

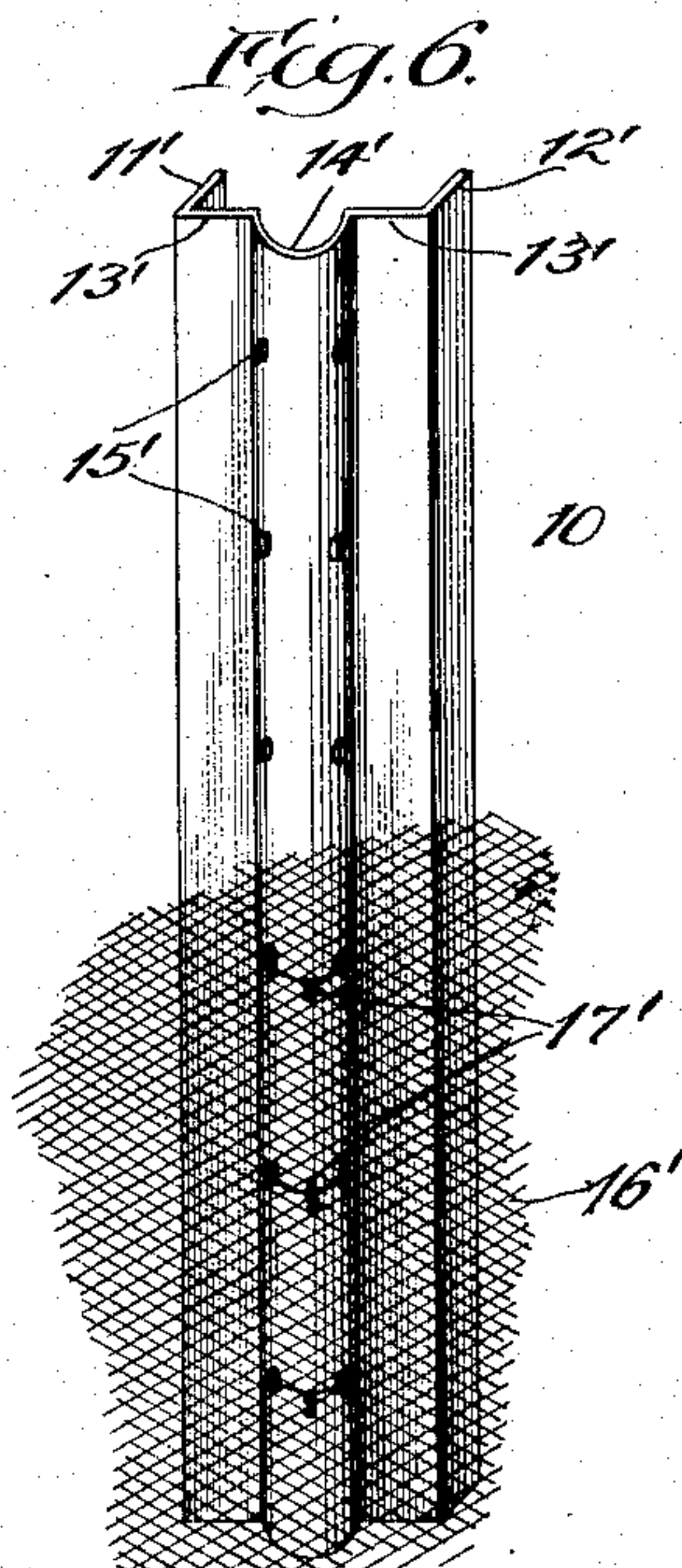
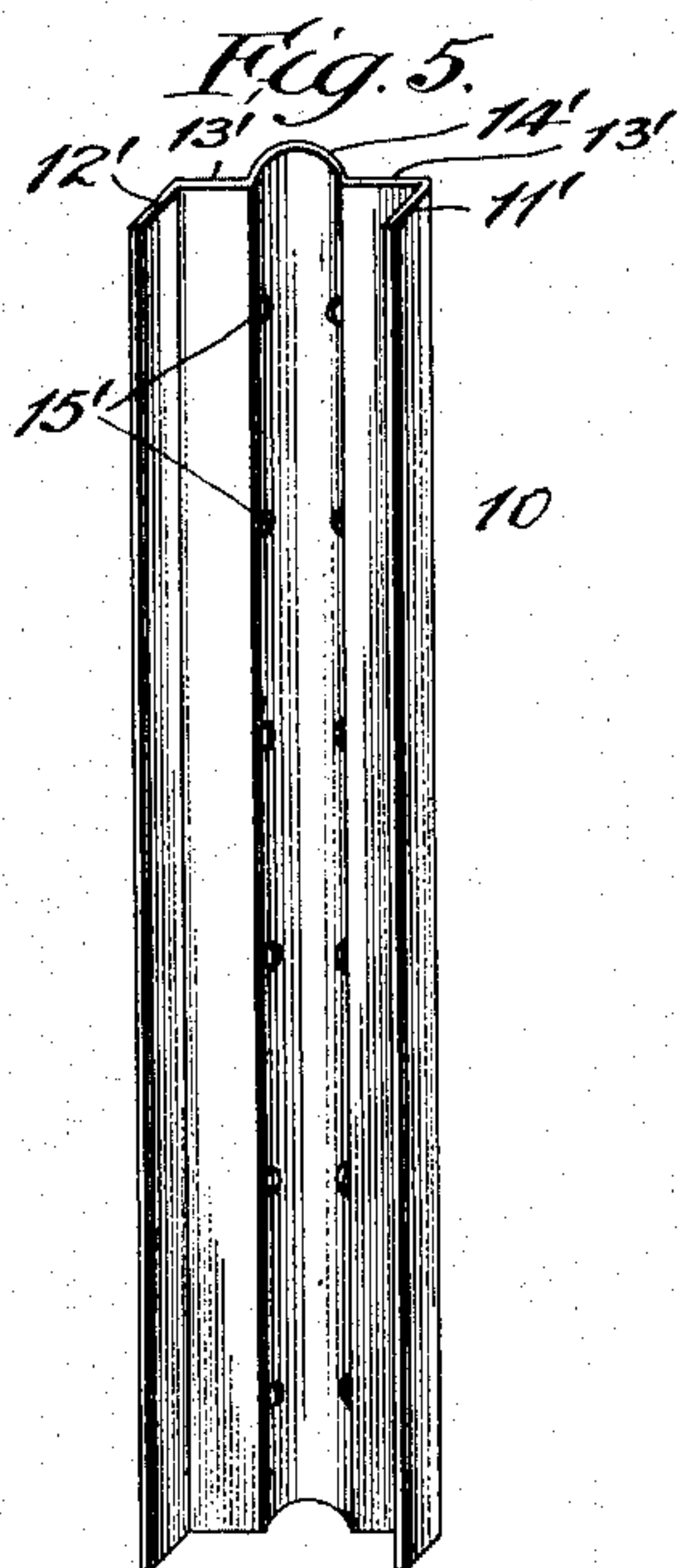
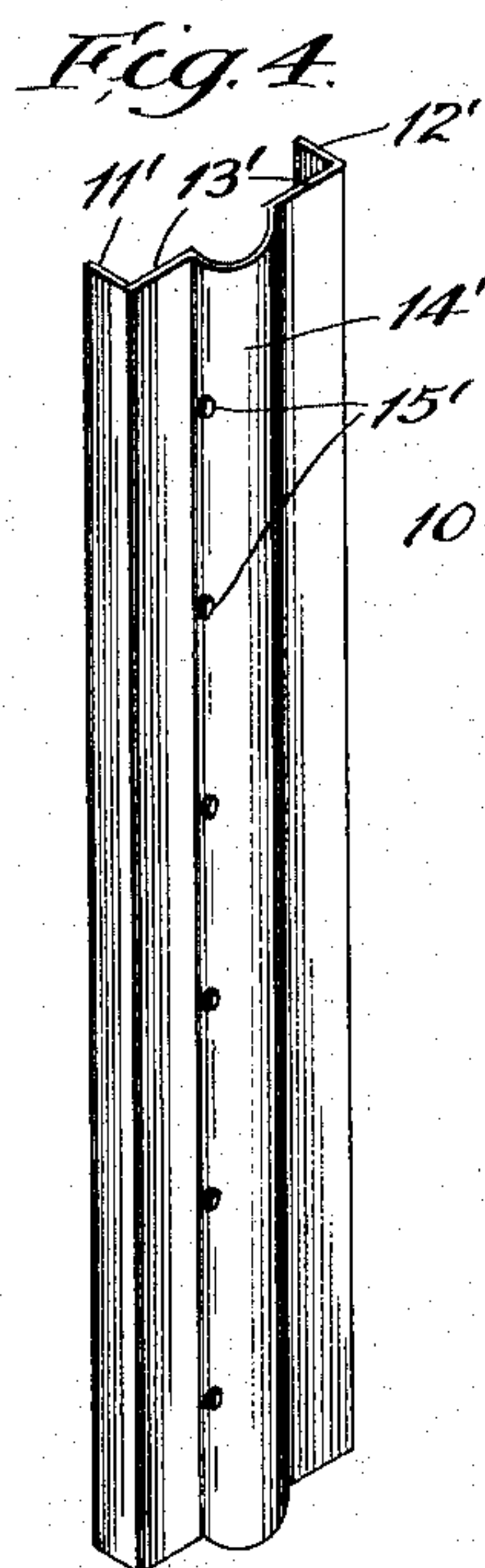
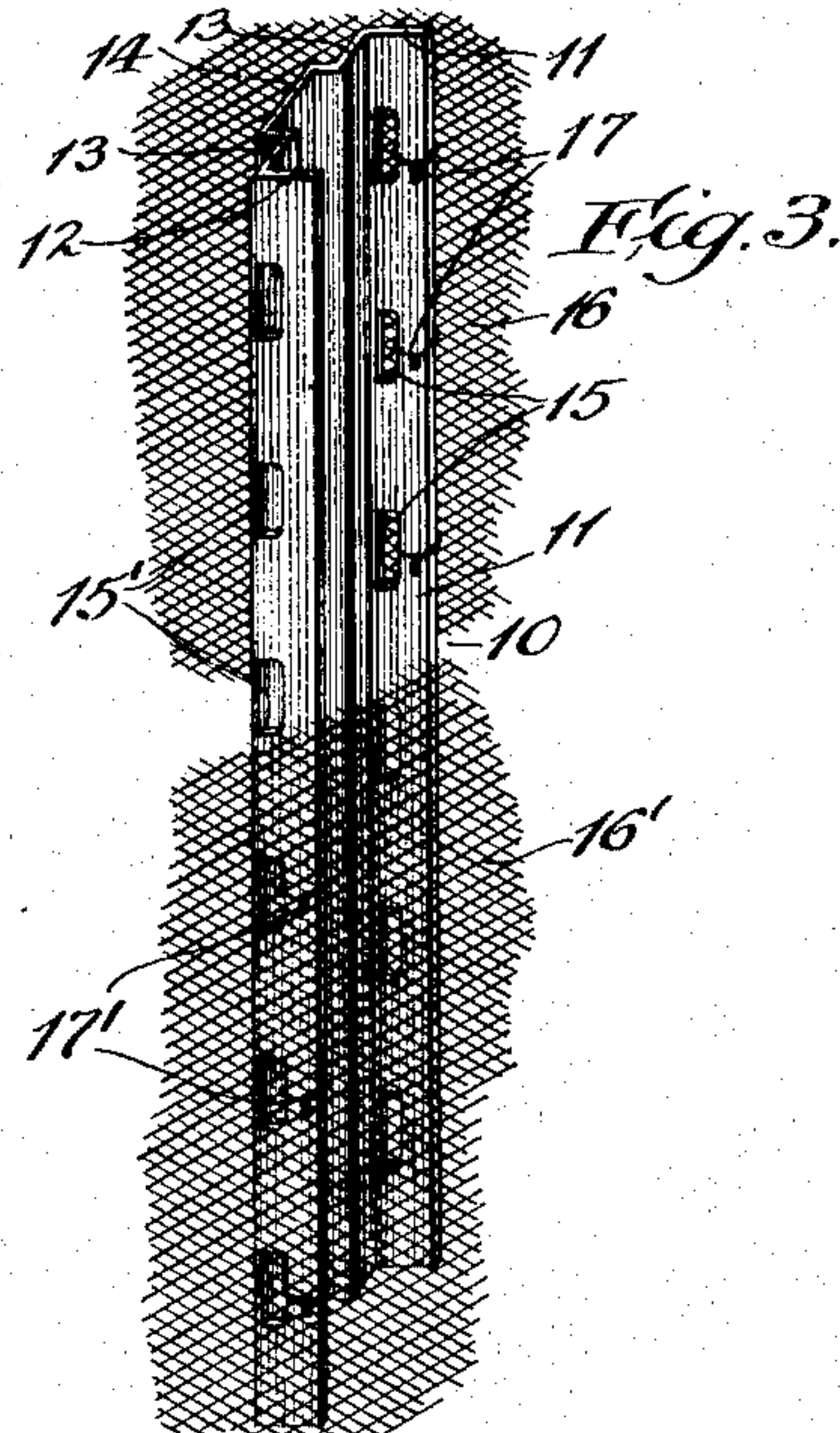
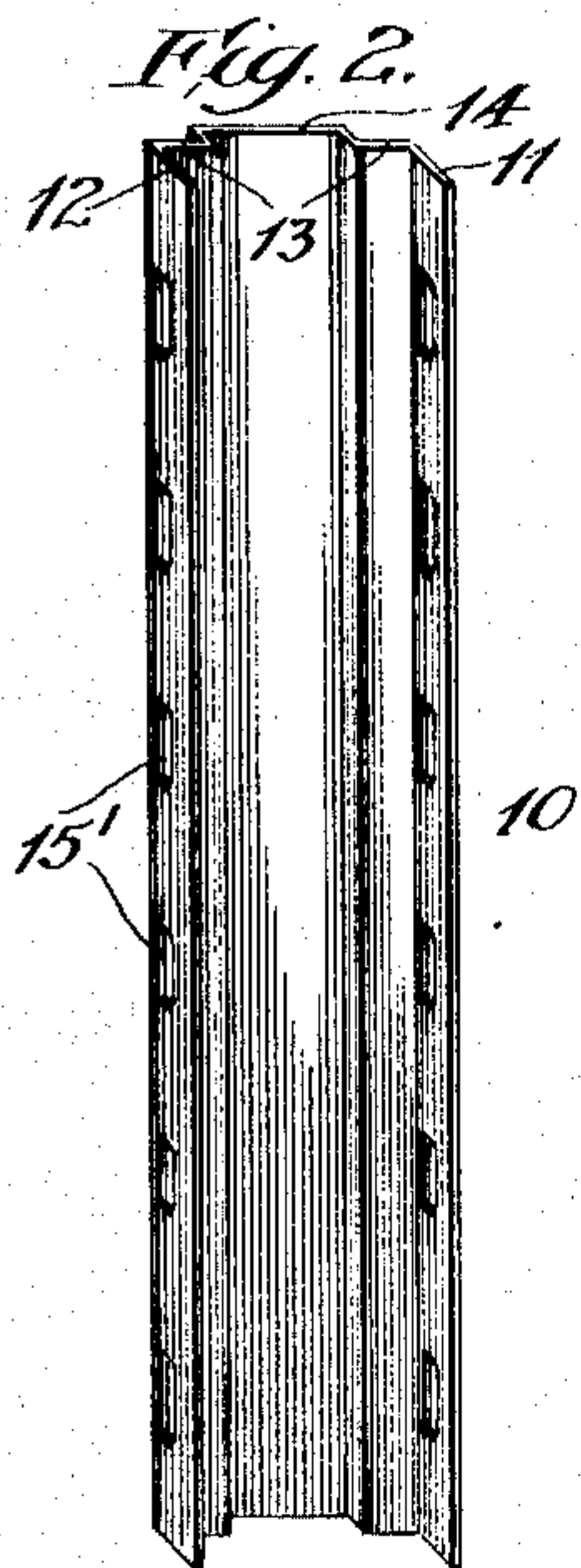
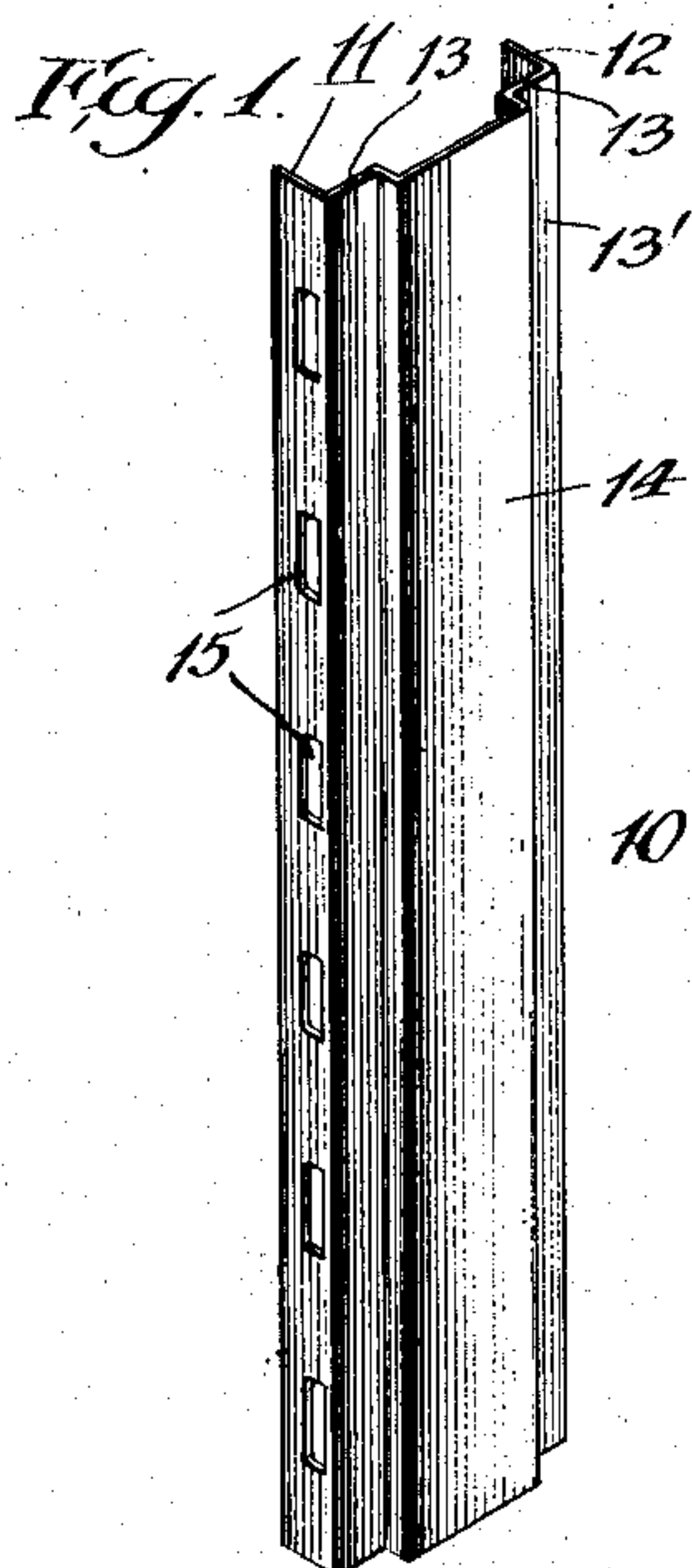
No. 865,109.

PATENTED SEPT. 3, 1907.

C. H. KNAPP.

SHEET METAL FIREPROOF STUD FOR PLASTERED PARTITIONS.

APPLICATION FILED APR. 19, 1906.



Witnesses
Ray White.
Harry R. White

Inventor
Charles H. Kriapp.
By George Dainard May
Atty's

UNITED STATES PATENT OFFICE.

CHARLES H. KNAPP, OF CHICAGO, ILLINOIS, ASSIGNOR TO KNAPP BROS. MANUFACTURING COMPANY, A CORPORATION OF ILLINOIS.

SHEET-METAL FIREPROOF STUD FOR PLASTERED PARTITIONS.

No. 865,109.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed April 19, 1906. Serial No. 312,617.

To all whom it may concern:

Be it known that I, CHARLES H. KNAPP, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented an
5 Improvement in Sheet-Metal Fireproof Studs for Plastered Partitions; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to fully understand.

10 My invention relates to improvements in building studs, and has especial reference to sheet metal studs for fireproof partitions and other similar structures.

One of the objects of my invention is to produce a strong, durable and efficient stud, of the character described, by forming the same from sheet metal blanks,
15 of such configuration as to produce the greatest strength against lateral resistance, consistent with the small quantity of metal included in its composition.

Another object of my invention is to provide cheap,
20 efficient and reliable means for securing the metal fabric to said studs or beams.

Other and further objects of my invention will become apparent to persons skilled in the art from the drawing and the description hereinafter contained.

25 In the drawing; Figure 1 is an elevation showing the front view of the stud, with the strengthening bead, or rib, facing the observer. Fig. 2 is a similar view showing the reverse side of the stud. Fig. 3 is a similar view showing metal lathing attached to either edge or flange of the stud. Fig. 4 is a view of a modification similar
30 to that shown as Fig. 1, with a rounding bead or rib instead of a square cornered bead. Fig. 5 is a similar view showing the interior of the structure. Fig. 6 is a view of the modification showing the metal lathing fabric
35 and the means employed for its attachment.

In all of the views the same reference characters refer always to similar parts.

It is generally known to persons familiar with the art, that heretofore, sheet metal studs upon which metal
40 lath and plaster have been supported, in order that they should be strong enough to hold the lath and plaster in position, and to sufficiently resist lateral pressure, have been made of sheet metal of relatively heavy gage. The heavy gage stock involves the use of
45 more powerful forming presses, and other machinery, and requires a great weight of material, thus increasing the cost of the article of equal strength when compared with the structure herein exemplified. To overcome these and other objections to a large extent, I have pro-
50 duced a structure in which a strengthening rib is pressed or otherwise formed, as an integral part of the device, thereby permitting the use of a lighter gage metal without reducing the strength of the stud.

The stud, as a whole, indicated by 10, is pressed or
55 otherwise formed of a single piece of sheet metal, such

as soft steel, iron or the like, and consists of flanged sides 11 and 12, the face 13—13' and a central rib or bead 14 and 14'. The rib or bead, 14—14' gives great bearing strength to the structure and enables it to resist considerable lateral pressure with very slight deflection. The bead is shown pressed into the central face of the structure to preserve the symmetry of its appearance, but it is evident that it could be located on either side of the longitudinal center of the face, or otherwise located without materially changing the
60 character or value of the rib for the purpose intended.

I have shown a single modification for the purpose of indicating only one of the forms which my stud may take, and not as the only modification of which it is susceptible. For instance, the stud may be a plurality
70 of ribs of suitable form, such as a corrugated structure, and many other variations may be made, and all in which the strengthening rib appears to increase the lateral strength of the stud, will fall within the terms and spirit of my invention.

Perforations 15, 15' are made at suitable intervals through the walls of the structure, through which to thread the wires, by means of which the metal fabric or lathing may be attached. The apertures 15 are preferably made at the juncture of the face 13, and the
80 lateral flanges 11 and 12 respectively, or through the walls of the bead 14—14' or both, as shown at 15'. The metal fabric, or lathing 16, 16', is attached to the studs, on either or both of the sides, as shown in Fig. 3, or to the rib 14 or 14' as shown in Fig. 6. Soft tie
85 wire, of suitable size, such as annealed steel tie wire, 17—17' is threaded and laced through the meshes of the fabric 16 and the perforations 15, made through the walls of the stud structure, and then firmly and tightly twisted and tied and bent down into near ap-
90 proximation with the face of the lath structure.

By making the perforations in the base of the flange, or at the points of juncture with the flange and the face, and the bead and face, the structure is thus attenuated at these points, and the material of which the stud is
95 composed is more easily contorted in the process of forming up the stud, and the wires are more easily and readily threaded, the walls approaching the perforations serving as guides.

Where the structure is to be used in partitions, in
100 which plastered walls are to be supported upon each side of the stud, the lathing is preferably attached to both lateral sides, as shown in Fig. 3. In constructions wherein the device is used as a furring strip or the like, the lathing may be attached, as shown in Fig. 6. Obviously the attaching wires may be first tied through the perforations in the stud and subsequently threaded through the meshes of the lath fabric, and again tied or twisted together.

Having thus described my invention, what I claim 110

and desire to secure by Letters Patent, of the United States, is:

1. A metal stud formed of a single sheet of metal, having a front face member and side members at angles thereto, and a longitudinal strengthening rib formed in and projecting in front of said face member.
2. A metal stud formed of a single sheet of metal having a front face member and side members at angles thereto, and a longitudinal rib formed in and projecting in front of the face member, having perforations for the reception of fastening devices.
3. A metal lathing stud formed of a single sheet of metal, having a front face member and side members at angles thereto, and a longitudinal rib formed in and projecting in front of said face member, having perforations for tie wires by which to secure lathing fabric thereto, and tie wires taking through said perforations.

4. A metal lathing stud formed of a single strip of metal, having a front face member, a strengthening rib projecting from the front of said face member, side members extending backward and at angles thereto, said structure provided with perforations at the juncture of said rib and face member through which to secure attaching devices.

5. A metal lathing stud or strip formed of a single sheet of metal, comprising a face, two laterally flanged sides at substantially right angles thereto, having a strengthening rib formed in said face projecting in front and extending longitudinally thereof.

CHARLES H. KNAPP.

Witnesses:

GEORGE S. KNAPP,
H. J. HERZOG.