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EXTENSION ATTACHMENT FOR GUTTERING DOWNSPOUTS

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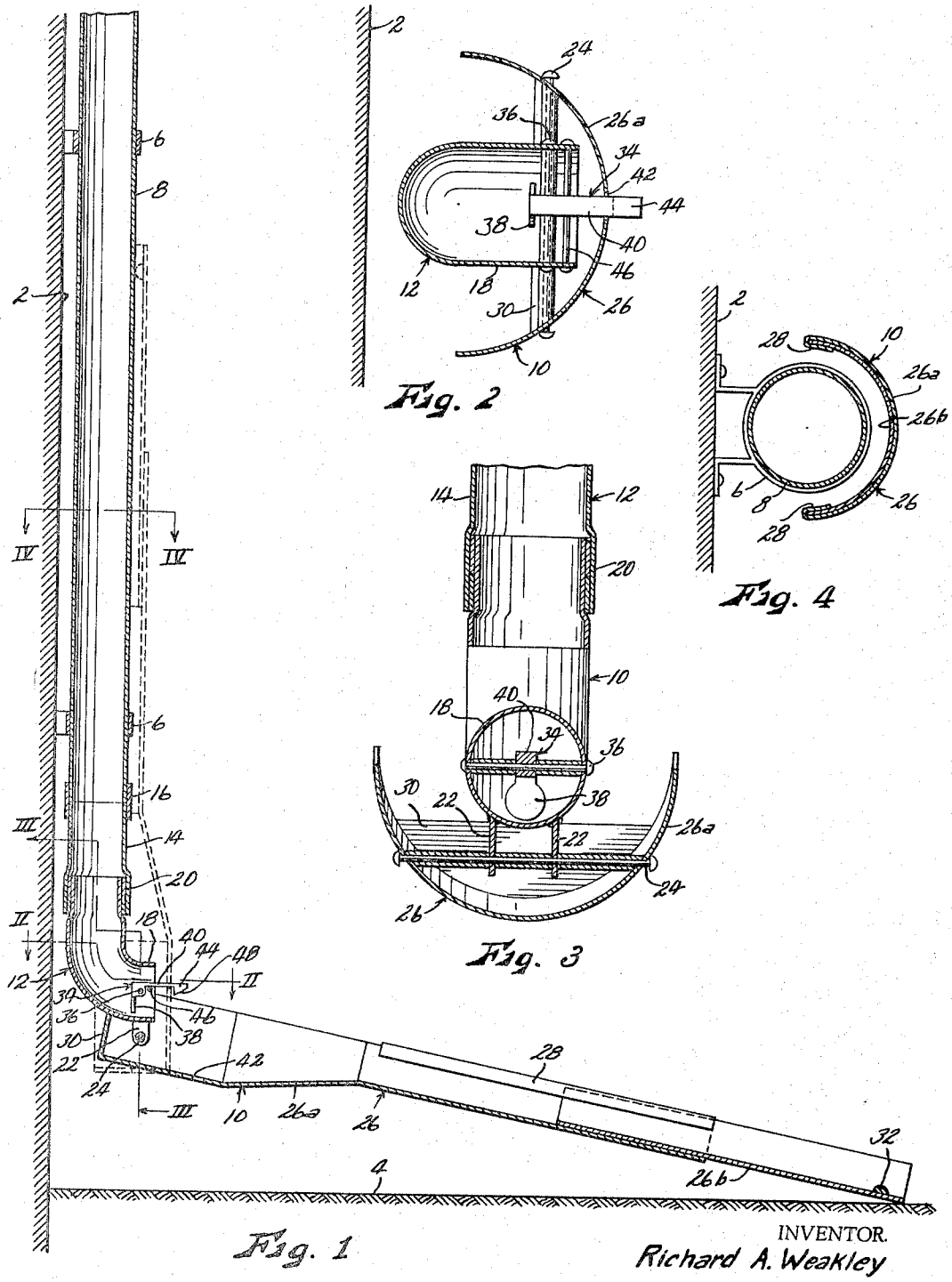


Fig. 1

Fig. 2

Fig. 3

Fig. 4

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EXTENSION ATTACHMENT FOR GUTTERING DOWNSPOUTS

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This invention relates to new and useful improvements in the system of disposing of drain-off water from the roofs of houses and other buildings by the use of gutters disposed about the edges of a roof and connected to pipes or downspouts for conveying the water to the ground. Such downspouts are sometimes connected to underground sewer connections to dispose of the water, but this is of course expensive, with the result that the water is often simply drained directly to the ground surface adjacent the building. Water so deposited quite often erodes unsightly holes and gulleys in the ground, and is sometimes injurious to the building foundation. These disadvantages could be avoided if the water could be conveyed to a nearby street, driveway or other paved surface at a greater distance from the building itself, but extension pipes from downspouts for this purpose are themselves unsightly, and form obstructions when mowing lawns and the like.

Accordingly, an important object of the present invention is the provision of a downspout extension having a normal rest position in which it extends vertically along and nests with the downspout itself so as to present a neat, attractive appearance, but being movable to a use position wherein it extends horizontally from the lower end of the downspout, so as to receive water from said downspout and convey it to an area substantially spaced apart from the downspout for disposal or use.

Another object is the provision of a downspout extension of the character described which is adjustable to convey water in various directions from and to different distances from the downspout.

A further object is the provision of a downspout extension of the character described wherein the extension may be set in said rest position and will automatically be moved to said use position in the event of rain, as evidenced by the flow of water through the downspout.

A still further object is the provision of a downspout extension of the character described including a latch releaseably securing the extension in its rest position, said latch being releasable by the flow of water through said downspout in the event of rain.

Other objects are simplicity and economy of construction, efficiency and dependability of operation, and adaptability and flexibility for use in a wide variety of applications.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the accompanying drawing, wherein:

FIG. 1 is a vertical sectional view of a downspout of ordinary design having an extension attachment embodying the present invention mounted operatively thereon, said extension being shown in its use position in solid lines and in its rest position in dotted lines,

FIG. 2 is an enlarged sectional view taken on line II—II of FIG. 1, with the extension in its rest position,

FIG. 3 is an enlarged sectional view taken on line III—III of FIG. 1, with the extension in its use position, and

FIG. 4 is an enlarged sectional view taken on line IV—IV of FIG. 1, with the extension in its rest position.

Like reference numerals apply to similar parts throughout the several views, and the numeral **2** applies to the exterior wall of a house or other building, the ground line adjacent the building being indicated at **4**. Affixed to wall **2** as by brackets **6** is a vertical downspout **8**, it being understood that the upper end of said downspout is interconnected with and receives water from guttering mounted along the eaves of the building for collecting rain water draining from the building roof. The downspout extension forming the subject matter of the present invention is attached to the lower end of downspout **8**, above ground level **4**, and is indicated generally by the numeral **10**.

Extension **10** includes a tubular body member **12** formed of sheet metal pipe of the same size and contour as downspout **8**, and being of elbow form, having a vertical leg **14** adapted to be interconnected at its upper end to the lower end of downspout **8** by a suitable coupling **16**, so as to receive water therefrom, and a horizontal spout **18** at the lower end of said vertical leg whereby to discharge water generally horizontally. Vertical leg **14** is provided intermediate its ends with a swivel connection **20**, whereby horizontal spout **18** may be turned to discharge water in any desired horizontal direction.

Affixed to and depending from spout **18** are a pair of ears **22** which support, at their lower ends, a horizontal pivot pin **24** at right angles to the direction of spout **18**. Pivotally mounted on said pin is one end of a generally semi-cylindrical, upwardly opening trough **26** or other conduit having a use position as shown in solid lines in FIG. 1 wherein it extends horizontally away from the downspout with its outer end resting on the ground. In this position, the trough receives water discharged from spout **18** of body member **12**, and conveys it, for example, to a point spaced well apart from the house or building, where it cannot damage the building foundation, or to a drive way, street or the like where it cannot cause erosion, or to water flower beds or the like which may be located under the eaves of the house or in other protected areas not normally reached by rainfall. The direction of extension of trough **26** can be altered by turning swivel connection **20** of body member **12**. The distance of extension of the trough can be adjusted by reason of the fact that said trough is formed in two sections, an inner section **26***a* supported by pivot pin **24**, and an outer section **26***b* telescoped slidably in guideways **28** formed along the edges of section **26***a*. Obviously, a greater number of telescoping sections could be provided, if desired, to permit still greater extension distances. In the use position of the trough, it underlies the discharge end of horizontal spout **18** of the body member, so as to receive water therefrom. Also, it extends behind the discharge end of the spout, and is provided with a partial end wall **30**, whereby to prevent water from splashing or flowing out of the rearward end thereof.

Trough **26** is pivotal from the use position shown in solid lines in FIG. 1, upwardly to a raised rest position as shown in dotted lines. In the rest position, the trough is substantially parallel to downspout **8**, and nests concentrically thereabout as best shown in FIG. 4, being supported by a rubber button **32** fixed in the free end portion of the trough and adapted to abut the downspout as shown. In this position, the center of gravity of the trough is disposed slightly closer to the downspout axis than is pivot **24**, so that the trough is overbalanced slightly toward the rest position, and tends to remain in the rest position, although it can be tilted outwardly so that its

center of gravity passes over the pivot, and thereafter fall to its use position, with a very slight force. Also, the bottom portion of the trough then overlies the open end of spout 18. Therefore, presuming that the desired direction of extension of the spout has been pre-set by turning swivel 20, the desired distance of extension has been pre-set by sliding trough section 26*b* in guideways 28, and the trough pivoted to its rest position so that it will present a neat appearance and will not obstruct the ground surface or inhibit the use of a lawn mower or the like, it will be apparent that in the event of rain and the resultant flow of water downwardly through the downspout, said water will emerge from spout 18 and impinge on the trough 26 at a point spaced above the level of pivot pin 24, thereby exerting a force on the trough causing it to fall to its use position, whereafter water will be conveyed by the trough in the direction and to the distance desired. If the trough is balanced rather delicately over pivot 24, only a slight flow of water will be necessary to accomplish this function.

While the over-balancing of the trough as described above may be entirely satisfactory in many cases, it will be apparent also that the somewhat delicate balancing of the trough over pivot 24 results in the possibility that wind could tip it to its use position even in the absence of any water flow. To prevent this occurrence, there is provided a latch mechanism including an L-shaped latch lever 34 supported at its angle on a pivot pin 36 which is mounted in spout 18 so as to traverse horizontally the discharge end of the spout. Said lever includes a vertically depending leg forming a vane 38 extending adjacent the bottom of the spout, and a horizontal leg 40 projecting from the spout and adapted to extend through a hole 42 formed therefor in the bottom of trough 26 when said trough is raised to its rest position, leg 40 being provided at its outer end with a depending latch tooth 44 adapted to engage the trough adjacent hole 42 to secure the trough in the rest position. Leg 40 is urged downwardly by gravity to hold tooth 44 in engagement, but is prevented from moving downwardly past a horizontal position by a stop-pin 46 also affixed in the spout. The outer face of latch tooth 44 is bevelled as indicated at 48, so that as the trough is manually raised to its raised position, it will engage and elevate the latch tooth for passage through trough hole 42, the latch therefore requiring no attention by the operator. Thereafter, the latch will hold the trough in its rest position even in high winds, vane 38 being protected from wind within the spout. However, water flowing down through the spout will engage vane 38 and pivot the latch to free tooth 44 thereof from the trough, so that the trough can again be pivoted to its use position by water pressure.

If the latch as just described is used, it is of course not essential that the trough be over-balanced toward its rest position with respect to pivot 24, as the latch could secure the trough even if it were over-balanced toward its use position. However, the over-balancing toward the rest position does serve a useful purpose in connection with the latch, in that it normally keeps all pressure off of the cooperating latch parts and prevents friction between the trough and latch tooth 44, so that only a very small flow of water is required to operate the latch.

Also, while the extension member 26 is illustrated as a trough so that it can nest with the downspout as shown for a neater, more compact appearance, it could also constitute a full cylindrical tube in all portions thereof except immediately adjacent spout 18. In that event, it could of course not nest with the downspout, but could be disposed parallel to and immediately adjacent the downspout when in its raised rest position.

It is considered that the above changes, as well as many other minor changes of structure and operation, could be made without departing from the spirit of the invention as defined by the scope of the appended claims.

What I claim as new and desire to protect by Letters Patent is:

1. An extension for use in connection with a downspout affixed to the side of a building and adapted to convey water downwardly therethrough, said extension comprising:

(a) an L-shaped tubular body member having a vertical leg adapted to be interconnected to the lower end of said downspout to receive water therefrom and a horizontal leg forming a spout at the lower end of said vertical leg and adapted to discharge water horizontally, and

(b) an elongated conduit pivoted at one end to said body member on a horizontal axis below the discharge opening of said spout, said conduit being pivotable downwardly from a raised rest position generally parallel to and adjacent said downspout, in which it overlies the discharge end of said spout, to a use position in which it extends horizontally outwardly from said spout in alignment therewith and is positioned to receive water therefrom, said conduit being urged from said rest position to said use position by water impinging thereagainst as it emerges from said spout.

2. A downspout extension as recited in claim 1 wherein the vertical leg of said body member is provided intermediate its ends with a swivel connection whereby the spout portion of said body member may be rotated adjustably about the axis of said vertical body member leg, and wherein said conduit is mounted on the spout portion of said body member.

3. A downspout extension as recited in claim 1 wherein said conduit is adjustably extensible to vary the length thereof.

4. A downspout extension as recited in claim 1 wherein the vertical leg of said body member is provided intermediate its ends with a swivel connection whereby the spout portion of said body member may be rotated adjustably about the axis of said vertical body member leg, and wherein said conduit is mounted on the spout portion of said body member, and wherein said conduit is adjustably extensible to vary the length thereof.

5. A downspout extension as recited in claim 1 wherein said conduit constitutes an open-topped trough, and wherein said trough rests concentrically about said vertical body member leg and said downspout when in its raised rest position.

6. A downspout extension as recited in claim 1 wherein the center of gravity of said conduit, as it is raised to its rest position, passes through and slightly past a vertical plane including the pivotal axis of the conduit, whereby said conduit is slightly overbalanced toward said rest position.

7. A downspout extension as recited in claim 1 with the addition of latch means mounted in said body member and operable to engage and secure said conduit in its rest position.

8. A downspout extension as recited in claim 1 with the addition of a latch member carried movably by said body member and operable to engage and secure said conduit releasably in its rest position, said latch member being biased toward its engaged position, said latch member including an operating member disposed within said body member and adapted to be engaged and moved by water flowing therein to disengage said latch.

9. A downspout extension as recited in claim 1 wherein the center of gravity of said conduit, as it is raised to its rest position, passes through and slightly past a vertical plane including the pivotal axis of the conduit, whereby said conduit is slightly overbalanced toward said rest position, and with the addition of a latch member carried movably by said body member and operable to engage and secure said conduit releasably in its rest position, said latch member being biased toward its engaged position, said latch member including an operating member dis-

posed within said body member and adapted to be engaged and moved by water flowing therein to disengage said latch.

10. A downspout extension as recited in claim **9** wherein the vertical leg of said body member is provided with a swivel connection whereby said spout may be pivoted about the axis of said vertical leg, and wherein said conduit is mounted on the spout portion of said body member and is longitudinally extensible to vary the length thereof.

No references cited.

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