

(No Model.)

2 Sheets—Sheet 1.

L. J. HARDY.
GUTTER AND SPOUT.

No. 326,647.

Patented Sept. 22, 1885.

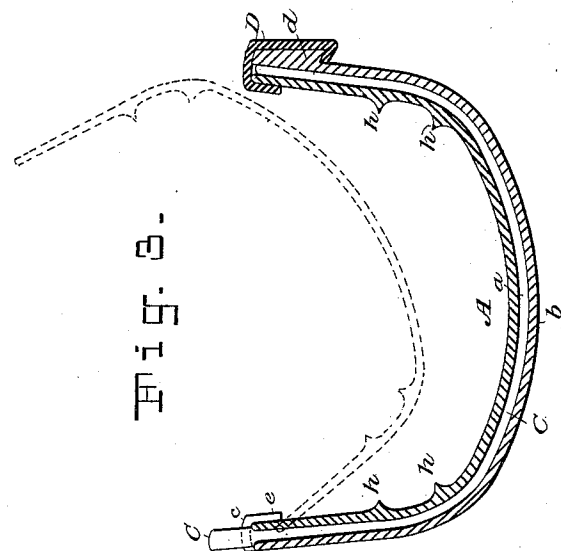


Fig. 3-

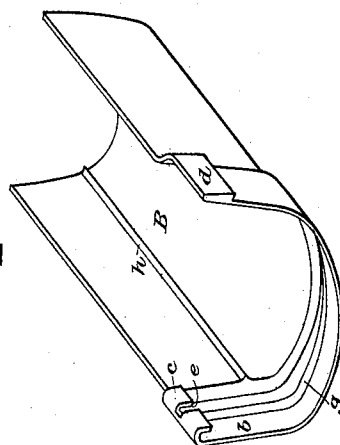


Fig. 4-

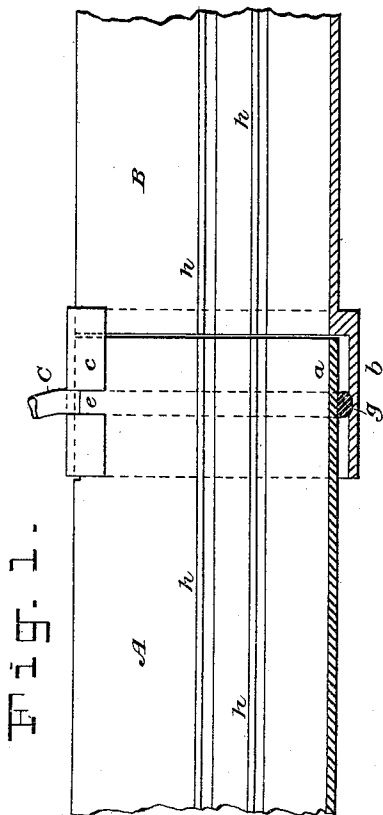
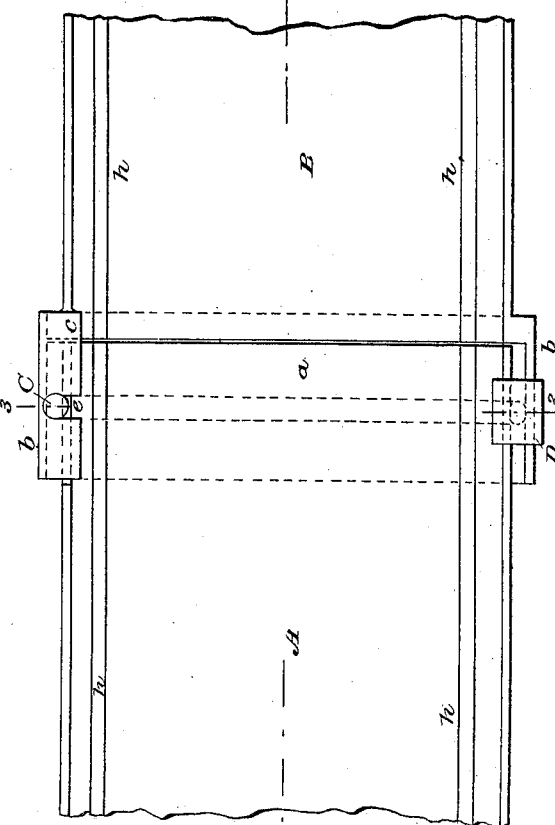


Fig. 1-

Fig. 2-



WITNESSES:

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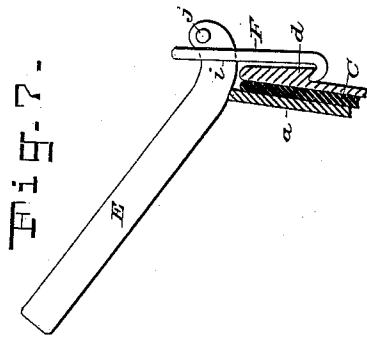
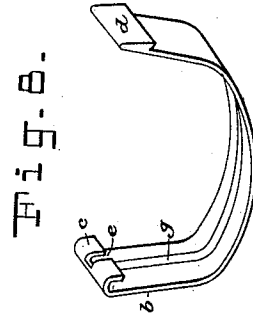
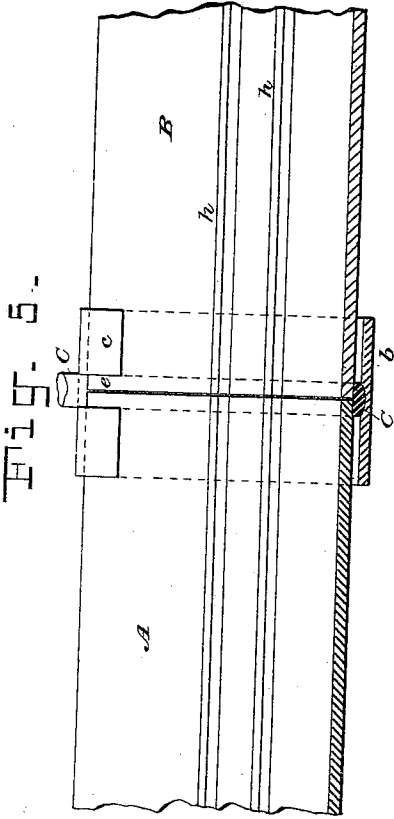
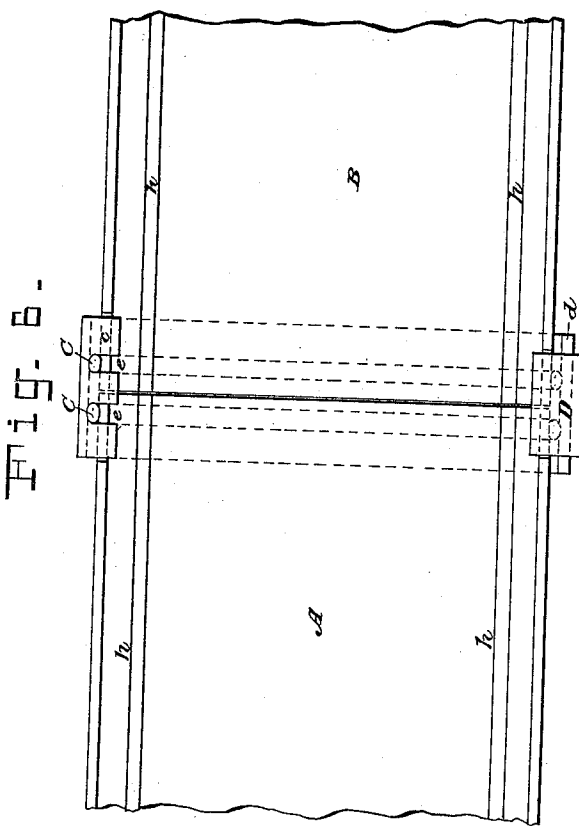
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WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

LOUIS JULES HARDY, OF ROUEN, FRANCE, ASSIGNOR TO HIPPOLYTE
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GUTTER AND SPOUT.

SPECIFICATION forming part of Letters Patent No. 326,647, dated September 22, 1885.

Application filed July 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, LOUIS JULES HARDY, a citizen of the French Republic, and a resident of Rouen, France, have invented certain Improvements in Gutters and Spouts, of which the following is a specification.

My invention relates, in the main, to that class of open spouts or gutters of which eaves-spouts are common examples; and the object of my invention is, in part, to provide improved means for joining together the sections of such gutters or spouts and, in part, to means for joining together, by metal couplings, specially-constructed sections of such gutters or spouts made from compressed paper, papier-maché, &c.

The class of gutters to which my invention belongs have usually been made of cast-iron in sections, one end of the section being made plain and the other end provided with a female socket or boxing to receive the plain end of the adjacent section. On the exterior faces of this boxing projecting shoulders or keepers are formed, and when the ends of the sections are fitted together with a packing-strip, usually of rubber, between them two clamps are employed—one on each side—which take under the keepers and over the edges of the sections to clamp them together. This construction calls for two extraneous clamps, and the clamp and keeper on the side next the wall or structure to which the gutter is attached forms an objectionable projection, which must be provided for in building the structure; or, in the case of structures already built, the latter must be cut away to make room for these projections. In making the joints in such gutters I have found also that the packing-strip is liable to be displaced or twisted.

The object of my invention is to avoid these inconveniences by so constructing the joint that only one extraneous clamp is required and no projection is formed at the joint on one side. Means are also provided for keeping the packing-strip in place while the joint is being made, and by my preferred construction the sections of gutter may be made of paper and the boxing made of metal.

In the drawings I have shown my invention as applied to gutters or spouts wholly of metal and as applied to gutters of paper and metal

combined. I will say, however, that the latter construction would serve also for all-metal gutters, and it would be possible, perhaps, to apply the first-named construction to gutters composed wholly of paper.

The first four figures of the drawings show the construction I usually employ for cast-iron gutters, Figure 1 being a longitudinal vertical mid-section through the joint of such a gutter, the section being taken in the plane indicated by line 1 1 in Fig. 2. Fig. 2 is a plan of the same. Fig. 3 is a transverse section taken through the joint in the plane indicated by line 3 3 in Fig. 2. Fig. 3 is a perspective view of one of the gutter-sections.

The application of my invention to a gutter made of paper with metal boxes at the joints is illustrated in Figs. 5 and 6, the former being a section similar to Fig. 1, and the latter a plan similar to Fig. 2. Fig. 7 is a view showing my special tool for pressing the parts together in making the joint, and Fig. 8 is a perspective view of the boxing made separate from the gutter-section.

As illustrated in the first four figures, all the sections of the gutter are constructed alike, each having one plain end and one end provided with a recessed enlargement or box to receive the plain end of the adjacent section. This box is in some respects similar to that on the end of water and gas pipes. A and B are like sections of gutter, the plain end *a* of section A fitting into the box *b*, formed in this case integrally with the section B. C is a packing-strip, of rubber or other suitable packing material, interposed between the inner face of box *b* and the exterior face of *a*. On the upper edge of box *b*, at the left, as seen in Fig. 3, is formed an inwardly-overhanging keeper, *c*, and on the upper edge of said box, on the opposite side, is formed an exteriorly-projecting keeper or shoulder, *d*, which is usually undercut at its lower edge. D is a clamp, which, when the joint is made, takes over the edges of the box *b* and the gutter-section *a* and under the keeper *d*, thus securely clamping all the parts together.

I will now explain the operation of joining the sections together. The packing strip C is first placed in the box *b*, with its end resting in a recess, *e*, formed in the keeper *c*. This

recess holds the packing-strip against any lateral movement while the joint is being made. After the strip C is placed the plain end *a* of the section A is put in place by inserting its upper edge under the overhanging keeper *c* on box *b*, as indicated in dotted lines in Fig. 3, and then pressing it down into box *b* onto the packing C to the position shown in full lines in Fig. 3—that is to say, until its upper edges are substantially on the same level with the edges of section B. This pressure may be effected in any way. I employ a special tool for the purpose, which is illustrated in Fig. 7. This tool comprises a curved lever, E, the end of which engages a slot at *i* in a fulcrum-hook, F. This hook is caught under the keeper *d*, and the convex side of the lever is brought to bear on the upper edge of section A, as clearly shown. A pin, *j*, in the end of the lever E prevents the latter from slipping out of the slot. The hook F does not occupy the whole width of keeper *d*, and ample room is left to apply clamp D before hook F is removed.

In order to enable the workman to place the packing-strip C properly, I usually form a slight groove, *g*, in the box *b*, as seen in Figs. 1 and 4. This forms a seat for the packing, and may be made of any suitable depth. I do not consider this groove as essential. I also prefer to employ in this construction a cylindrical packing-strip of rubber; but the form and material of the strip may be varied without departing from my invention.

Figs. 5, 6, and 8 illustrate the preferred construction where paper is employed for the gutter-sections. In this case the sections A and B are made plain from end to end, and alike at both ends. The box *b* is made of metal, usually cast or malleable iron, and separate, of course, from the gutter-sections, as seen in Fig. 8. Both sections are laid in the metal box and secured therein by keeper *c* and clamp D. One broad packing-strip may be employ-

ed, arranged under the joint formed at the adjacent ends of the sections, as seen in Fig. 5, or two strips may be employed, arranged as in Fig. 6.

I provide a foothold in the gutter or trough for the workman employed in cleaning it. This consists of ribs *h*, formed on the inner sides or walls of the gutter and extending lengthwise of the same. These offer no impediment to the flow of liquid through the gutter.

I do not limit myself to the special construction herein shown, and I reserve to myself the right to employ all proper equivalents of my invention and colorable variations thereof.

Having thus described my invention, I claim—

1. The combination, with two sections of a trough or gutter, of a box provided with an interiorly-arranged keeper on one side, and an exteriorly-arranged keeper on the other side, a packing-strip, and a clamp, all substantially as and for the purposes set forth.

2. The combination, with trough-sections A and B, made of paper, of a metal box, *b*, provided with an interiorly-arranged keeper, *c*, on one side and an exteriorly-arranged keeper, *d*, on the other side, a packing-strip, and a clamp, D, all arranged substantially as and for the purposes set forth.

3. A metal box, *b*, for joining together two sections of a gutter, provided with an interiorly-arranged keeper, *c*, with a recess, *e*, to hold the packing-strip, and an exteriorly-arranged, undercut-keeper, *d*, to receive the clamp, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS JULES HARDY.

Witnesses:

E. BURDENITT, Jr.,
E. FOND MEN.