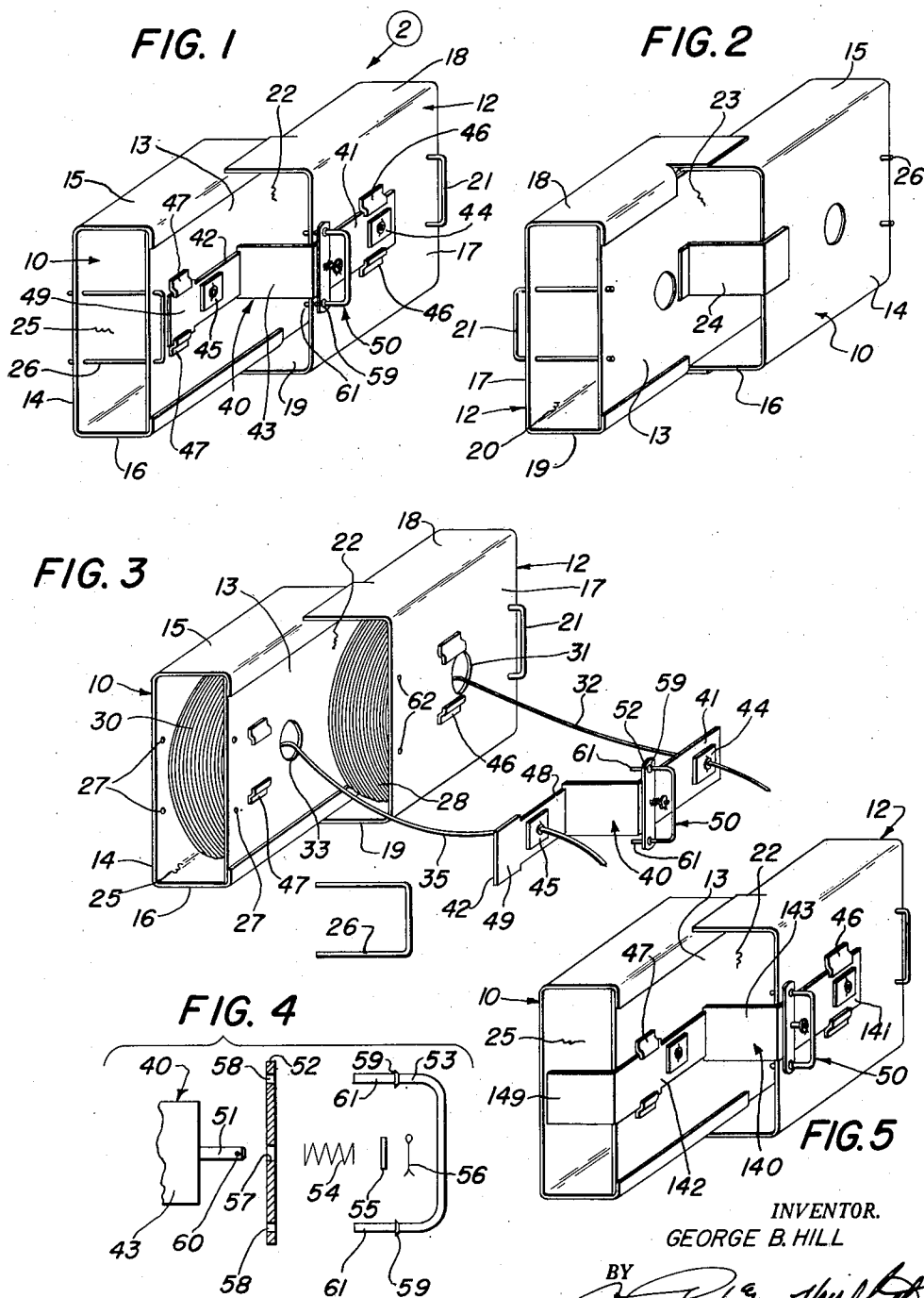
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DISPENSING MECHANISM FOR BALERS OR THE LIKE

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DISPENSING MECHANISM FOR BALERS
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1

This invention relates to dispensing mechanism for baling presses or like machines that handle material and ultimately deliver the material in the form of bales or bundles tied with wire or twine.

In the usual baling press which is equipped with means for gathering and baling hay, there is commonly provided one or more containers for holding one or more coils or balls of wire or twine used in the baling operation. In one well known type of baler wherein tying is accomplished by the use of wire, there is provided a pair of boxes, each of which holds a coil of wire and each of which has an apertured wall through which the wire is fed to the tying mechanism. As the wire is ultimately used up, it must be replenished from time to time and it is conventional practice to construct the wire containers in such manner that portions thereof may be removed for the purpose of inserting new coils of wire, after which the portions are replaced and operation of the machine is resumed.

The task of adding new coils of wire to the wire boxes is not without its complications, and it is accordingly the principal object of the present invention to provide means whereby the replenishing of wire or twine is greatly facilitated. An object of the invention in this respect is to provide a wire box in which the dispensing opening is relatively large so that the wire may easily be inserted therethrough and to provide an attachable and detachable member which may be removed from the box while the new coil of wire is being added and which has relatively small guiding apertures for receiving the wire, the arrangement being such that the wire may be passed through the smaller apertures while the member is detached from the container, after which the member may be attached to the container for normal operation. Another important object of the invention relates to the provision in such member of means for closing the containing portions of the boxes after the wire has been inserted therein. Still other objects of the invention relate to a member of the type described that is simple in design and easy to manufacture at a low cost; to provide bearing or guide elements of apertured construction in which the portions forming the apertures are hardened against undue wear; and to provide a member that may be readily attached to existing wire boxes.

The foregoing and other important objects and desirable features inherent in and encompassed by the invention will become apparent to those skilled in the art as the disclosure thereof is

2

made in detail in the following description of a preferred embodiment of the invention as shown in the accompanying sheet of drawings, in which

Figure 1 is a perspective view of the container structure shown with the detachable member in place;

Figure 2 is a perspective view of the box or container as viewed from its opposite ends, or in the direction indicated by the arrow and the encircled numeral 2 in Figure 1;

Figure 3 is a perspective view of the container shown in Figure 1 and illustrating the detachable member in detached position and further showing the manner in which the wire or twine is fed through the apertures in the container and then through the apertures in the detachable member;

Figure 4 is an enlarged exploded view showing the construction of a preferred type of releasable latch for holding the detachable member in place on the container structure; and

Figure 5 is a perspective view similar to Figure 1 but showing a modified form of the invention.

In the following specification and appended claims reference is made to certain structural parts of the container as extending in defined directions; for example, longitudinally, laterally, vertically, etc. This language is employed for the purposes of convenience and brevity and it is not intended thereby to exclude from the scope of the invention similar or equivalent structures disposed in other positions and having components extending in other directions. Further, the invention is particularly adapted for use in a wire box or container construction of the type forming the subject matter of assignee's co-pending application, Serial No. 636,890, filed December 22, 1945. However, the general principles of the invention are applicable to constructions of other types, regardless of whether wire or twine is being handled.

The container structure includes an inner box 10 and an outer box 12 having a common dividing wall 13. The structure is mounted on the baling press of the well known type to which it is especially applicable in such a position that the longer dimension of the structure is longitudinal with respect to the direction of travel of the baler. As stated above, it is immaterial what position the structure occupies, since the positions will undoubtedly vary according to the general design of the machine on which the container is used. The common wall 13 will therefore be referred to as extending longitudinally and the specific construction of each box will be similarly referred to. With this in mind, it

will be seen that the box 10 includes an outer wall 14 which is parallel to the wall 13. However, the wall 14 in longitudinal extent is substantially only half as long as the wall 13. The wall 14 and wall portion 13 are joined at their tops by a transverse upper wall 15 and at their bottoms by a transverse lower wall 16. The construction of the box 12 is very similar to that of the box 10, except that the box 12 has an outer wall 17 parallel to and opposite the other half of the common wall 13. The wall 17 is joined at its top to the wall portion 13 by means of a transverse upper wall 18 and is further joined at its bottom to the wall portion 13 by means of a transverse lower wall 19. The boxes 10 and 12 are thus disposed substantially in side-by-side but longitudinally offset relationship with the box 12 ahead of the box 10 (when considered with respect to the direction of travel of the machine to which the container structure is attached). The wall section 17 of the box 12 may thus be considered an outer or forward wall which is ahead of the rear portion of the wall 13 that forms an inwardly disposed wall for the box 10.

The forward end of the box 12 is open, as at 20, but is normally barred by a bail member 21 which has leg portions cooperating in an obvious manner with appropriately aligned apertures in the opposite wall portions 13 and 17. The opposite or rear end of the box 12 is open, as at 22. A coil of wire (or ball of twine if twine is used) may be inserted into the box 12 through either end 20 or 22 in a manner to be described below.

The forward end of the box 10 is of open construction, as at 23 (Figure 2), but is preferably permanently barred by a transverse member 24. The opposite or rear end of the box 10 is open, as at 25, and is barred by a removable ball member 26 which has leg portions cooperating in an obvious manner with appropriately aligned apertures 27 in the opposite wall portions 13 and 14 (Figure 3). The box 10 is likewise adapted to carry a coil of wire or ball of twine which may be inserted through the open end 25 in a manner to be subsequently set forth.

In Figure 3 the box 12 is shown as containing a coil of wire 28 and the box 10 is shown as containing a second coil of wire 30. The outer wall 17 of the box 12 is apertured at 31 to provide a dispensing opening through which wire from the coil 28 is fed, as at 32. The opening or aperture 31 is relatively large so that the wire 32 from the coil 28 may be easily fed there-through. The inner wall for the box as provided by the rear portion of the common wall 13 is similarly apertured, as at 33, to provide a dispensing opening through which wire, as at 35, is fed from the coil 30. The opening 33 is relatively large like the opening 31 for the same purpose.

The improvement constituting the present invention resides in the provision of an attachable and detachable member generally designated by the numeral 40. This member is generally Z-shaped, as viewed from above, and is provided with a first longitudinal portion 41, a second longitudinal portion 42 and a third portion 43 which extends laterally and cross connects the two portions 41 and 42. When the member 40 is in use, or attached to the container structure, as shown in Figure 1, the portion 41 thereof lies against the outer wall 17 of the box 12; and the portion 42 lies against the inner wall provided by the rear portion of the common wall

13; and the transverse portion 43 bridges the space between the walls 17 and 13 and provides a bar across the rear opening 22 of the box 12.

The forward portion 41 of the member 40 is apertured at 44 and the rear portion 42 is similarly apertured at 45. When the member 40 is attached to the container structure the apertures 44 and 45 are respectively in alignment with the apertures 31 and 33 in the container structure. Each of the apertured portions of the member portions 41 and 42 is preferably formed by means of an apertured and hardened plate secured, as by welding or riveting, to the member 40 in the respective positions noted above. The apertures 44 and 45 are relatively small, each having an inside diameter only sufficiently large enough to loosely receive the wire 32 (35) and to provide a guide for said wire. Inasmuch as the material that is used to provide the apertured plate is relatively hard, wear on the member 40 is cut to a minimum.

The wall 17 of the forward box 12 is provided with a pair of vertically spaced apart lugs 46 to provide guide means for slidably receiving the forward portion 41 of the member 40. The wall portion 13 of the box 10 is provided with a pair of similar lugs 47 to provide similar guide means for slidably receiving the portion 42 of the member 40. The lugs 46 are spaced apart and have angularly related portions to overlap and receive the forward member portion 41 so that the member may be withdrawn and inserted longitudinally with respect to the general extent of the container structure. An intermediate portion of the member portion 42 is reduced in width, as at 48, so as to clear the lugs 47 when the member 40 is moved laterally after first being moved longitudinally, as will be set forth below. The rear-most portion of the member 42 is, as at 49, of the same width as the member portion 41, so that this portion 49 will be engaged by the lugs 47 to prevent lateral displacement of the member 40 with respect to the container structure.

From the description thus far it will be seen that the member 40 may be detached from and attached to the container structure by means of shifting or sliding the member into and out of position and into and out of engagement with the lugs or guide means 46 and 47. According to another feature of the invention, there is provided manually releasable means for holding the member 40 in the position of Figure 1. This means is indicated in its entirety by the numeral 50 and, as best shown in Figure 4, includes parts making up a spring pressed releasable latch including a carrying pin 51, a carrying bar 52, an operating handle 53, a coil spring 54, a washer 55, and a cotter pin 56. The pin 51 may be secured in any suitable fashion to a rear portion of the portion 41 of the member 40 and projects outwardly therefrom to receive the carrying bar 52 by means of an aperture 57 in the latter. The carrying bar is further apertured at each of its opposite ends, as at 58, to receive the legs of the handle 53, which is preferably in the form of a U or ball. Each leg may be upset, as at 59, to provide means for determining the limit to which the leg portions extend through the apertures 58. The handle 53 and carrying bar 52 are preassembled by an operation including the insertion of the leg portions through the apertures 58, after which these portions are welded or otherwise rigidly secured together so that the handle and bar become, in effect, a single member. The carrying pin 51 is then inserted through

5

the aperture 57 in the bar and the pin receives the coil spring 54 and washer 55, after which the cotter pin 56 is inserted through an opening 60 in the outer end of the pin 51. The action of the spring 54 is such as to urge the handle 53 and bar 52 inwardly against the outer face of the portion 41 of the member 40. The leg portions of the handle 53 project inwardly at 61 and, when the member 40 is in the position of Figure 1, the leg portions 61 are received in apertures 62 provided in the rear portion of the outer wall 17 of the forward box 12 (Figure 3).

In the modified form of the invention shown in Figure 5, the container structure may be identical to that previously described, with the exception that the apertures 27 for receiving the stop or bail means 26 may be omitted. The member 40 is replaced by a member 140 and the two members are similar in all respects with the exception that the member 140 has, in addition to portions 141, 142 and 143, a fourth laterally extending portion 149 which, when the member 140 is in position, as shown in Figure 5, extends at least partially across the rear opening 25 in the box 10. The member 140 may be provided with a spring pressed release means 50 such as that previously described.

In the use of a container construction provided with the member 40, as described in Figures 1-4, the boxes 10 and 12 are respectively adapted to carry and dispense the coils of wire 30 and 28. Assuming that it is desired to add these coils (or balls of twine if twine is used) to the boxes, the member 40, if in place, is first removed by releasing the means 50 to withdraw the leg portions 61 of the handle 53 from the apertures 62 in the wall 17 of the box 12. The member 40 may then be shifted rearwardly until the forward end of the member portion 41 is free of the guide means 46 on the box 12, and until the reduced portion 43 of the member portion 42 is clear of the guide means 47 on the outer wall of the box 10. The member 40 may then be moved outwardly away from the container structure. Inasmuch as the stop or bail member 26 is of U-shape and the bight portion thereof is sufficiently wide and extends laterally a sufficient extent at the wall portion 13, it will not interfere with rearward shifting of the member 40. However, since the member 26 must be removed before a coil of wire can be inserted in the box 10, it may be found desirable to remove the member 26 before removing the member 40. The members 26 and 40 having been removed, the open ends 22 and 25 of the boxes 12 and 10 are now unobstructed and the coils 28 and 30 may be inserted therein. The forward open end 20 of the box 12 is barred by the member 21 and the forward open end 23 of the box 10 is barred by the permanent transverse member 24, and the coils cannot escape from the boxes at the forward ends thereof. Inasmuch as the apertures 51 and 53 are relatively large, it will be an easy matter to pass the wire portions 32 and 35 respectively therethrough, the member 40 still being detached from the container structure, as indicated in Figure 3. Since the member 40 is still detached, it will be quite an easy matter to thread the wire portions 32 and 35 respectively through the apertured portions 44 and 45. It will be seen in this respect that if the apertures and housing portions 44 and 45 had been provided directly on the outer walls of the container structure, it would be comparatively difficult to thread

6

the wire portions 33 and 35 respectively through the apertured portions 44 and 45.

With the procedure set forth above having been accomplished, the member 40 is then remounted on the container structure, it being necessary only to keep the wire portions 32 and 35 taut so that they do not become bent behind the member portions 41 and 42 as these portions are placed against the wall portions 13 and 17. The member 40 is initially positioned against these outer walls of the container so that the reduced part 43 of the portion 42 is received between the lugs 47 and the forward end of the member portion 41 is rearwardly of the lugs 46. The member 40 is then held by the operator with one hand while he pulls the operating handle 53 outwardly against the spring 54, after which he may shift the member 40 forwardly so that the members 41 and 42 are respectively engaged by the lugs 46 and 47; he may then release the handle 53, and the spring 54 will urge the handle inwardly so that the leg portions 61 thereon enter the apertures 62 in the rear part of the outer wall 17 of the forward box 12. It will be noted that the member portion 43 that cross connects the member portions 41 and 42 lies across the rear opening 22 of the box 12 and thus forms an abutment means engageable with the coil 28 to prevent escape of the coil 28 from the rear end 22 of the box. The combined action of the lugs 46 and 47 and the releasable means 50 secures the member 40 in place. The bail member 26 is then replaced at the rear end opening 25 of the box 10 to prevent escape of the coil 30.

According to the modified form of the invention shown in Figure 5, the lateral extension 149 at the rear end of the member 142 takes the place of the bail or bar member 26 and thus serves to provide means for retaining the coil 30. Other steps in the procedure of attaching the member 140 to or detaching said member from the container structure will be the same as those described above in connection with the attaching and detaching of the member 40.

Other features and advantages of the preferred forms of the invention set forth above will undoubtedly occur to those skilled in the art, as likewise will numerous modifications and alterations in the preferred structure illustrated, all of which may be accomplished without departing from the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. In a wire- or twine-dispensing container for baling presses or the like wherein the container is a generally longitudinal structure having a pair of laterally spaced, generally parallel walls offset longitudinally and each wall has an aperture therein through which wire or twine may be dispensed from a plurality of coils or balls disposed at one side of the walls, the improvement comprising: a generally Z-shaped member having first and second generally parallel portions that are spaced apart laterally and offset longitudinally on the order of the container walls, and further including a third, lateral portion cross-connecting said first and second portions; said member in use having its first and second portions lying respectively against the container walls and its third portion bridging the space between said walls; said first and second portions having dispensing apertures respectively lining up with the aforesaid wall apertures; and means for removably securing said member to the container.

2. The improvement defined in claim 1, further

characterized in that: the means for removably securing the member to the container includes guide means providing for longitudinal shifting of the member while holding the member against lateral displacement relative to the container, and releasable latch means normally holding the member against longitudinal shifting relative to the container.

3. In a container as in claim 1 wherein the apertures in the walls are relatively large to facilitate the insertion of wire or twine therethrough, the improvement defined in claim 1, further characterized in that: the dispensing apertures in the member portions are relatively small to facilitate the guiding of such wire or twine.

4. The invention defined in claim 3, further characterized in that: the dispensing apertures in the member portions are respectively formed in plate-like elements of hardened material attached to said portions.

5. In a wire- or twine-dispensing container for baling presses or the like wherein the container is a generally longitudinal structure having a wall at one side of which is disposed a coil or ball of wire or twine to be dispensed through an aperture in the wall, the improvement comprising: a member having a first portion lying against the wall and including a dispensing aperture for alignment with the wall aperture, and further including a second portion extending laterally from the first portion to provide an abutment engageable with the coil or ball of wire or twine; and means for securing the member to the box.

6. In a wire- or twine-dispensing container for baling presses or the like wherein the container is a generally longitudinal structure having a box including opposite generally parallel side walls and having one end open to receive a coil or ball of wire or twine between the walls and abutment means at the other end to retain such coil or spool, one of the walls having an aperture therein through which such wire or twine may be dispensed, the improvement comprising: a member having a first portion lying against the apertured wall of the box and having a dispensing aperture therein for alignment with said wall aperture, and a second portion extending laterally from the first portion and at least partially across the open end of the box to provide an abutment for engagement with the coil or ball in the box; and means for removably securing the member to the box.

7. In a wire- or twine-dispensing container for baling presses or the like wherein the container is a generally longitudinal structure having an outer longitudinal wall and an inner longitudinal wall arranged generally in laterally spaced parallelism and longitudinally offset so that one is ahead and outwardly of the other and behind each of which is a coil or ball of wire or twine to be fed through a dispensing aperture in the wall, the improvement comprising: a member attachable to and detachable from the container and including first and second generally parallel portions spaced apart laterally and offset longitudinally on the order of the container walls and in use lying respectively along the outer and inner walls and having dispensing apertures respectively aligned with the wall apertures, and further including a third portion cross-connecting the first and second portions and laterally bridging the space between said walls, and a fourth portion on the second portion and extending laterally therefrom and inwardly as respects the inner container wall.

8. A wire- or twine-dispensing container for baling presses or the like, comprising: a box having opposite walls and open at one end to receive a coil or ball of wire or twine between said walls; means providing an aperture in one of said walls through which wire or twine may be dispensed; a member having first and second angularly related portions, the first of which lies against the apertured box wall and is apertured in substantial alignment with said wall aperture, and the second of which extends at least partly across the open end of the box to retain the coil or ball against displacement at that end of the box; guide means provided on said apertured wall and engaging the first portion of the member to carry the member slidably on the box for removal from and attachment to the box; and releasable means engageable between the member and the box and normally holding the member against removal.

9. The invention defined in claim 8, further characterized in that: the releasable means includes a spring-pressed handle element carried by the member and including a portion engaging a portion of said apertured box wall.

10. A wire- or twine-dispensing container for baling presses or the like, comprising: a generally vertical wall at the inner side of which may be disposed a ball or coil of twine or wire and having a relatively large opening through which a strand of twine or wire may be readily passed for dispensing thereof at the outer side of the wall; means for receiving a ball or coil of twine or wire at the inner side of the wall including a generally horizontal shelf portion on which such ball or coil may be supported, and a retaining portion extending laterally from the wall in generally the same direction as the shelf for holding such ball or coil against displacement past one end of the wall; means movably associated with the vertical wall, including an element arranged for movement from a first position away from the wall to a second position overlying the outer side of the wall and having a dispensing aperture relatively smaller than the aforesaid wall opening and adapted to receive the aforesaid strand of wire or twine while said element is in its first position so that insertion of such strand through said aperture is facilitated, said means further including a laterally extending portion connected to the apertured element and positionable at and transverse to the end of the wall opposite the aforesaid retaining portion when said element is moved to its second position, whereby said member retains the ball or coil against escape at said opposite end of the wall; and means releasably securing said element in its second position.

11. A wire- or twine-dispensing container for baling presses or the like, comprising: a generally vertical wall structure at the inner side of which may be disposed a pair of balls or coils of twine or wire and having a pair of relatively large openings through each of which a strand of twine or wire may be readily passed for dispensing thereof at the outer side of the wall structure; means for receiving such balls or coils of twine or wire at the inner side of the wall structure for supporting the balls or coils against vertical displacement relative to the wall structure and relative to each other; retaining means including portions extending laterally from the wall structure and generally in the same direction as the supporting means for holding such balls or coils against displacement past one end of the wall structure; means movably associated with the wall structure, including an element arranged for move-

9

ment from a first position away from the wall structure to a second position overlying the outer side of the wall structure and having a pair of dispensing apertures relatively smaller than the aforesaid wall openings and respectively adapted to receive the aforesaid strands of wire or twine while said element is in its first position so that insertion of such strands respectively through said apertures is facilitated, said means further including laterally extending portions connected to the apertured element and positionable at and transverse to the end of the wall structure opposite the aforesaid retaining portion when said element is moved to its second position, whereby said member retains the balls or coils against escape at said opposite end of the wall; and means releasably securing said element in its second position.

12. A wire- or twine-dispensing container for baling presses or the like, comprising: a box having opposite walls and open at one end to receive

10

a coil or ball of wire or twine between said walls; means providing an aperture in one of said walls through which wire or twine may be dispensed; a member having first and second angularly related portions, the first of which lies against the apertured box wall and is apertured in substantial alignment with said wall aperture, and the second of which extends at least partly across the open end of the box to retain the coil or ball against displacement at that end of the box; means cooperating between the apertured wall and the first portion of the member to mount the member on the box for movement toward and away from the box; and releasable means engageable between the member and the box and normally holding the member against movement relative to the box.

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No references cited.