

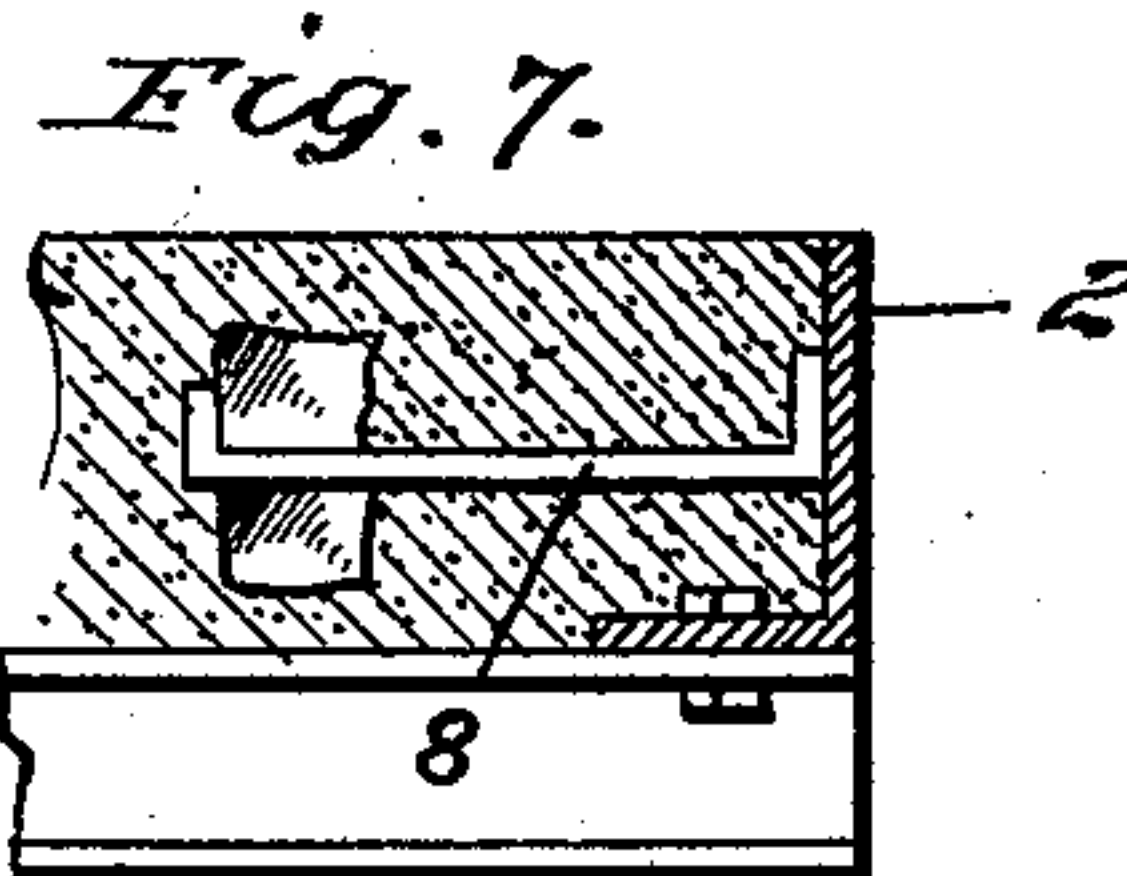
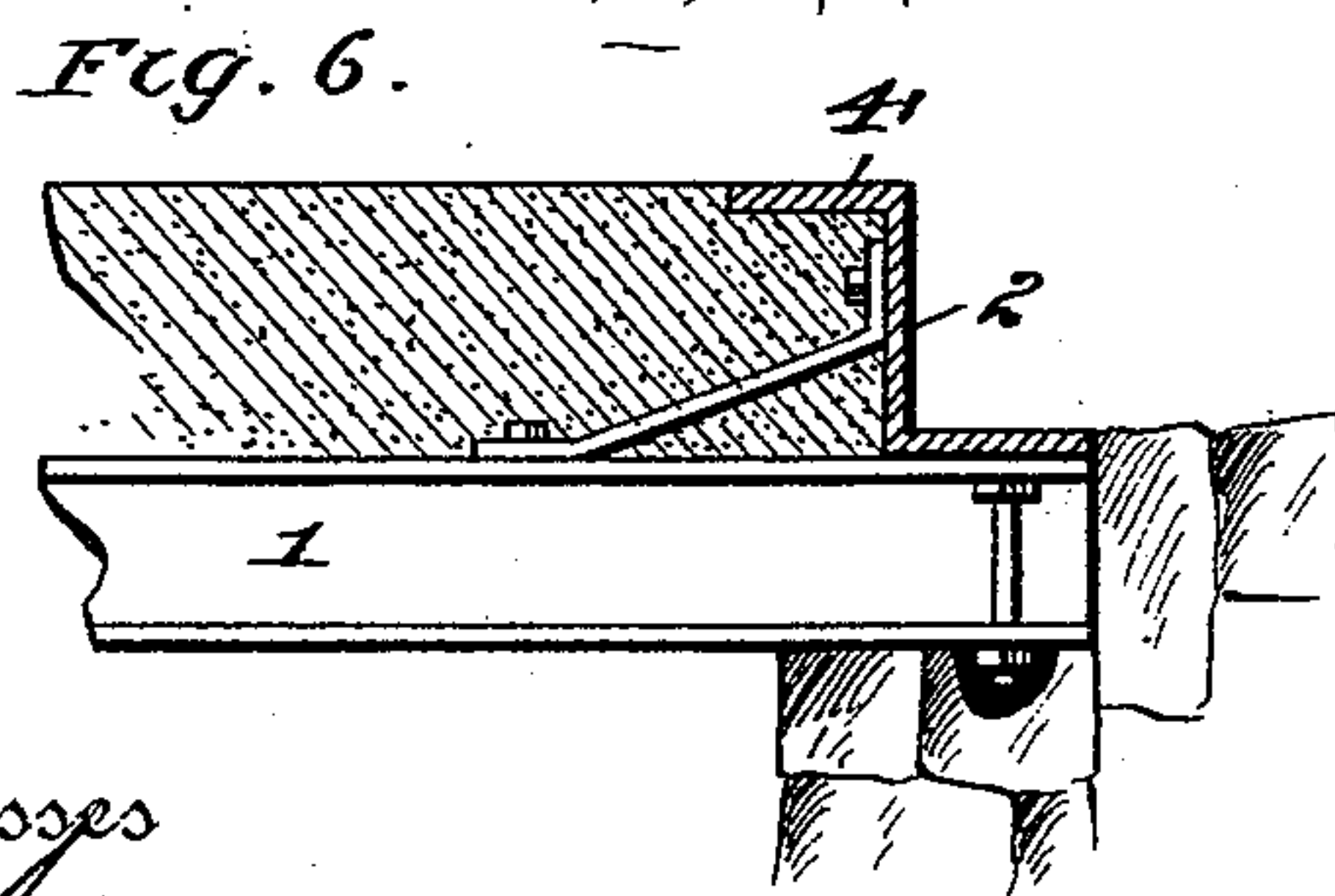
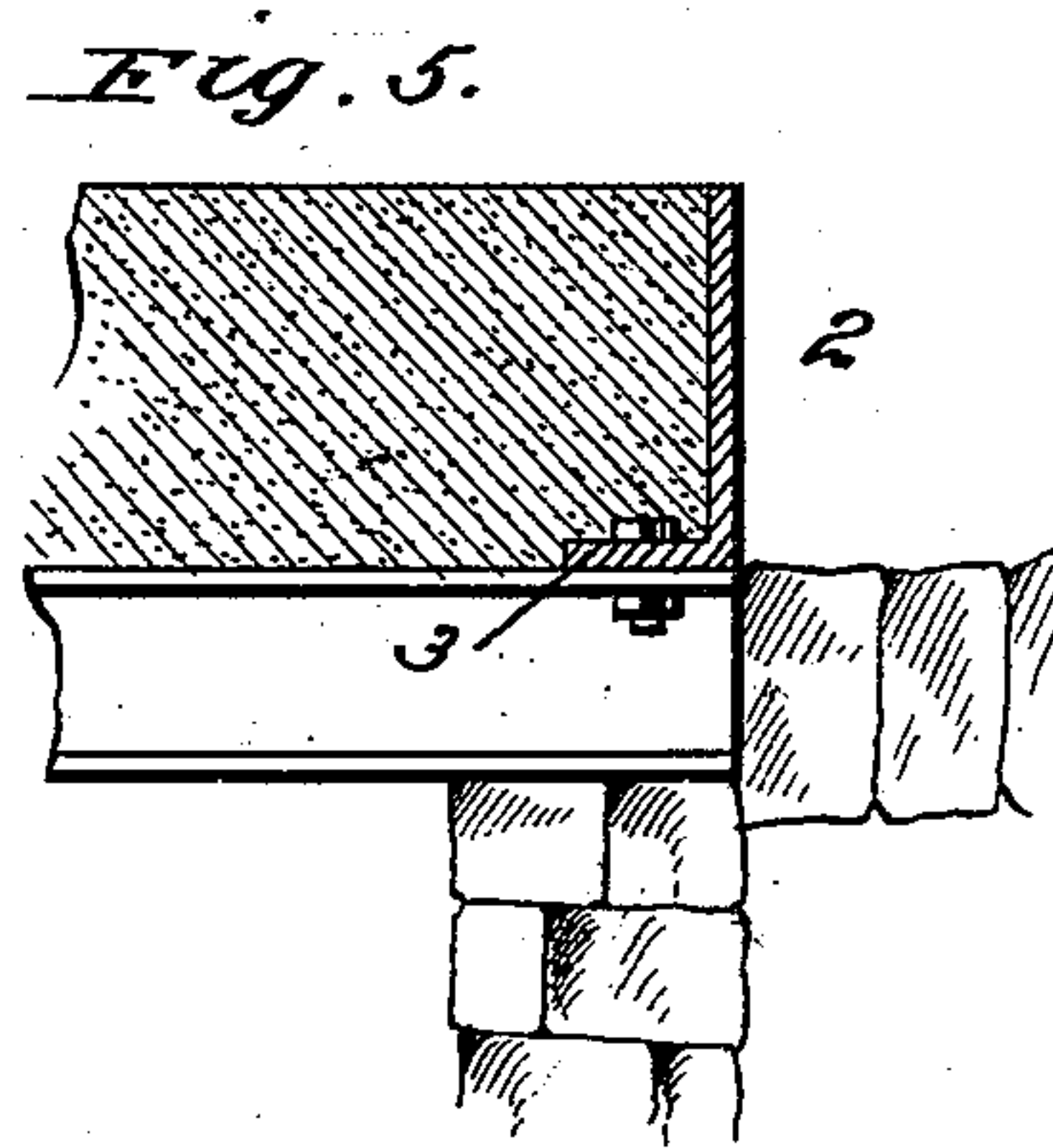
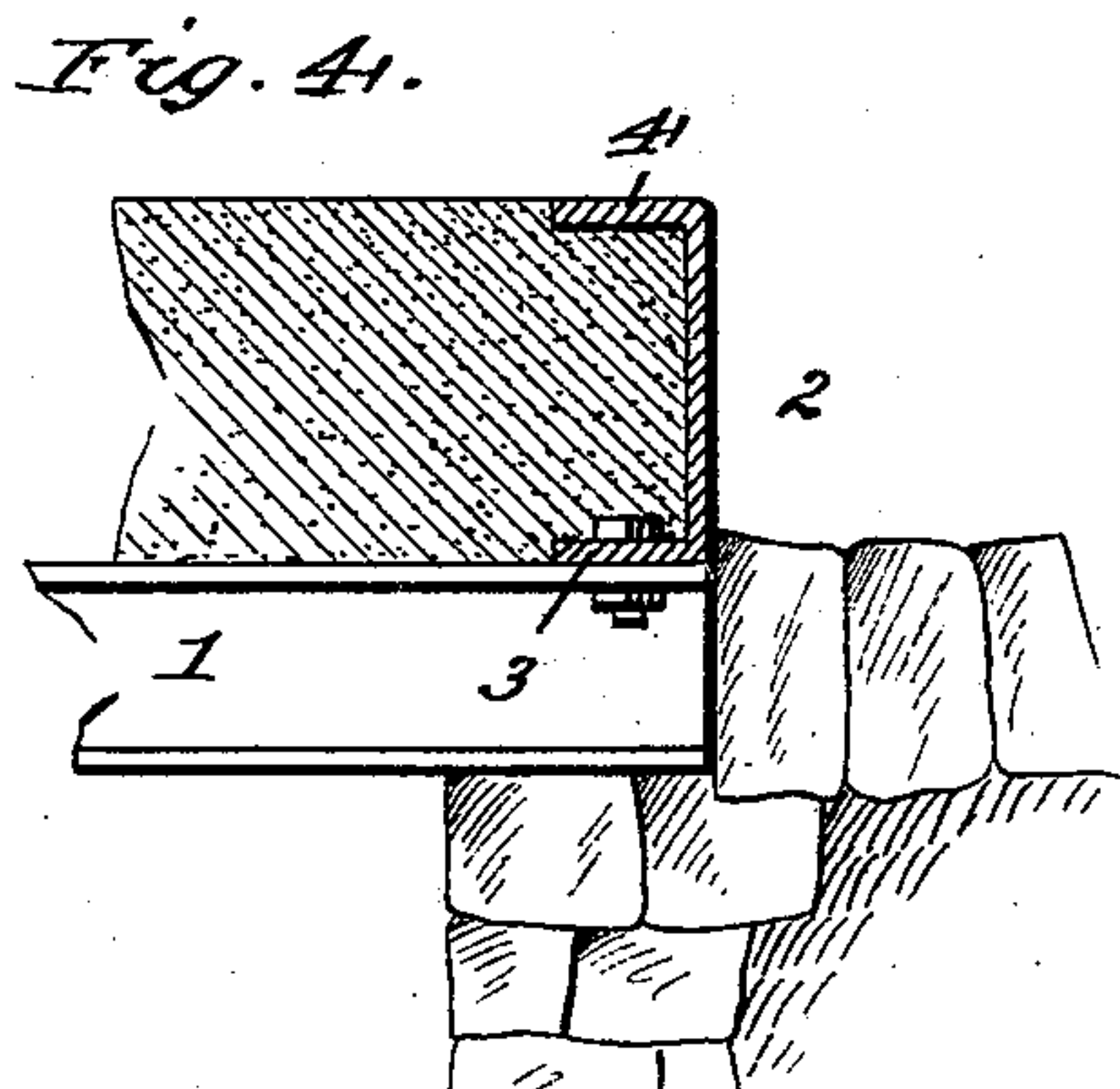
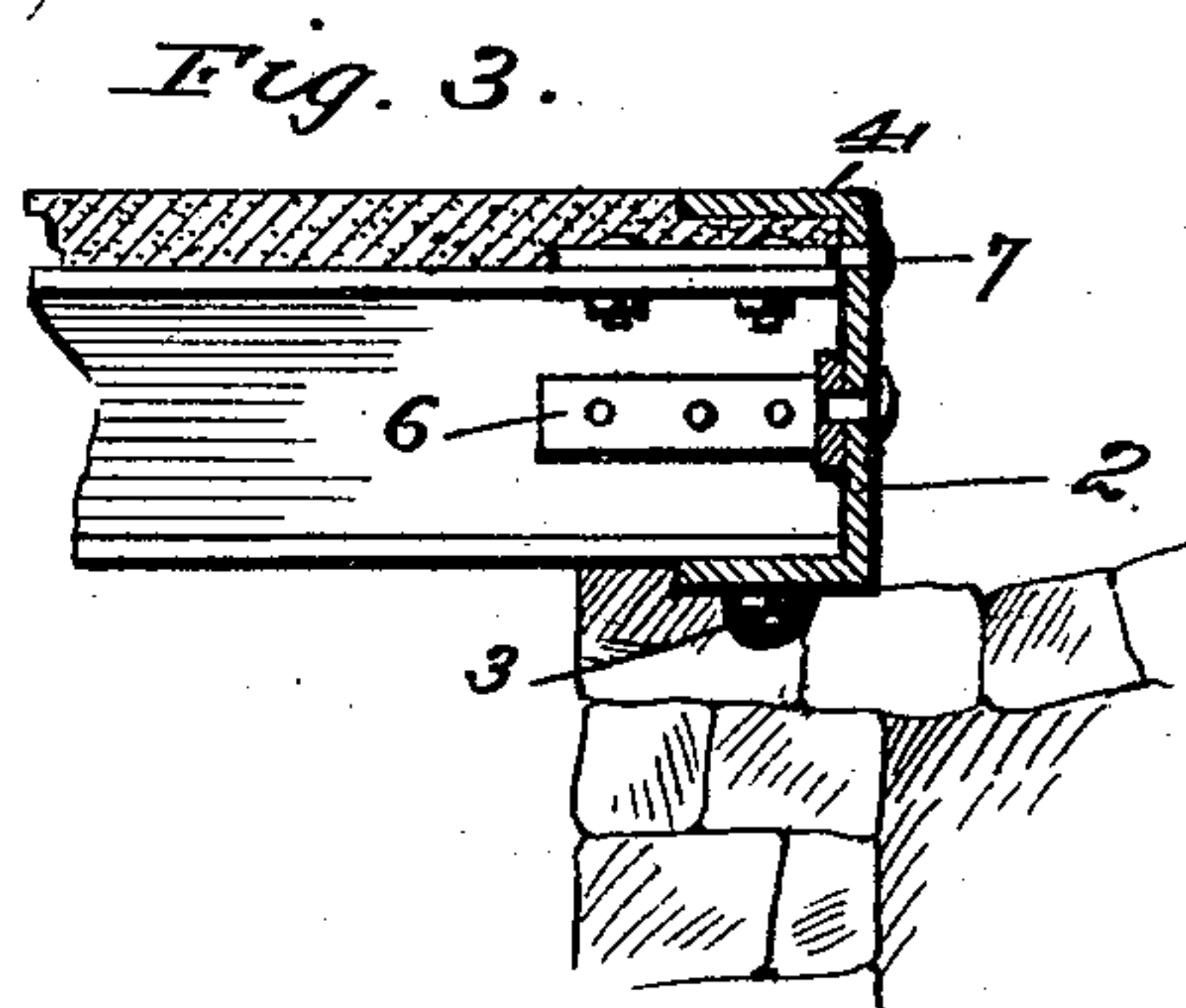
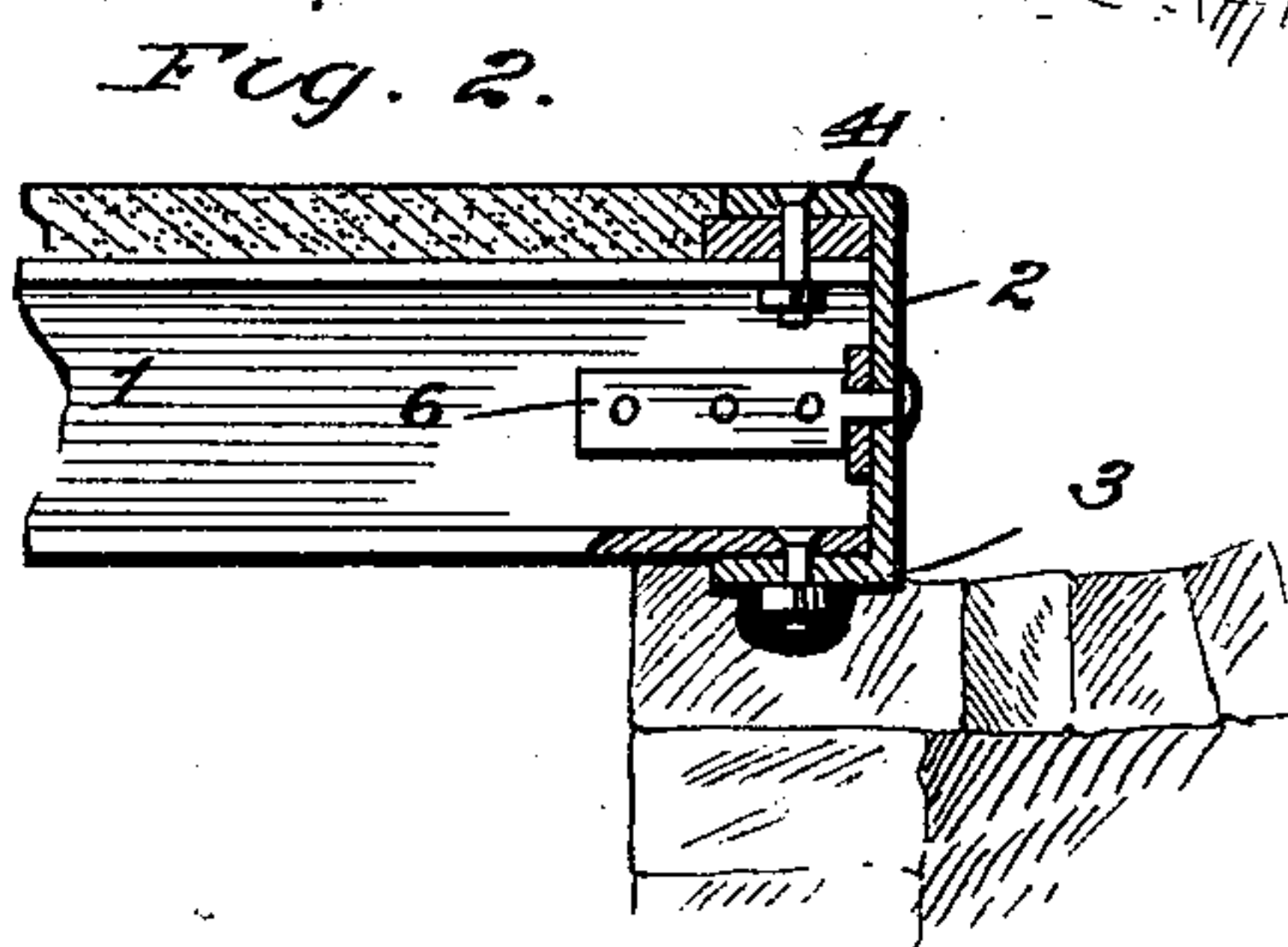
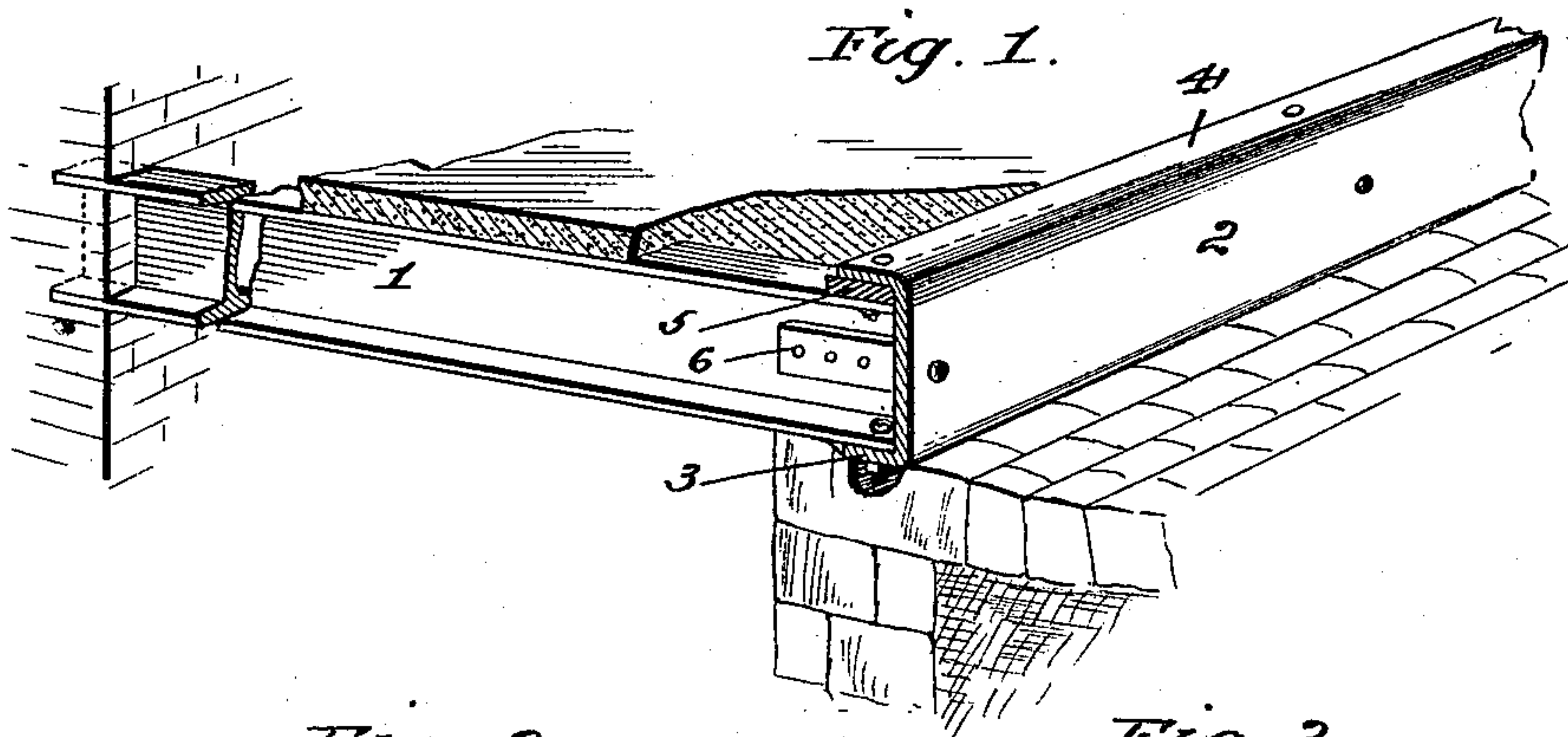
(No Model.)

2 Sheets—Sheet 1.

I. L. LANDIS.
METALLIC CURBING.

No. 534,441.

Patented Feb. 19, 1895.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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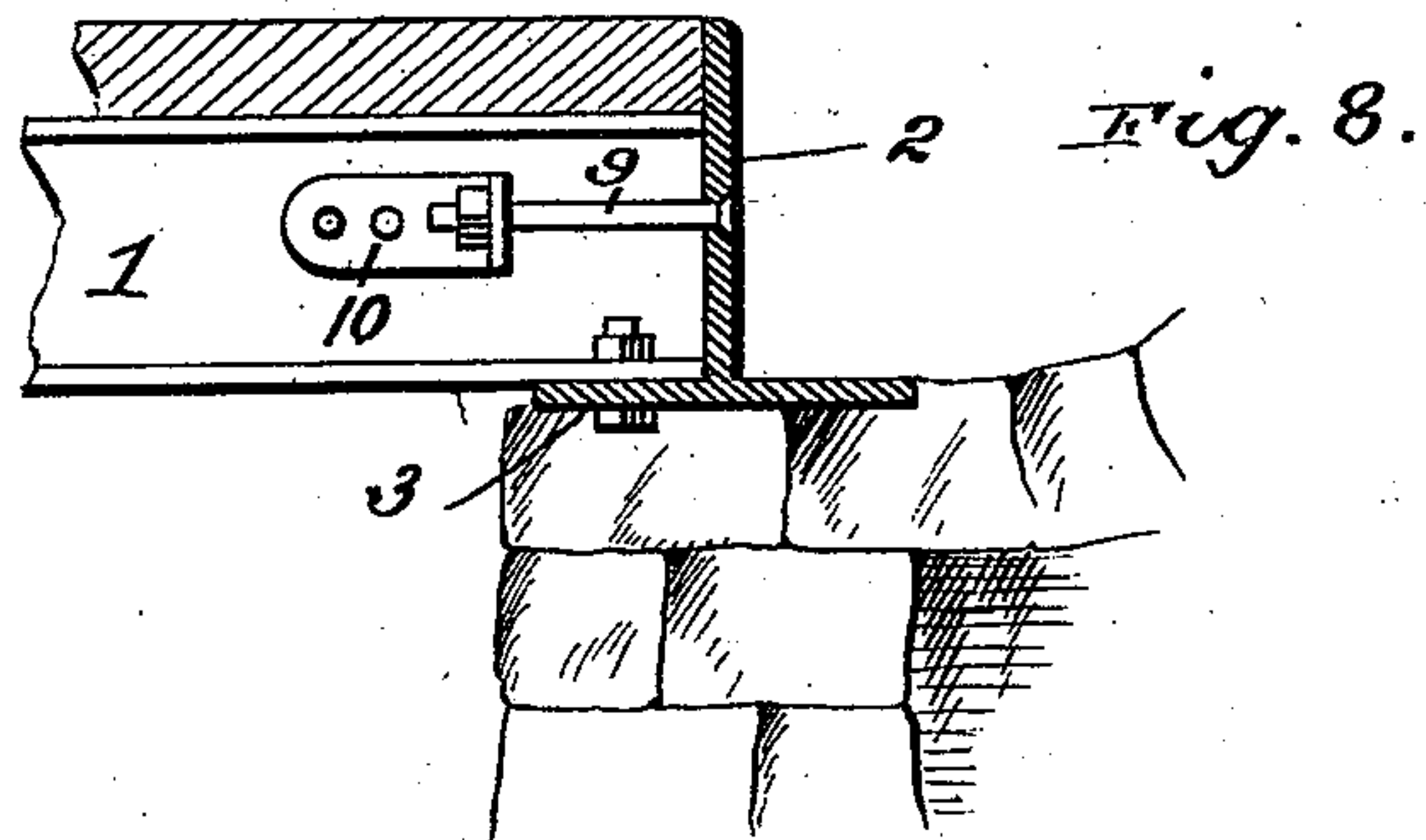


Fig. 8.

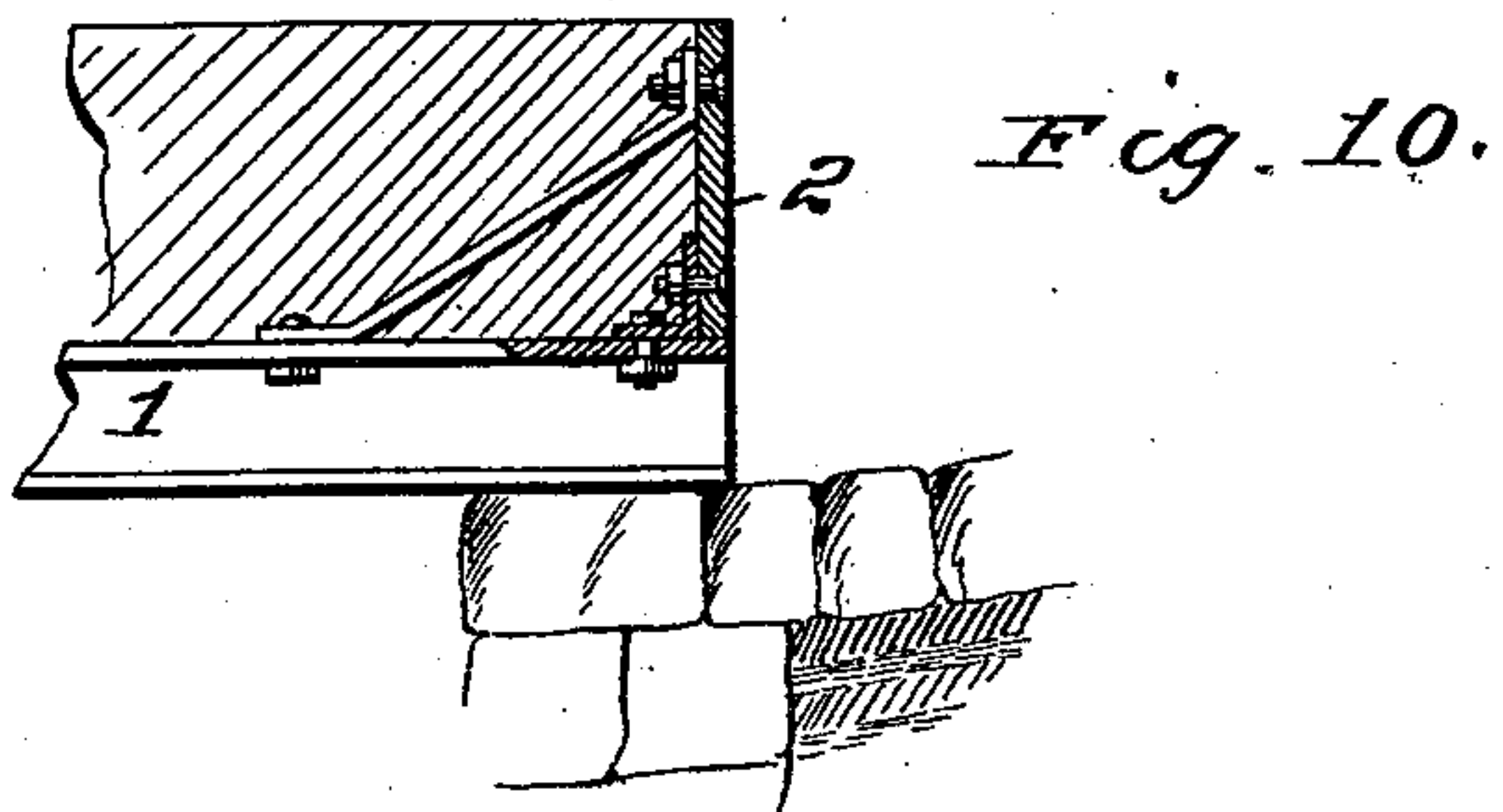
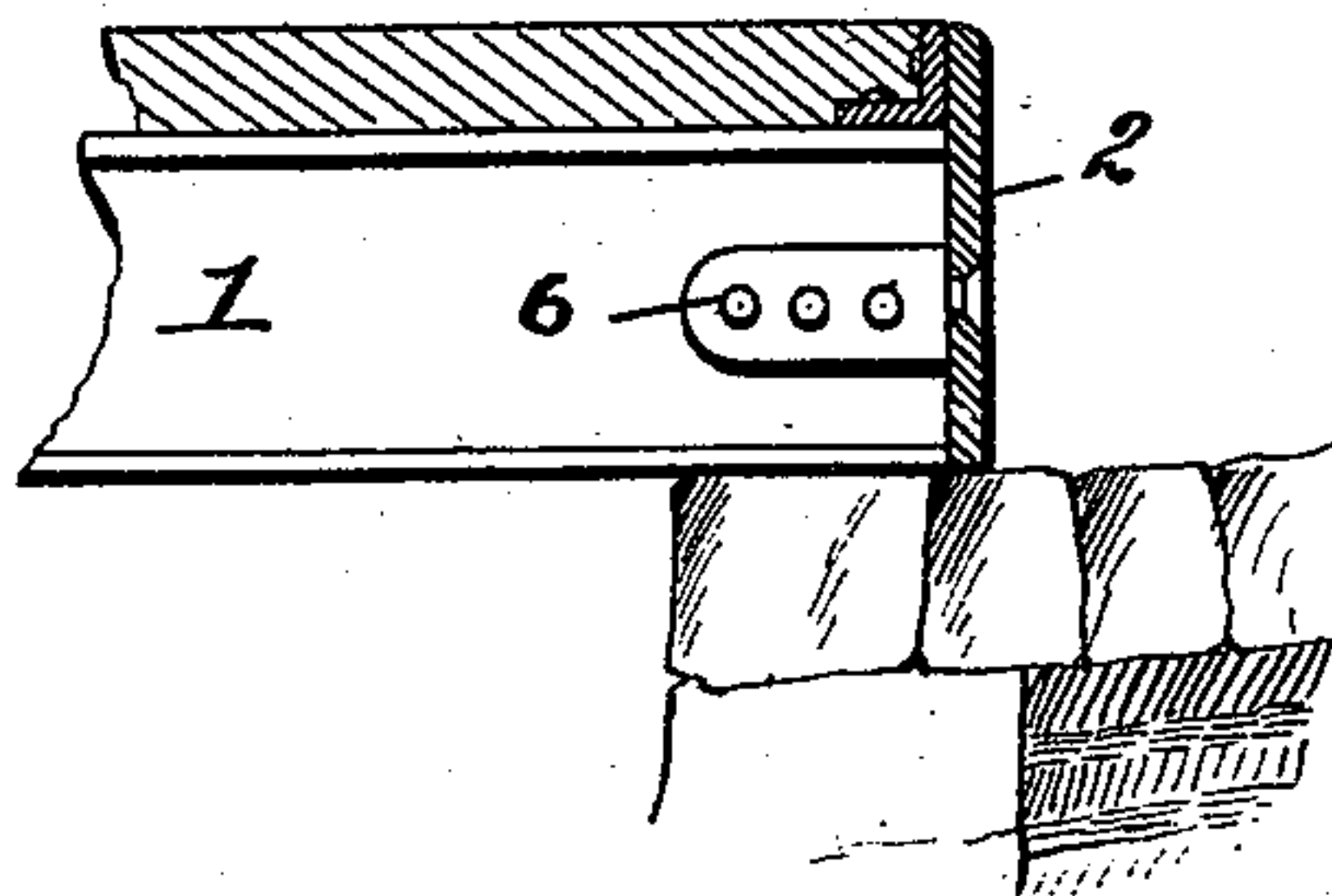


Fig. 10.

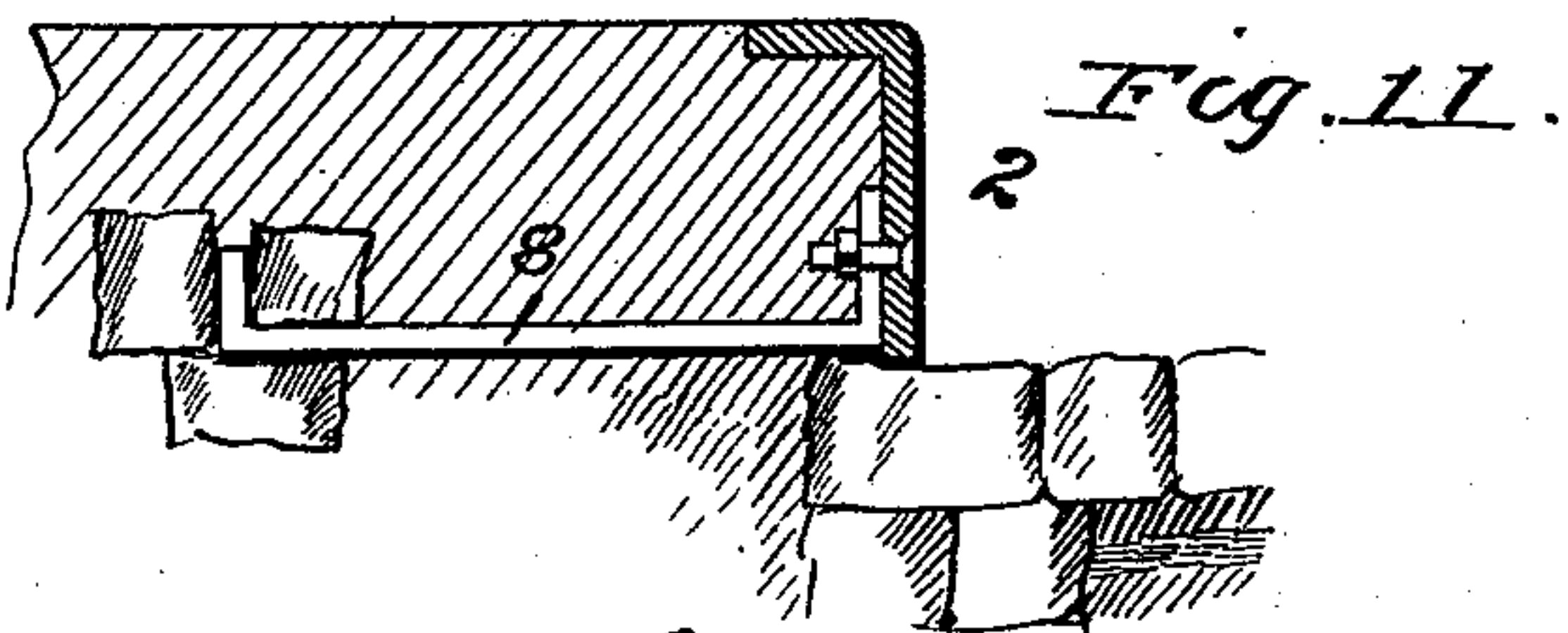


Fig. 11.

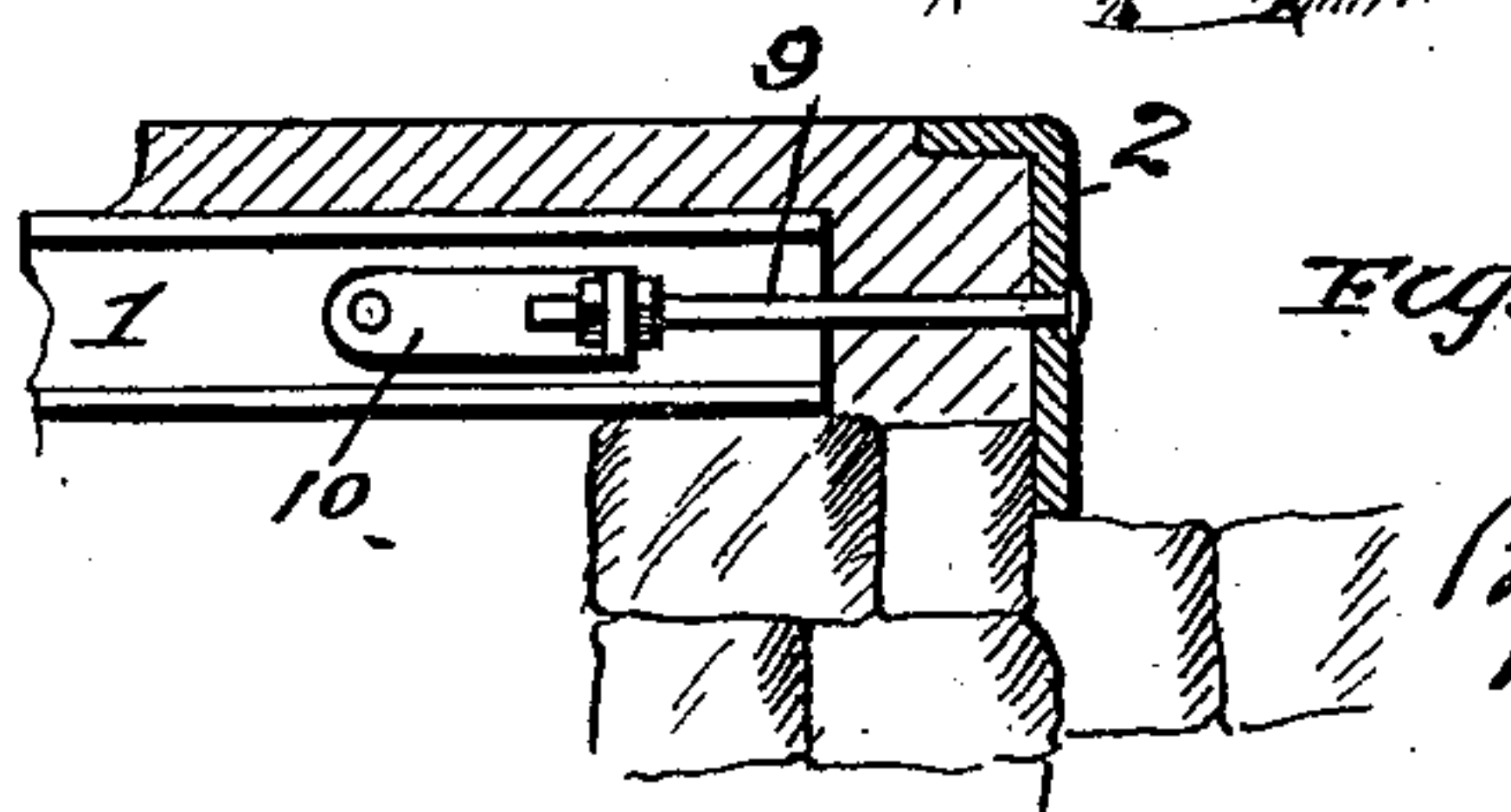


Fig. 12.

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UNITED STATES PATENT OFFICE.

ISRAEL L. LANDIS, OF CHICAGO, ILLINOIS.

METALLIC CURBING.

SPECIFICATION forming part of Letters Patent No. 534,441, dated February 19, 1895.

Application filed October 12, 1894. Serial No. 525,706. (No model.)

To all whom it may concern:

Be it known that I, ISRAEL L. LANDIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Curbing, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a new and useful improvement in metallic curbing, and it has for its object to provide a metallic curb particularly adapted for use on cement or artificial stone pavements and to that end it is
15 designed to provide a curb which may be easily and strongly secured to the transverse iron beams which support the side-walk when the space under it is used for vaults, as is the practice in most large cities.

20 The invention consists in the novel combination and arrangement of parts more fully hereinafter described.

In the drawings:—Figure 1 is a sectional perspective view of my improved curbing secured in place. Fig. 2 is a transverse sectional view thereof. Fig. 3 is a sectional view of a slight modification. Fig. 4 is a sectional view showing the curbing secured on top of the side-walk supporting beams. Fig. 5 is a
25 modification of the curb shown in Fig. 4. Figs. 6, 7, 8, 9, 10, 11 and 12 show other modifications of the curb, and fastening devices.

In the drawings the numeral 1 designates the iron beams which support the side-walk, and, in the present construction, tie the metallic curb to the house-wall. The outer ends of these beams rest on the outer wall of the side-walk vault, and their inner ends are secured in the house wall, as clearly shown in
30 Fig. 1. Connecting these beams and preferably embracing their outer ends is the curb 2 which is a flanged iron beam the preferred form of which is a **E**-shaped channel-bar iron as shown in Fig. 1. The horizontal flanges of
35 this channel iron 2 extend inwardly, the lower one 3 fitting under the lower sides of beams 1, and the upper one 4 extending over the upper sides of said beams, said flanges being secured to beams 1 by suitable bolts, the heads of the
40 bolts in flange 4, being counter-sunk as shown. The curb 2 is further secured to the beams 1

by the plates 6, which are secured to the vertical webs of the beams, their outer ends passing through the vertical face of the curb and being riveted thereto on the outer side, as
55 shown.

The upper flange 4 of the curb 2 may extend above the upper sides of the beams 1 and the space between it and the upper sides of the beams filled by a bar 5 of iron or wood,
60 to reinforce the upper flange of the curb as shown in Fig. 2.

When the beams 1 and the curbing 2 are in place and securely bolted together, the cement side-walk is filled in, entirely covering the
65 beams, its upper surface being brought to a level with the upper surface of the flange 4 of the curb 2 as shown.

In Fig. 3, the bar 5, and the bolt passing through the flange 4, is dispensed with and a
70 plate 7 is secured to the upper side of the beam 1 its outer end passing through the vertical wall of the curb 2 and being riveted or bolted thereto on its outer side in a similar manner to plate 6. This method of fastening
75 obviates the necessity of counter sinking the heads of the bolts and leaves a perfectly smooth upper surface to the side-walk.

In Fig. 4, I have shown the channel-iron curbing 2 secured on the top of the beam 1,
80 the lower flange of the curbing being bolted to the upper side of the beams. This form of curb is desirable when the cement pavement is entirely above the beams 1, as shown in this view.

In Fig. 5, is shown a modification of the curbing, in which an **J**-shaped angle iron is used, the lower inwardly extending flange thereof being bolted to the beams 1, and the top of its vertical wall being level with the
85 upper surface of the side-walk.

In Fig. 6 is shown another modification of the curbing. In this construction a **Z**-shaped angle-iron is used, its lower outwardly extending flange being bolted to the beam 1 and
90 forming a part of the gutter, and its upper inwardly-extending flange being level with the upper surface of the side-walk.

In Fig. 7 is shown an additional fastening device. An **J**-shaped curbing is used bolted
100 to the upper side of the beams 1, and an inwardly extending bar 8, having its inner end

bent as shown is bolted to the inner side of the vertical wall of the curb. This bar is about midway the height of the curb, and when the cement pavement is laid, is securely embedded therein.

I have shown in Fig. 8, a **L**-shaped angle-iron curbing. The inwardly-extending member of the horizontal flange of said angle-iron extends under the transverse beams which support the side-walk, and is secured thereto in any suitable manner. This curbing is further secured to the beams 1 by bolts 9 which are passed through the vertical member of the angle-iron, their inner ends being secured to the brackets 10 by suitable adjusting nuts, said brackets being rigidly secured to the beams, as shown. The outwardly extending member of the angle-iron forms the inner part of the gutter as shown. The upper edge of the vertical member of the curbing is flush with the upper edge of the side walk.

In Fig. 9 is shown a vertical plate secured to the forward edges of the beams 1, said plate extending from the lower edges of said beams to the upper surface of the side-walk. This plate is connected to said beams in any suitable manner, and that portion which extends above the beams 1 is braced by an angle iron as shown.

In Fig. 10 the vertical plate forming the curb is secured on top of the beams which support the side walk, its lower edge resting on their upper sides near the outer ends thereof, the upper edge of the plate being flush with the upper surface of the side walk. In this form the plate forming the curb is braced in any suitable manner.

In Fig. 11 is shown an **7**-shaped iron curb secured to a cement side walk, the vertical member of said iron forming the vertical wall of the curb and the horizontal member extending over the side walk, its upper edge being flush with the upper surface of the side walk. This curb is secured in position by means of rods which extend into the cement walk and are anchored therein as shown.

In Fig. 12 the angle iron forming the curb is supported a suitable distance from the outer ends of the beams which support the side walk by means of the horizontal bolts 9 whose inner ends are secured in the brackets 10 carried by said beams, as in Fig. 8, their outer ends passing through the vertical member of the curb. The space between the ends of the beams 1 and the curb is filled in with the cement forming the side walk, and the upper or horizontal member of the curb is flush with the upper surface of the side walk.

From the foregoing it will be readily understood that I provide a curb of simple construction which may be easily and strongly secured to the side-walk and which when in position will protect the gutter-edge of the

side-walk from damage by vehicles or other causes.

It will also be seen that steel bars of any other shape may be used and other forms of fastening may be employed without departing from the scope of my invention.

Having thus fully described my invention, what I claim is—

1. The combination of the iron beams which support the side-walk, supports for said beams, a metallic curbing secured to the outer ends of said beams, and a side walk supported by said beams, its upper surface being approximately flush with the upper edge of the curb, substantially as described.

2. The combination of the transverse beams which support the side walk, supports for said beams, a flanged iron beam secured to the outer ends of the beams supporting the side-walk, and a side walk supported by said transverse beams, substantially as described.

3. In a metallic curbing, the combination of the transverse beams supporting the side-walk, supports for said beams, a channel-iron secured to and embracing the outer ends of the beams which support the side-walk, and a side-walk supported by said transverse beams the upper surface of which is flush with the upper surface of the channel iron, substantially as described.

4. The combination of the transverse beams which support the side-walk, supports for said beams, a channel iron bar, secured to the outer side of said beams, the lower flange of the channel iron fitting under the under side of the transverse beams and the upper flange fitting over the upper surface of said beams, and a reinforcing bar interposed between the upper horizontal flange of the channel iron and the upper surface of the transverse beams, and a side-walk supported by said transverse beams, substantially as described.

5. The combination of the transverse flanged beams which support the side-walk, supports for said beams, a channel-iron secured over the outer ends of these beams and having an upper and lower horizontal flange, these flanges fitting above and below the transverse flanged beams and bolted to the flanges thereof, plates secured to the transverse beams, their outer ends passing through the vertical wall of the channel-iron and riveted thereto on the outer side thereof, and a side-walk supported by the transverse beams, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ISRAEL L. LANDIS.

Witnesses:

R. HOFFHEINS,
J. MILLER.