L. P. HAZEN.

DOWN SPOUT BRACKET AND HANGER.

APPLICATION FILED AUG. 11, 1910.

1,034,444. Patented Aug. 6, 1912.

Fig. 1

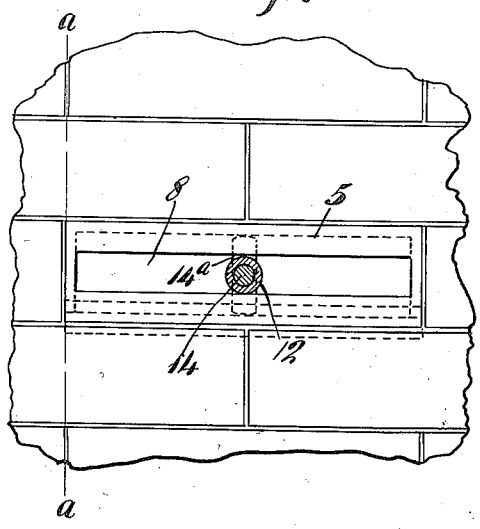


Fig. 2

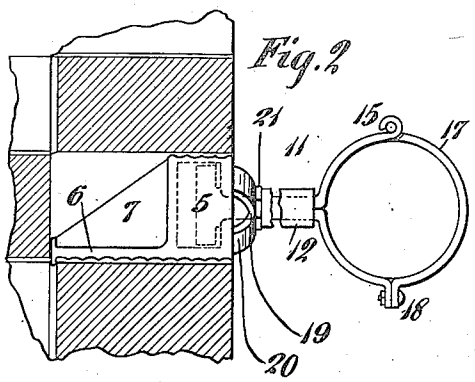


Fig. 3

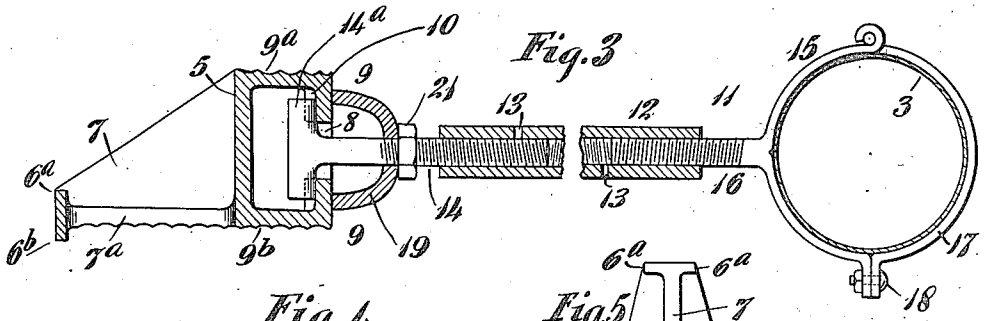


Fig. 4

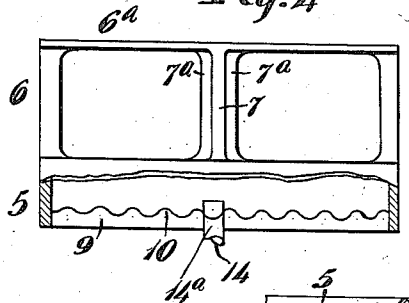


Fig. 5

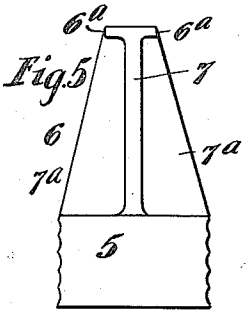


Fig. 7

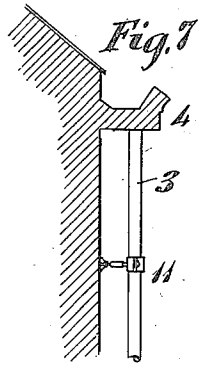
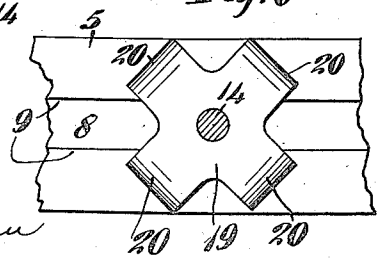


Fig. 6



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DOWN-SPOUT BRACKET AND HANGER.

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To all whom it may concern:

Be it known that I, LEVI P. HAZEN, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Down-Spout Brackets and Hangers, of which the following is a specification.

This invention relates to down-spout bracket or hanger devices and it has for one of its objects the direct downward arrangement of the spouting without elbows or bends from the eaves or gutter of a building to the point of discharge if desired.

Another object of the invention is the placing of the spouting at a suitable distance from the face of the building, thereby preventing any contact of the spouting with the wall and avoiding dampness to the wall and, also, avoiding the rotting of the pipe caused by such contact and, also, permitting the painting of both the said wall and the spouting without one interfering with the other.

Another object of the invention is to render repairs easily made, as the spout is not directly attached to the face of the building as heretofore but is supported at a suitable distance therefrom to suit the relative depth of the eaves or gutter above and the point of discharge or drain below.

Another object of the invention is to provide an anchor in the face of the building whereby the down-spout bracket is held so as to be adjustable transversely of said down-spout to suit any desired occasion.

Other objects of the invention and the details of construction thereof will be brought out in the following description of the accompanying drawings, in which,

Figure 1 is a fragmentary front elevation showing the wall of a building with the anchoring device embedded or mounted therein and, also, showing a cross-section of the inner end of the bracket-support for use with the down-spout; Fig. 2, a sectional elevation taken on the dotted-line *a*, *a*, of Fig. 1, but showing in connection with the said anchor device a fragmentary portion of the bracket-support for the down-spout, such bracket-support being shown at right-angles to the position it occupies in use; Fig. 3, a longitudinal section taken through the down-spout bracket-support and its connection with the anchor, the latter being shown in transverse section and partly in elevation and this view also showing the ring portion of said bracket-support at right-angles to the position it occupies or assumes in use; Fig. 4, a plan of the anchor but showing its upper, fore portion broken away to bring to view the lower corrugated or waved supporting flange or ledge for the inner end or head of the down-spout hanger or bracket; Fig. 5, a plan of a modified form of anchor adapted for use in connection with hanger devices for shafts or the like in concrete structures; Fig. 6, a fragmentary front elevation of the anchor showing the chair or brace seen in Fig. 3 and the bolt portion of the bracket-support, the said bolt being shown in cross-section; and Fig. 7, a fragmentary section showing the upper corner of the building, including the gutter or eaves, the perpendicular down-spout and one of my improved horizontal arms or bracket-supports for said down-spout.

1 indicates the wall of a brick, stone, or other composite structure, 2 my improved anchor device duly set in said wall, as best seen in Fig. 2, in the same space and position as that occupied by one of the ordinary bricks or the like therein; and 3 a perpendicular down-spout or drain-pipe leading from the gutter or eaves 4 at the top of the building.

The anchor 2 is composed of a hollow, rectangular box 5 having a horizontal rearward extension 6 and an inclined bracing-rib 7. Said box 5 has a longitudinally-slotted front opening or orifice 8 and the upper and lower edges 9, 9 of such opening are vertically corrugated or waved, as shown at 10 in Fig. 4, the purpose of which will be hereinafter referred to. The rearward-extension 6 of the anchor is made in skeleton form, as best seen in Fig. 4 and has rear raised and lowered edges 6^a and 6^b and ribs 7^a, 7^a for better use in embedding the anchor in place in the mortar or concrete used in setting and holding the brick or other elements comprising the front face of the building. For still further firmly seating the anchor in place, I provide the upper face 9^a and the lower face 9^b of the box 5 with longitudinal corrugations and, likewise, the bottom faces of the rear extension-frame 6, as best seen in Fig. 3. With such corrugations there is no slipping of the anchor from place, either forwardly or rearwardly, although the lower rear rib or edge 6^b will prevent the anchor slipping forwardly, as such rear

edge 6^b extends downwardly and laps over the edge of the mortar between the anchor and the brick below.

11, taken as a whole, indicates the hanger device or bracket-support for the down-spout. This bracket-support is composed of a coupling-sleeve 12 having internal right and left screw-threads and one or more holes 13 therein; a T-bolt 14 whose threaded end engages one of the internally-threaded ends of the said coupling-sleeve 12 and whose head 14^a engages the corrugated inner faces 10 of the anchor-box 5, as best seen in Fig. 3; and an encircling ring 15 having an extended screw-threaded shank 16, the latter engaging the other end of the internally screw-threaded portion of said coupling-sleeve. The ring 15 has an outer hinged portion 17 that is bolted at 18 over the down-spout, thereby making it convenient to apply the supporting-brackets to the down-spout when the latter is arranged in place, with due relation to the front of the building, and it is unnecessary to slide said supporting-brackets over the down-spout, or the latter through said rings, or a series of rings of a series of bracket-supports down the front of the building. The holes 13 in the coupling-sleeve are provided to receive the pointed end of any suitable implement used in turning the coupling-sleeve that is provided with oppositely-directed internal screw-threads, to draw the members 14 and 16 together to hold the down-spout in firm perpendicular position and in true alinement.

A suitable chair 19 is provided free to slide on the shank of the T-bolt 14, with its inner radiating arms 20 resting against the outer face of the anchor-box 5, as best seen in Fig. 6. A draw-nut 21 is provided on the shank of the bolt 14 to properly seat the chair 19 in bracing position and thereby firmly hold the T-head of the bolt 14 in locked position in a vertical pair of the series of corrugations along the inner faces of the slotted front of the anchor-box 5, as best seen in Fig. 3. In placing the supporting-bracket in position, the T-bolt 14 is inserted in the slotted opening 8 of the anchor-box with the T-head in a horizontal position and then the bolt is turned a quarter of a revolution so as to bring said T-head in a perpendicular position in engagement with the corrugated inner edges of said elongated opening 8 of the anchor-box; then the chair 19 is placed on the shank of the T-bolt 14 with the arms 20 resting against the outer face of the anchor-box 5; then the draw-nut 21 is turned firmly to place against the outer face of the said chair 19, thus readily securing the T-bolt in place and projecting horizontally from the front of said anchor-box 5; then the coupling-sleeve 12 is started on the outer threaded end of the shank of the T-bolt 14; then the shank 16 of the bracket-support is started to turn in the outer end of said coupling-sleeve 12; then the turning implement is applied to the coupling-sleeve in either of the holes 13 so as to rotate said coupling-sleeve and thereby draw the two threaded ends of the members 14 and 16 toward each other to bring the ring 15 in the desired position for receiving the down-spout; the hinged-member 17 of the bracket-ring 15 is then closed over the down-spout and duly locked by means of the bolt 18; and then the coupling-sleeve 12 is turned so as to adjust the down-spout into the desired perpendicular alinement.

In Figs. 2 and 3 of the drawings, the ring portion of the bracket-support is shown at right-angles to the position that it ought to be in when in use, (as such ring portion should be horizontal instead of vertical, the latter position being the one assumed in both of said views and so shown for convenience and to obviate the necessity of other additional views).

Instead of using the anchor for a supporting-bracket or hanger for down-spout, the rear-extension 6 can be made deeper horizontally and the anchor-box made shorter lengthwise, as best seen in Fig. 5, such rearward-extension having a rib 7 and side-ribs 7^a, both such ribs, or sets of ribs, forming the rearward-extension. Lateral flanges 6^a, 6^a extend at the rear of the rib 7 for the better engagement of the anchor in place in the concrete or mortar in which the anchor is placed for use. The anchor, as thus constructed, is best adapted for use in concrete work for hangers for shafting or the like and it can, of course, be used for the down-spout supporting-bracket, the same as the form of anchor before described. There would not be the same range of lateral adjustment, however, in the front orifice of the shorter anchor seen in Fig. 5 as there would be in the long anchor seen in Fig. 4, the greater range of adjustment being desired for the reason that the down-spout might take a perpendicular course from an opening in the gutter or eaves above that may be in a line to the right or left of the center of such anchor and, besides, the extended adjustment provided in the long anchor seen in Fig. 4 adapts the down-spout to be arranged at a slight angle away from the perpendicular in its course from the gutter above down to the discharge end below. Besides, in brick work, it is not always possible to have all of the anchors in the front face of the building in an exact perpendicular line, although in accurate setting of the brick such anchors ought ordinarily to be in perpendicular alinement and then the down-spout should always be in perpendicular alinement taken from the center of the anchor, as seen in Fig. 4, wherein the T-bolt is located at the center of the corru-

gated inner face of the anchor-box. Where accurate alinement of the anchors is effected, a long anchor-box would not ordinarily be required, but it is deemed best to make the anchor-box just the length of an ordinary brick and, in fact, the length, breadth and thickness of the anchor are those of the ordinary brick used in buildings so that such anchors readily fit in place and are not noticeable and do not mar the front of a structure in use.

The down-spout is readily applied in place or removed therefrom in using the bracket device herein shown and described and it is so spaced from the face of the building that there is no moisture or dampness present or lodged to affect either the down-spout or the brick-work. The painting of the face of the building is readily accomplished when the down-spout is spaced away from it, as it is, by means of the supporting-brackets herein and, furthermore, the down-spout can be painted and otherwise cared for in a very convenient manner. New joints in the down-spout can be readily made and inserted, or repairs to any of the joints likewise readily made by simply opening any of the hinged members 17, which is an extremely convenient provision in the use of the device herein.

I claim:—

A down-spout supporting-bracket comprising an internally-threaded coupling-sleeve, a T-bolt having a screw-threaded outer end adapted to engage within one end of said coupling-sleeve, a down-spout clamping-ring having an outer hinged or swinging-gate member and, also, an integral screw-threaded shank and with the latter adapted to engage within the other end of said coupling-sleeve, a spread-arm bracing-chair on said T-bolt, a draw-nut mounted on said T-bolt and adapted to engage said bracing-chair and an anchor-box having an elongated fore opening pierced therein and adapted for engagement by the T-head of said bolt.

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