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C. E. ERICKSON ET AL

2,448,707

FEED TROUGH

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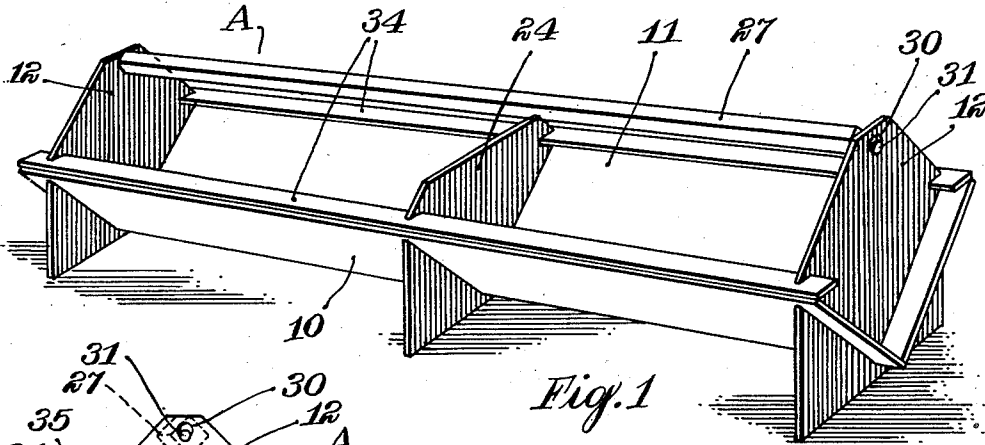


Fig. 1

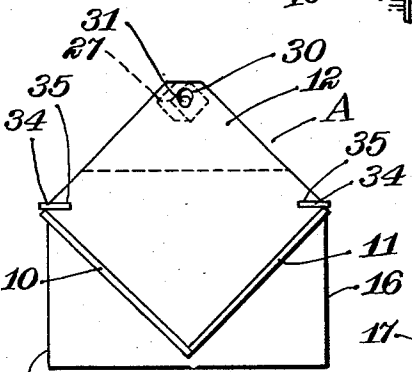


Fig. 2

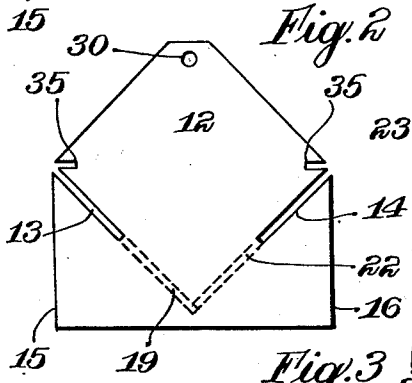


Fig. 3

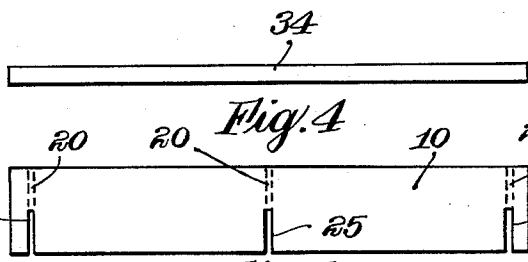


Fig. 4

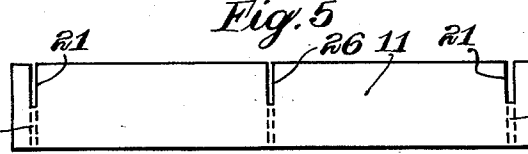


Fig. 5

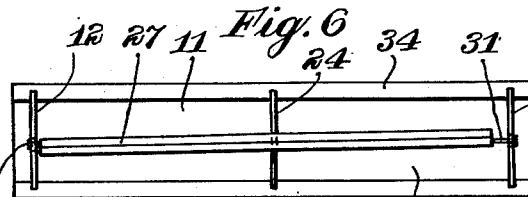


Fig. 6

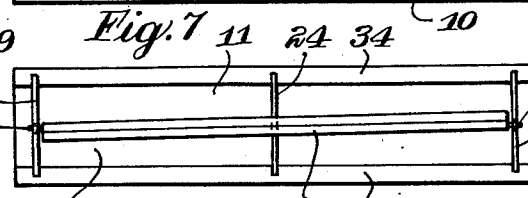


Fig. 7

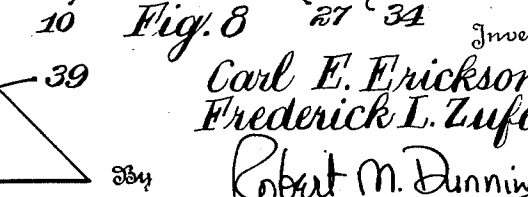


Fig. 8

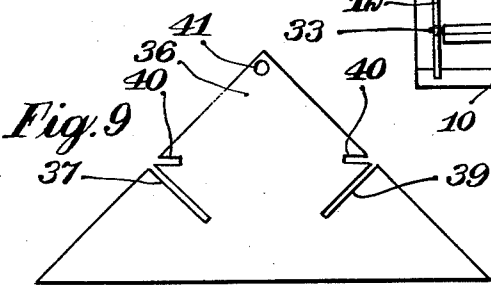


Fig. 9

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UNITED STATES PATENT OFFICE

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FEED TROUGH

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5 Claims. (Cl. 119—61)

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Our invention relates to an improvement in feed trough, wherein it is desired to provide a feed trough formed of sheet material and held in place by the interlocking of the various elements.

An object of the present invention lies in the provision of a trough-shaped element closed at, or near, the ends thereof by suitable end walls arranged in interlocking relation with the elements forming the trough. As a result the trough may be easily assembled without the use of nails, screws, or other fastening means, and may firmly support the elements of which the trough is constructed in their proper relationship.

An object of the present invention is to provide a pair of flat panels arranged in V formation, and to maintain these panels in proper relationship by means of end partition walls intersecting the planes of the trough forming panels. These end partition walls are arranged to interlock with the panels forming the trough to hold these elements properly assembled. Intermediate partition walls can likewise be provided if desired to further reinforce the trough forming panels and maintain them in proper relationship. These intermediate partition walls preferably intersect the planes of the trough forming panels at substantially right angles.

A further feature of the present invention lies in the provision of a pair of panels arranged in V formation and supported by intersecting end partition walls, and in providing a flange strip projecting inwardly from each opposed upper panel edge. These flange strips are interlocked with the end partition walls and with any intermediate partition walls employed and act not only to prevent material within the trough from being easily spilled therefrom, but also to hold the trough forming panels interlocked with the partition walls.

A further feature of the invention lies in providing an eccentrically mounted tumble bar above the trough, and in the novel manner of attaching this tumble bar to the end walls of the trough.

A further feature of the present invention lies in the fact that the end partition walls intersect the trough forming panels in such a manner as to extend below the same to form a standard. Not only do these end partition walls extend between the trough forming panels to form a closure for the ends of the trough, but also these walls project below the trough to form a base to support the trough. The intermediate partition walls, when used, may likewise extend below the level of the trough to form an intermediate standard.

A further feature of the present invention lies in the particular use of the interlocking slots in the trough forming members, and in the partition walls, so that these elements may intersect

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one another without seriously weakening either the trough or the partition walls.

These and other objects and novel features of our invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of our specification:

Figure 1 is a perspective view of our trough embodying the invention.

Figure 2 is an end elevational view of the trough.

Figure 3 is a diagrammatic view of one of the end partitions illustrating the construction thereof.

Figure 4 is a diagrammatic view of one of the flange forming strips to prevent material from within the trough from easily spilling out the same.

Figure 5 is a diagrammatic view of one of the trough forming members showing the construction thereof.

Figure 6 is a diagrammatic view of the other trough forming member showing the construction thereof.

Figure 7 is a top plan view of the trough showing the manner in which the tumble bar is attached thereto.

Figure 8 is a view similar to Figure 7 showing a modified form of construction of the tumble bar support.

Figure 9 is a view similar to Figure 3 showing a partition wall of a slightly different construction from that shown in Figure 3.

The trough A is constructed as best illustrated in Figures 1 and 2 of the drawings. The trough A comprises two trough forming members 10 and 11 formed in V relation. As best illustrated in Figure 2 of the drawings the member 10 is slightly wider than the member 11 so that an edge of the member 11 abuts against the lower margin of the member 10. The members 10 and 11 and all of the remaining elements of the trough, with the exception of the tumble bar, may be formed of flat sheet material, such as pressed composition board, ply-wood, fiber, plastic, or any other suitable material. Material such as pressed composition board has been used with particularly beneficial effects.

A pair of spaced end partition walls 12 are arranged to intersect the planes of the members 10 and 11 at substantially right angles thereto. In order to effect this interlocking arrangement, the end partition walls 12 are provided with angularly arranged slots 13 and 14 which extend inwardly and downwardly from the side edges 15 and 16, respectively, of the partition wall members 12. These slots 13 and 14 extend substantially one-half the distance from the open ends of the slots to the vertex of the V formed by the members 10 and 11. These slots 13 and 14 are designed to

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embrace portions of the trough forming members 10 and 11 in a manner which will be later described in detail.

The trough forming member 10, best illustrated in Figure 5 of the drawings, is provided with a pair of spaced slots 17 therein extending in parallel relationship and parallel to the ends of the member. The slots 17 extend substantially one-half of the distance from one longitudinal edge of the member 10 to the opposite edge thereof. These slots 17 are designed to embrace the portions of the partition walls 12 lying between the bases of the slots 13 and 14 and the vertex of the trough. In other words, the slots 17 are designed to embrace the area 19 of each partition wall 12 outlined in Figure 3 of the drawings by the dotted outline. Simultaneously the slots 13 embrace the area 20 of the trough forming member 10 shown in dotted outline. Obviously the outlined areas 19 and 20 do not illustrate hidden parts, but merely define areas embraced by the cooperating slots.

The trough forming member 11 is provided with a pair of slots 21, which are spaced apart a distance equal to the spacing of the slots 17. These slots 21 extend substantially one-half of the distance through the member 11, extending parallel to each other and to the ends of the member 11. These slots 21 embrace an area 22, indicated in dotted outline in Figure 3 of the drawings. Similarly the slots 14 of the partition walls 12 embrace areas 23 of the member 11, indicated in dotted outline in Figure 6 of the drawings. Thus when the member 11 is in place, it is intersected by the partition walls 12 which form the end closures of the trough A. Tilting of the wall 12, relative to either the member 10 or the member 11 is prevented by the interlocking arrangement illustrated.

One or more intermediate partition walls 24 may be provided between the end partition walls 12. Each intermediate partition wall 24 is identical with the end partition walls 12, with the exception that the intermediate partition 24 does not extend as high above the trough as do the walls 12 when a tumble bar is provided. The tumble bar is preferably supported by the end partition walls 12, making it sometimes desirable to terminate the intermediate partitions 24 below the level of this bar.

The intermediate partition wall 24 is provided with slots 13 and 14, identical with those of the end partition walls 12. As the slot arrangement of the intermediate partitions 24 is identical with that of the end partitions 12, these slots have not been illustrated in detail.

The trough member 10 is provided with an intermediate notch 25 therein, parallel to and similar in construction to the slots 17 therein. A slot 25 is provided in the member 10 for each intermediate partition wall 24, it being understood that these slots 25 interlock with the partitions 24 in the manner previously described in conjunction with the end partitions 12. The trough member 11 is likewise provided with a slot 26 therein, parallel to and spaced from the slots 21. The slot 26 is identical to the slots 21 and acts to interlock with the intermediate partition 24 in the same manner that the slots 21 interlock with the end partitions 12.

When used as a feed trough, the trough A may be provided with a rotatable eccentrically mounted tumble bar which prevents fowl or animals using the trough from entering the same. As best illustrated in Figures 1 and 7 of the

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drawings, this tumble bar may be formed of a multisided stick of wood or other material 27 of a length somewhat shorter than the distance between the end partition walls 12. A pin, such as a nail or the like, indicated by the numeral 29 is provided in one end of the tumble bar 27, projecting therefrom at a point offset from the axis of the bar. This nail or pin 29 extends through an opening 30 in one end partition 12. The nail or pin 29 projects from the end of the tumble bar a distance sufficient to just extend through the partition 12 and to freely support the tumble rod for rotation when the pin or nail is headed, this head 29 is of a size to fit within the hole 30 to permit the nail to be removed therefrom.

A second pin or nail 31 projects from the opposite end of the tumble rod 27 and is of sufficient length to extend through the adjacent end partition 12. When this pin or nail is headed, the head is of a size to fit through the opening 30. The nail 31, however, projects from the tumble rod 27 a distance considerably greater than does the nail 29, due to the fact that the tumble rod 27 is somewhat shorter than the distance between the end partitions 12. This length of projection of the nail 31 is sufficient to permit the tumble rod 27 to be moved longitudinally until the nail 29 is entirely disengaged from its cooperable opening 30. By thus disengaging one end of the tumble rod 27, swinging the free end thereof upwardly and then disengaging the nail 31 from its opening 30, the tumble rod 27 may be removed at will. The heads of the nails or pins 29 and 30 normally prevent the tumble rod 27 from accidentally slipping out of place.

The nail 31 projects eccentrically with respect to the axis of the bar 27, and is preferably arranged on the side of the axis opposite that from which the nail 29 projects. Thus the bar 27 is eccentrically mounted to rotate instantly upon contact. This construction tends to prevent chickens from roosting on the bar 27.

In Figure 8 of the drawings we disclose a modified form of construction of tumble bar attachment. In this construction the tumble rod 27 is of a length to fit freely between the end partitions 12, or between an end partition and an intermediate partition 24, but is not of sufficient length to permit any considerable longitudinal movement of the bar 27. Accordingly in detaching this bar, one or both of the end partitions 12 are bent or flexed until one of the pins or nails 33, holding the tumble bar in place is free from its opening 30 in the end partition wall. Thus the natural resilience of the material forming the end partitions is utilized in attaching or detaching the tumble bar from place. The pins or nails 33 may or may not be headed.

In order to prevent material within the trough from being easily spilled therefrom during use, we provide flange strips 34 extending inwardly in opposed relation from the upper edges of the members 10 and 11. In order to support the strips 34, we provide opposed slots 35 extending inwardly in alignment from the opposite sides 15 and 16 of the end partitions 12, as best illustrated in Figures 1, 2 and 3 of the drawings. The slots 35 are preferably positioned immediately above the outer extremities of the slots 13 and 14 as noted in Figure 3 of the drawings. The flat flange strips 34, illustrated in outline in Figure 4 of the drawings, are then forced inwardly from the upper edges of the members 10

and 11. The flange strips 34 are preferably so arranged as to hold the trough members 10 and 11 interlocked. An examination of Figure 2 of the drawings will disclose the fact that the strips 34 block the path of the members 10 and 11 so that these members can not be disengaged from the various partition walls while the strips 34 are in place.

The various interlocking slots illustrated are preferably of but slightly greater width than the thickness of the members 10 and 11, so that the interlocking elements fit firmly in place. For this reason we have found that material such as pressed composition board is advantageous for use in the construction of our trough, as this material is usually provided with a very smooth surface and a relatively rough surface. The rough surface is capable of compressing slightly in interlocking the various elements, and this roughened surface tends to hold the various elements interlocked. At the same time the smooth surface of the material provides an effective lining or inner surface for the trough.

In Figure 9 of the drawings we disclose a partition wall construction of a shape somewhat different than that illustrated in Figures 1, 2, and 3 of the drawings. The partition member 36 may take the place of either the end partitions 12, or the intermediate partition 24, or both of these partitions. The partition member 36 comprises a triangularly shaped body having slots 37 and 39 therein which correspond to the slots 13 and 14 of the wall 12. The wall 36 is also equipped with opposed slots 40, identical with the slots 35 previously described. An aperture 41 may be provided in the upper end of the partition if it is so desired, and intermediate partitions may be made identical to the partition 36 illustrated, with the exception that the upper point of the triangular body may be cut off if desired.

The partition wall 36 differs from the partition walls 12 and 24 in that the side edges of the partition 36 extend at a considerable angle to the vertical throughout the entire length. As a result the trough supported by the partition walls 36 is provided with a wider base, and accordingly will not tip over as easily as the previously described trough.

In accordance with the patent statutes, we have described the principles of construction and operation of our trough, and while we have endeavored to set forth the best embodiment thereof, we desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of our invention.

We claim:

1. A trough comprising a pair of panels arranged in V formation with the longitudinal edge of one panel abutting the marginal edge of the other panel, substantially parallel partition walls intersecting said panels, said partition walls having slots therein extending from opposed edges thereof toward the vertex of the V formed by said panels, said panels including slots extending from said one longitudinal edge toward the opposite longitudinal edge thereof, said slots in said panels embracing portions of said partition walls and said slots in said partition walls embracing portions of said panels, and a pair of flanges supported by said partition walls, each flange of said pair engaging a corresponding panel to lock each of said panels in contacting relation.

2. A trough comprising a pair of panels arranged in substantially V formation and in contacting relation along one longitudinal edge of each panel, a partition wall means intersecting said panels, said partition wall means including slots extending from opposite sides thereof toward the vertex of the V formed by said panels, said slots embracing portions of said panels, and said panels having slots extending from said one longitudinal edge thereof toward the opposite longitudinal edge, said slots embracing portions of said partition wall means, and separate flanges supported by said partition wall means extending inwardly from said other longitudinal edges of said panels, said flanges holding said panels interengaged with said partition wall means.

3. A trough comprising a pair of panels arranged in V formation, intersecting partition walls intersecting said panels; said partition walls including slots extending from opposed sides thereof toward the vertex of the V formed by said panels, said slots embracing portions of said panels, said panels including slots extending from said one longitudinal edge of said panels toward the opposite longitudinal edge thereof, said last named slots embracing portions of said partition walls, opposed inwardly extending slots in said partition walls terminating adjacent the ends of said slots embracing said portions of said panels, and flange forming strips in said opposed slots forming inwardly extending flanges in the upper extremities of said trough forming walls.

4. A trough construction including a pair of panels arranged in trough formation, a pair of opposed end partition walls secured at the ends of said trough, a rotatable tumbler bar, and eccentric pins projecting from the opposite ends of said bar and supported by said opposed end walls, one of said eccentric pins projecting from said bar in diametrically opposite relation with respect to the axis of the bar to the other of said pins.

5. A trough comprising a pair of panels arranged in V formation and substantially joining along one longitudinal edge of each panel, partition walls intersecting said panels, said partition walls having slots therein extending from opposed edges thereof toward the vertex of the V formed by said panels, said panels including slots extending from said one longitudinal edge toward the opposite longitudinal edge thereof, said slots in said panels embracing portions of said partition walls and said slots in said partition walls embracing portions of said panels, and strip means supported by said partition walls extending along the free edges of said panels to lock said panels in place.

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