

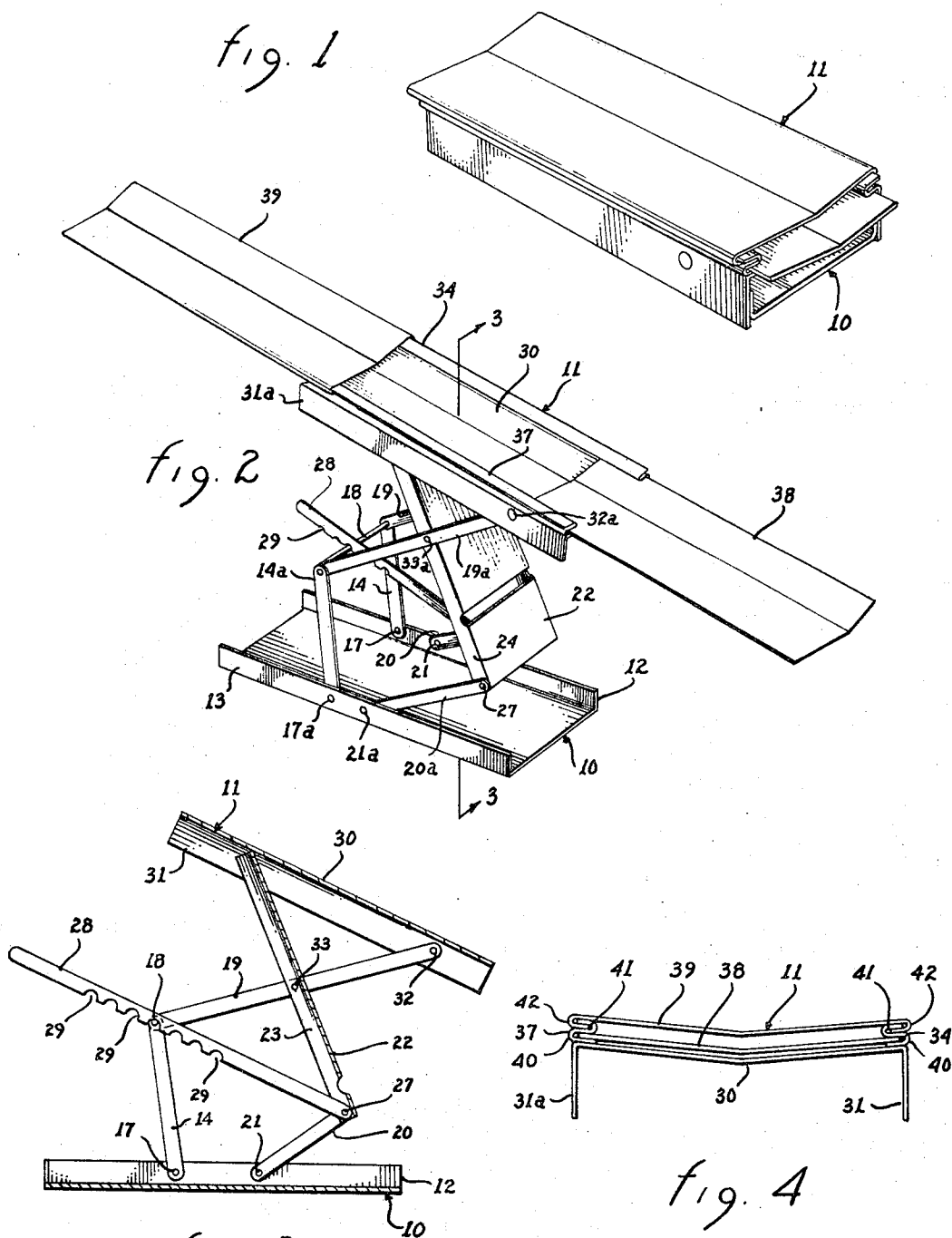
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ADJUSTABLE SEWER DRAIN HOSE SUPPORT

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ADJUSTABLE SEWER DRAIN HOSE SUPPORT
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ABSTRACT OF THE DISCLOSURE

An adjustable support to vertically and angularly position a length of sewage drain hose. The support is collapsible for compact storage.

Background of the invention

This invention relates to devices for semi-permanent plumbing installations.

More particularly this invention concerns a support for sewage drain hoses.

In a further aspect the invention concerns a sewage drain hose support which adjustably positions the elevation and angle of slope of the hose.

In a still further aspect the invention relates to support of the type above described which is collapsible into a compact unit for convenient storage and transportation.

It is frequently necessary to effect a temporary or semi-permanent sewage drain. This is most prevalent among owners of camping trailers and mobile homes. After the trailer has been positioned upon a lot within the trailer park a length of flexible hose is conventionally employed to connect the trailer drain outlet to the sewage receptacle provided within the parking space.

While the sewage receptacle provided by the lot is at ground level the trailer drain outlet is at an elevated position as carried by the trailer. A means must then be provided to support the flexible hose and impart the proper attitude required for effective drainage. Trailer owners have resorted to a variety of methods to provide the required support. Most commonly employed is a parapet of earth or a collection of stones or tiles. For more permanent installation as in the case of mobile homes, the owner may erect a sloping wall of concrete or asphalt paving.

The above methods usually result in an unsightly makeshift arrangement ill proportioned for proper drainage. The lack of aesthetic value and periodically required maintenance are highly objectionable for semi-permanent installations as used with mobile homes. For temporary installations the camping trailer owner is harangued with a time-consuming imposition which must be repeated at each of his frequent stops.

It would be highly advantageous therefore, to provide an unobtrusive drain hose support of a portable nature which may be expediently erected and adjusted to insure the proper drainage angle.

Summary of the invention

Accordingly it is a principal object of my invention to provide an adjustable support for a sewage drain hose.

Another object of the invention is to provide an adjustable support which will eliminate the necessity for unsightly makeshift contrivances.

Still another object of my invention is the provision of an adjustable support, of the nature above described, which is collapsible, into a relatively lightweight compact unit to facilitate storage and transportation.

To accomplish the desired objectives of my invention I first provide a substantially rectangular base. A first pair of parallel support arms are pivotally attached to either side of the base and extend vertically upward therefrom. A rod extends between the upper end of the

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first pair of support arms and forms the pivotal mount for a second pair of parallel support arms. A cover member pivotally receives the upper end of the second pair of support arms in such a manner that a scissors action may ensue between the two pair of parallel arms allowing the cover member to retract and encase the base.

A third pair of support arms, analogous to the first, are pivotally attached to the base in a spaced relationship to the first pair. A brace is pivotally carried by the upper ends of the third pair of support arms, passes between the second pair of arms and abuts the undersurface of the cover member. A pivotal connection is made between the brace and the second pair of support arms at their intersection. A substantially horizontal elongated arm is pivotally attached to the brace in approximate alignment with the attachment of the brace and the third pair of arms. The free end of the arm extends over the aforementioned rod and has a series of indentations capable of engaging the rod.

As different indentations on the arm are engaged over the rod the length from the rod to the pivotal mount of the arm is increased or decreased accordingly. This effectively changes the angle of incidence between the first and second pairs of supporting arms and between the third pair of support arms and the brace. As the angle is increased or decreased there is a corresponding height differential between the base and the cover. As the first and third pairs of parallel support arms are pivotally attached to the base and in close frictional contact therewith, the angle of the cover member relative to the base may be adjustably positioned and thereafter frictionally retained.

The cover member is V-shaped, sloping laterally downwardly inward from each side to form a trough to cradle the flexible hose. Two pair of longitudinally extending grooves are carried by either side of the top of the cover member. An elongate panel formed to correspond with the V shape of the cover member is slidably carried by either of the pair of grooves. These panels are capable of extending from either end of the cover member to increase the length of support of the flexible hose.

To prepare the support for transportation or storage the panels are first retracted into the top. The horizontal arm is then disengaged from the rod. Hand pressure is exerted upon the cover member collapsing the brace and support arms parallel against the base until the cover member terminally encompasses the base. At this time the support occupies a space commensurate with the physical dimensions of the cover member.

Brief description of the drawings

The object and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the invention taken in conjunction with the drawings in which:

FIG. 1 is a perspective view of the device chosen for purposes of illustrating the presently preferred embodiment of the invention as the device would appear when collapsed as during storage.

FIG. 2 is a perspective view of the device as it would appear when erected and ready for use.

FIG. 3 is an elevational view in section taken along the line 3—3 of FIG. 2 and further illustrating the adjustable support mechanism; and

FIG. 4 is an end elevational view of the cover member specifically illustrating the arrangement of the adjustable support plates.

Construction of the preferred embodiment

Turning now to the drawings in which the same reference numerals indicate corresponding elements throughout the several views, FIG. 1 illustrates the presently

preferred embodiment of the invention chosen for purposes of illustration and shows the base generally designated by the reference character 10. The cover member generally designated by the reference character 11 is shown in the collapsed position encompassing the base 10 as the device would appear when ready for storage.

Turning now to FIGS. 2 and 3, the operative elements of the device are specifically detailed. First provided is the rectangular base 10 having upright side panels 12 and 13 extending along either side. A first pair of parallel support arms 14 and 14a are vertically attached to the upright side panels 12 and 13 by the means of rivets 17 and 17a. A rod 18 extends between the upper end of the arm 14 and 14a. A second pair of parallel support arms 19 and 19a are vertically carried at one end by the rod 18. A third pair of parallel support arms 20 and 20a are pivotally attached to side panels 12 and 13 by rivets 21 and 21a. A brace 22 having side panels 23 and 24 is pivotally carried by the upper end of the arms 20 and 20a by a pin 27 which extends through the upper ends of the arms and the side panels of the brace 22. An elongate arm 28 is pivotally attached at one end to the pin 27 approximately central of the brace 22. A series of indentations 29 are so arranged along the under edge of the arm 28 that each may be selectively engaged over the rod 18.

The cover member 11 has a rectangular floor panel 30 and depending side panel 31 and 31a. The upper end of the arm 19 is pivotally attached to the side panel 31 by a rivet 32 while the upper end of the arm 19a is pivotally attached to side panel 31a by rivet 32a. Pivotal fasteners 33 and 33a enjoin the arms 19 and 19a and the side panels 23 and 24 at their respective intersections. The upper end of the brace 22 is constrained between the side panels 31 and 31a while the upper end thereof is free to slide on the undersurface of the floor panel 30 to accommodate the necessary locational displacement of the upper end of the brace 22 as required according to the selective adjustment as hereinbefore described in connection with the summary of the invention and as will be obvious to those skilled in the art.

A pair of guides 34 and 37 are attached along either side of the floor panel 30. A pair of plates 38 and 39 are slidably carried by the guides 34 and 35 as will be hereinafter described in further detail. The plates 38 and 39 may be extended from either end of the cover 11 as specifically illustrated in FIG. 2 to lengthen the support capacity of the cover member.

FIG. 4 further details the cover member 11. Shown is the floor panel 30 and the depending side panels 31 and 31a. The guides 34 and 37 are pear shaped to provide two pair of opposed longitudinally extending grooves 40 and 41. The plate 38 is slidably disposed in the grooves 40. A pair of lips 42 extend downwardly then inwardly along either edge of the plate 39 to slidably engage the grooves 41. Particularly noted in this view is the shape of the floor panel 30 and the two plates 38 and 39. Each slopes inwardly and downwardly from its outer edge to form a V shape to provide a trough along the extended cover member to cradle the flexible hose.

In the foregoing detailed description of the drawings the rivets 17 and 17a and the rivets 21 and 21a while being pivotal mounts are sufficiently tight to create friction between the appropriate arms and the side panels of the base. Hand pressure is used to adjust the cover member to the desired degree of tilt; thereafter it is retained by the previously described frictional force. Alternately one or several of the rivets could be replaced by a screw and wingnut whereby the wingnut could be loosened, the degree of tilt induced, and the wingnut subsequently tightened to retain the arrangement.

Various other changes in the device herein chosen for purposes of illustration will readily occur to persons

skilled in the art. Such modifications and variations, while not explicitly denoted in the foregoing detailed specification, do not deviate from the teachings of the present invention and are intended to be included in the scope and spirit thereof which is limited only by a fair interpretation of the following claims.

Having fully described and disclosed the invention, and which we conceive to be the presently preferred embodiment thereof, in such a manner as to enable those skilled in the art to understand and practice the same, we claim:

1. An adjustable support adapted to vertically and angularly position a length of sewage drain hose and further adapted to be collapsible for storage, said support comprising:

- (a) a substantially rectangular base;
- (b) a first pair of parallel support arms pivotally attached to said base and extending upward therefrom;
- (c) a rod extending between the upper ends of said first support arms and pivotally carried thereby;
- (d) a second pair of parallel support arms pivotally carried at one end by said rod;
- (e) a cover member pivotally receiving the upper ends of the second pair of support arms;
- (f) a third pair of parallel support arms pivotally attached to said base and extending upward therefrom, said third arms spaced longitudinally along said base from said first arms;
- (g) a brace member pivotally carried at one end by the upper end of said third arms and extending between said second arms and pivotally attached thereto at the point of intersection, the free end of said brace abutting the undersurface of said cover member;
- (h) a substantially horizontal elongate arm having indentations disposed along the under edge pivotally carried at one end by the brace member in approximate alignment with the pivotal mount of said brace member, said indentations capable of detachable engagement with said rod; and
- (i) means for adjustable retention of the angle between the first arms and said base and the third arms and said base.

2. The adjustable support of claim 1, wherein said cover member is V-shaped, sloping laterally downwardly inward from each side to a central longitudinal extending apex.

3. The adjustable support of claim 1, wherein said cover member includes an elongate plate supported by said cover member and in longitudinal sliding engagement therewith.

4. The adjustable support of claim 1, wherein said cover member includes a flange depending downwardly from either longitudinal edge, said flanges encasing and frictionally engaging the sides of said base during the collapsed position of said support.

5. The adjustable retention means of claim 1, wherein the pivotal attachment of said arms to said base includes frictional engagement therebetween.

6. The adjustable retention means of claim 2, wherein the pivotal attachment for one arm comprises a cylindrical fastening device forming a pivotal mount and capable of securing said arm to said base.

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