

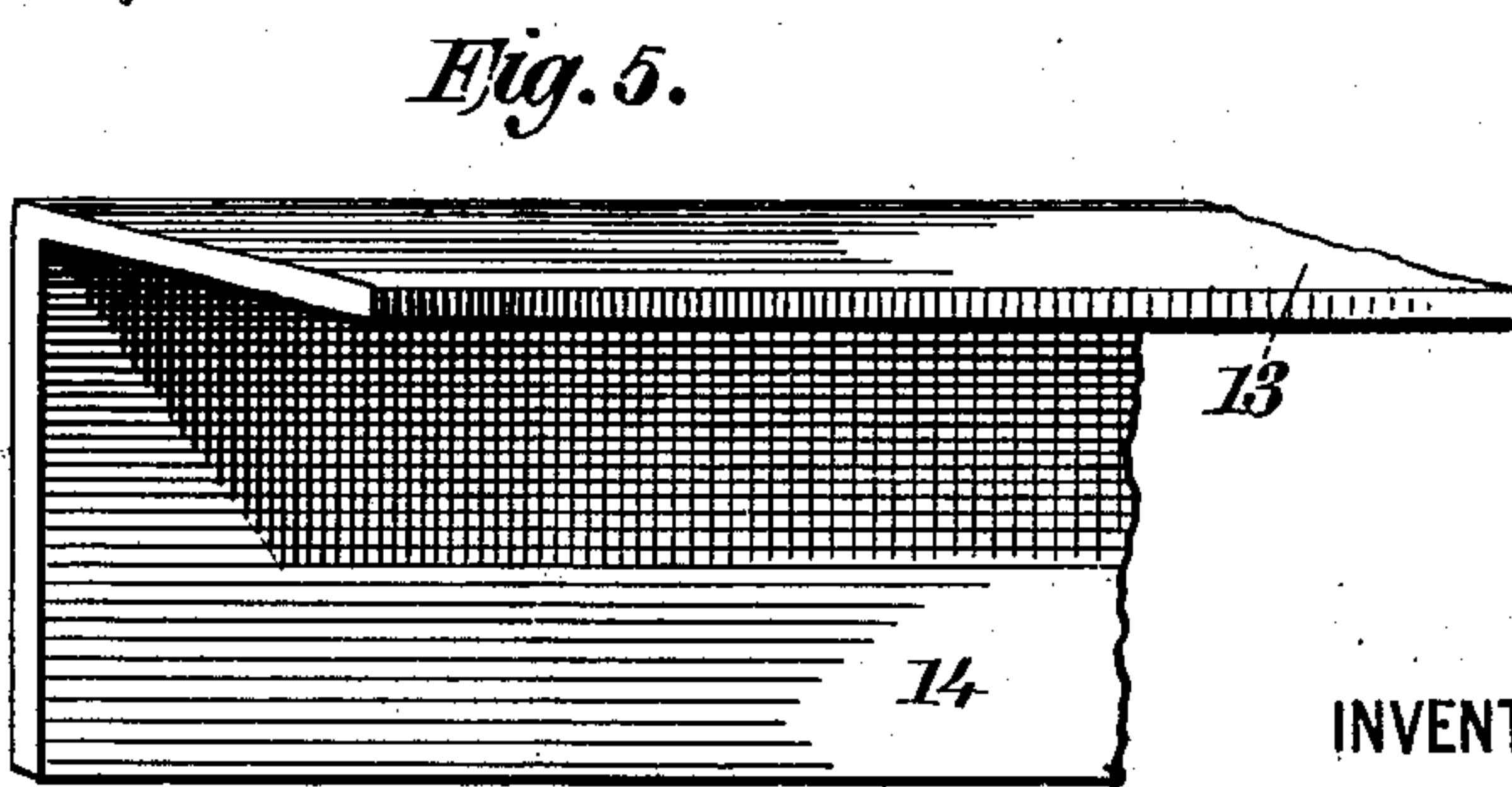
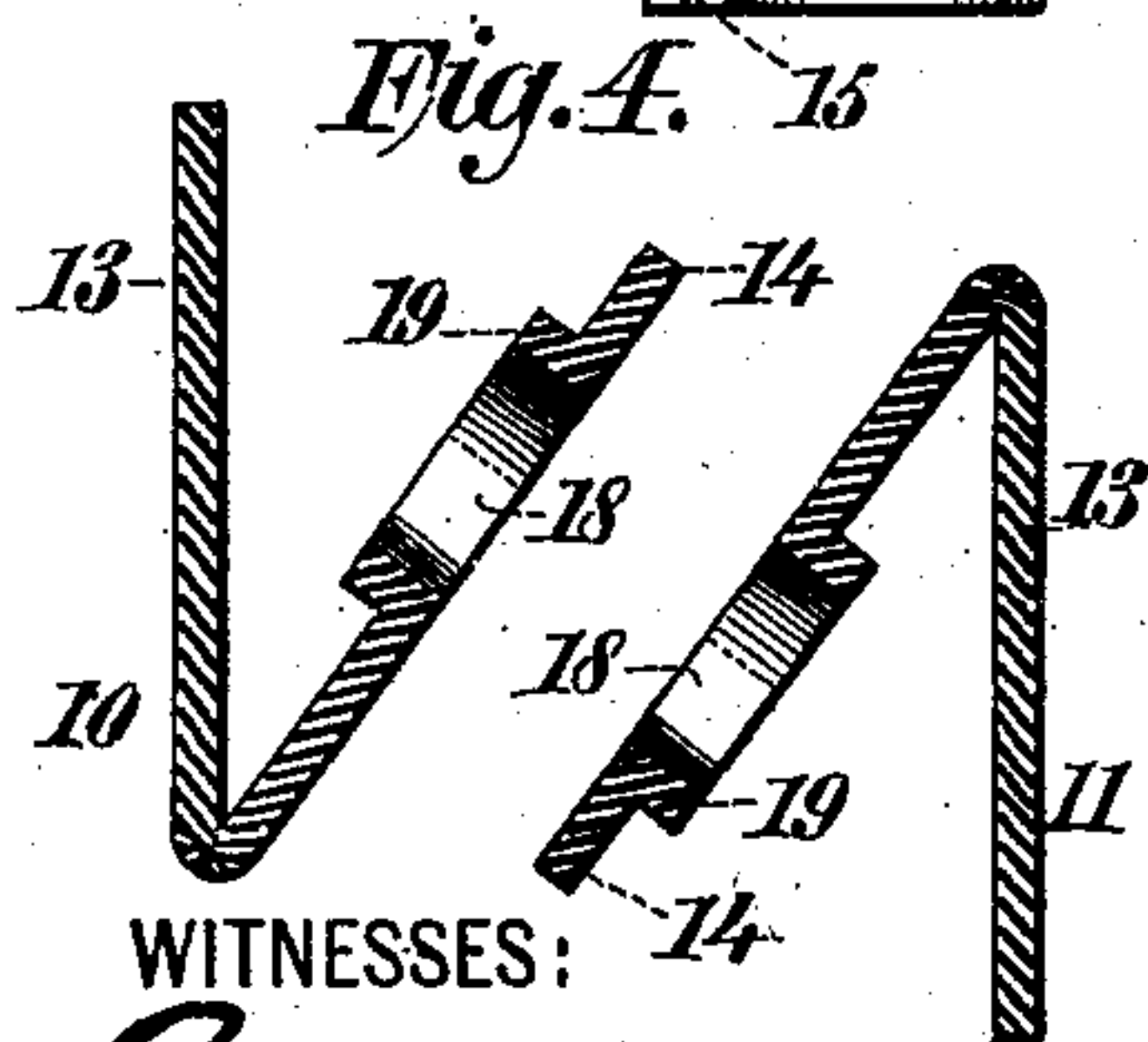
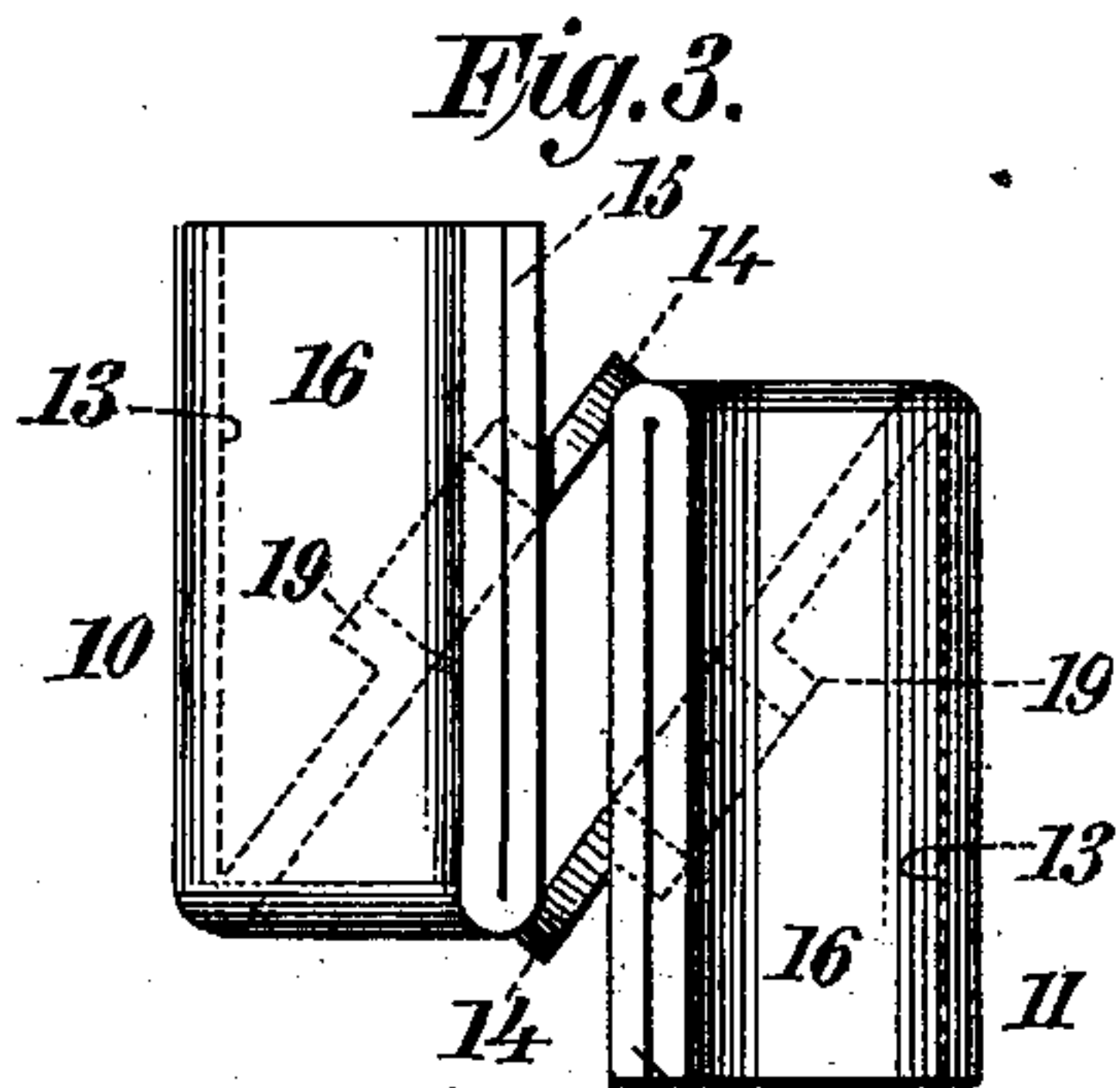
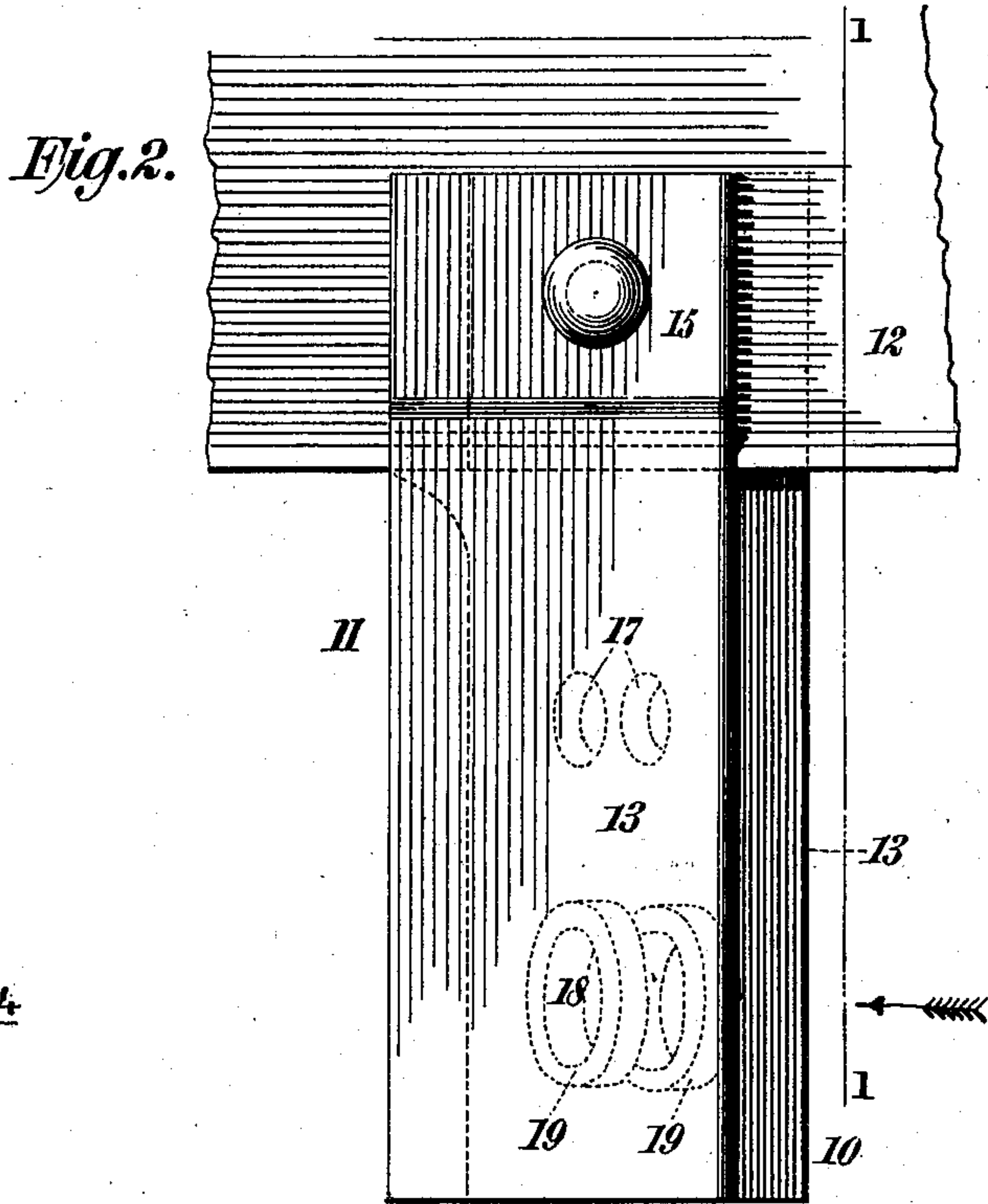
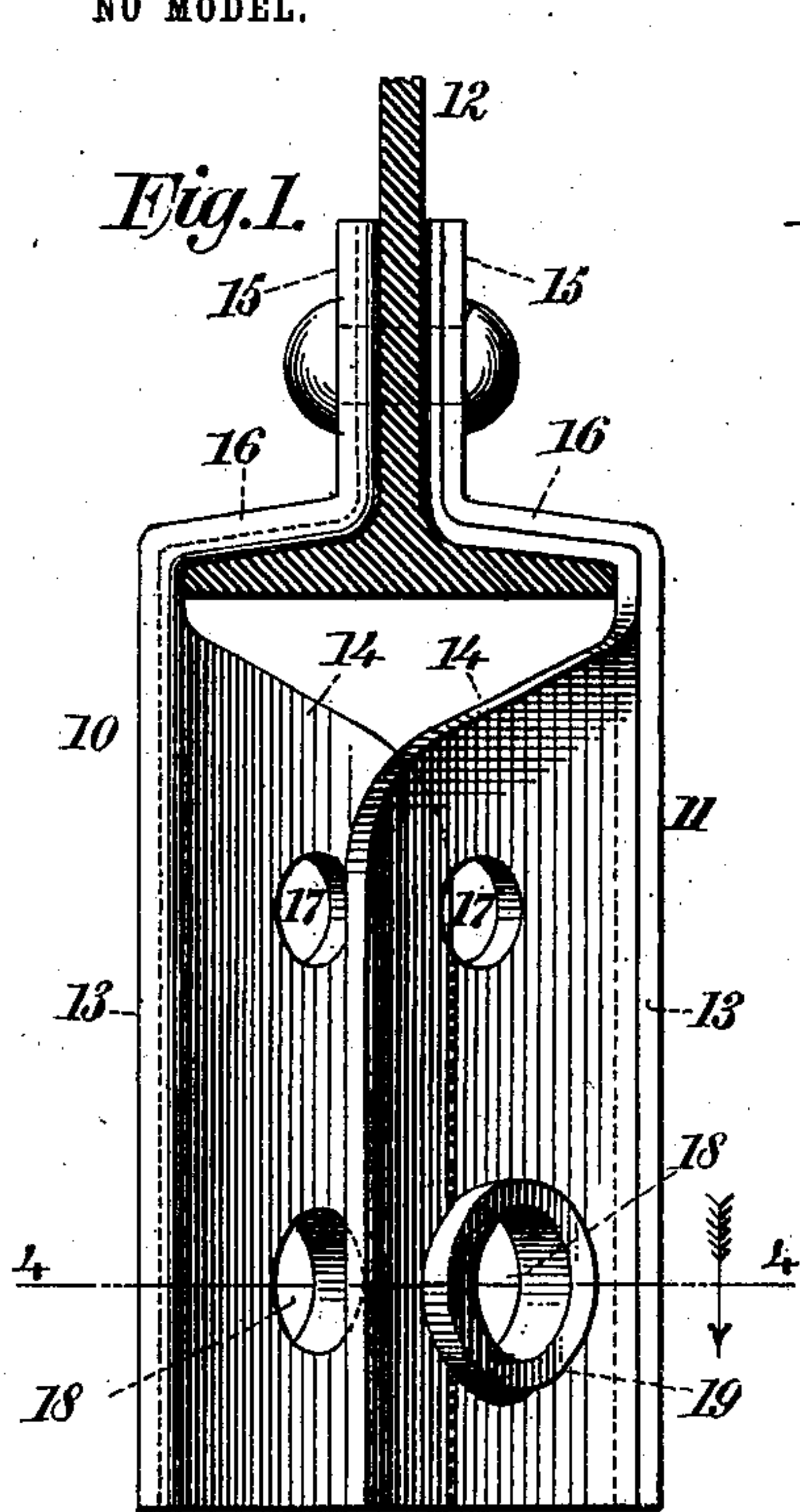
No. 742,169.

PATENTED OCT. 27, 1903.

S. A. CRONE.
BRAKE BEAM FOR RAILWAY CARS.

APPLICATION FILED JULY 23, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SETH A. CRONE, OF NEW YORK, N. Y.

BRAKE-BEAM FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 742,169, dated October 27, 1903.

Application filed July 23, 1903. Serial No. 166,660. (No model.)

To all whom it may concern:

Be it known that I, SETH A. CRONE, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Brake-Beams for Railway-Cars, of which the following is a specification.

The invention relates to improvements in brake-beams for railway-cars; and it consists in the novel features hereinafter described, and particularly pointed out in the claims.

Brake-beams of the class to which my invention pertains comprise a rolled body member, brake-shoe heads on the ends thereof, and a fulcrum for the brake-lever, and my invention has for its object to produce a novel and more efficient fulcrum for use in such beams. My invention is specifically limited to brake-beam fulcrums of forged or rolled metal that is formed from suitable blanks or pieces cut from commercial bars or structural beams and pressed or trimmed to shape or otherwise given the desired outlines. Several examples of forged-metal brake-beams are shown in Letters Patent heretofore granted to Seth A. Crone, as follows: No. 720,677, dated February 17, 1903; No. 720,678, dated February 17, 1903, and No. 731,668, dated June 23, 1903.

One of the difficulties connected with forged fulcrums as heretofore manufactured consisted in providing adequate bearing-surfaces for the brake-lever pin without producing a fulcrum of undue weight or of bulky character or otherwise unsuitable or undesirable, and my present invention has for one of its purposes the production of a satisfactory forged-metal fulcrum having adequate bearing-surfaces for the brake-lever pin.

Another purpose of my invention is to produce an efficient fulcrum of great strength and durability from a section of a structural beam or shape, such as an angle-iron, this fulcrum being of double thickness throughout and having its parts so disposed that it may be inexpensively formed of the minimum weight of metal and yet withstand the strains exerted by the brake-lever.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is an edge view of a forged-metal brake-beam fulcrum constructed in accordance with and embodying the invention, the said fulcrum being shown as made from two pieces of angle-iron and applied to a flanged body-beam, the latter being shown as partly broken away and in section on the dotted line 1 1 of Fig. 2. Fig. 2 is an elevation of same looking at the side face of the body-beam. Fig. 3 is a detached top view of the fulcrum. Fig. 4 is a section of same on the dotted line 4 4 of Fig. 1, and Fig. 5 is a detached perspective view of a portion of a structural beam from which the two fulcrum parts shown in Fig. 1 are formed.

The fulcrum shown is in two parts 10 11, respectively secured to the body-beam 12 and each formed from a piece of angle-iron beam, such as illustrated in Fig. 5, of suitable length, and whose webs or flanges 13 14 are folded into face-to-face contact at one end of the piece to form the flanges 15 16 of double thickness for engagement with the body-beam 12, while said webs or flanges 13 14 beyond the beam 12 are separated from each other, the outer webs or flanges 13 being substantially in line with the sides of the beam 12 and the inner webs or flanges 14 being set inwardly and angularly disposed to receive between them the usual brake-lever in the customary manner. Each of the two parts of the fulcrum is in one integral piece and of double thickness from end to end, the webs or flanges being pressed together for engagement with the body-beam 12 and left open from each other beyond said beam, although, as will be observed, the webs or flanges 14 will be pressed to some extent from their initial position toward the webs or flanges 13, so as to produce the proper angularly-disposed side portions (represented by said flanges 14) to receive the brake-lever. (Not shown.) The bringing together of the webs or flanges 13 14 at the outer end of the piece of angle-iron to form the flanges 15 16 results in the curving inwardly of the web or flange 14 adjacent to the beam 12, whereby the said flange 14 without being cut may be set into its proper angular relation required for the operation of the brake-lever.

The fulcrum parts when constructed as shown and described are of great strength

and durability and may be made from a minimum weight of metal, the inner flanges 14 being sustained not only by the flanges 13, but also from the body-beam 12 in a manner enabling said flanges 14 to properly resist the strains exerted by the brake-lever.

The flanges 14 will preferably be apertured, as at 17, to receive a usual rivet or stay-bolt which is a known feature and is shown in the aforesaid Letters Patent No. 731,668, and the said flanges 14 will be provided with apertures 18 to receive the brake-lever pin, and one feature of my invention pertains to the formation of said apertures 18. The normal thickness of the flanges or sides 14, whether the fulcrum parts are made of rolled angle-iron or other shape or of the forged bars represented in the aforesaid Letters Patent when the most desirable metal is used in their manufacture, is inadequate to afford proper bearing-surfaces for the brake-lever pin when apertures 18 of the standard diameter (one and one-eighth of an inch) are directly formed in them. In carrying out this part of my invention I first punch the apertures 18 of less than the standard diameter in the flanges or sides 14 and then enlarge these apertures to the standard or required diameter by forcing their surrounding walls outwardly, whereby outwardly-extending horizontal flanges 19, surrounding the apertures 18, are formed, as shown, and these flanges perform three important duties, one being that their inner circumferential surfaces afford proper bearing-surfaces for the brake-lever pin, and another that they materially strengthen the sides 14 and aid in enabling them to resist the strains exerted by the brake-lever, and the third that they enable the entire fulcrum to be made from forged metal blanks or pieces lacking undue weight or bulkiness or otherwise undesirable either in appearance or cost or in expense of manufacture or manipulation. The thickness of the sides 14 will of course vary with the duties to be performed by the fulcrum; but for an average fulcrum the sides 14 may be of three-eighths inch thickness and the bearing-surfaces of each flange 19 for the brake-lever pin may be three-quarters of an inch in extent, the said pin thus securing in both sides 14 an inch-and-a-half bearing.

The formation of the apertures 18 and flanges 19 in the manner above described results in the inner or facing surfaces of the sides 14 being left substantially smooth and flat throughout, and in the inner horizontal bearing-surfaces within the apertures 18 and flanges 19 being formed of the durable crust or outer surface of the plate metal instead of having such raw surface as would be presented if the apertures 18 were simply punched, of the standard diameter, directly through the sides 14.

My invention therefore pertains to the fulcrum made from a structural or angle iron shape and to the formation of the bearing-apertures for the brake-lever pin, and while I do not limit this latter feature of the invention to any special pattern of forged brake-beam fulcrum having the angularly-disposed sides my invention is confined to forged-metal fulcrums having the angularly-disposed sides between which the brake-lever is mounted.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The forged-metal brake-beam fulcrum comprising portions 10, 11, having the integral webs or flanges 13, 14, said flanges being brought together where they engage the body-beam and beyond said beam said flanges 14 being set inwardly to form the angularly-disposed sides to receive the brake-lever; substantially as set forth.

2. The forged-metal brake-beam fulcrum comprising portions 10, 11, made from angle-iron, and having the integral webs or flanges 13, 14, said flanges being brought together where they engage the body-beam and beyond said beam said flanges 14 being set inwardly to form the angularly-disposed sides to receive the brake-lever; substantially as set forth.

3. The forged-metal brake-beam fulcrum comprising portions 10, 11 having the integral webs or flanges 13, 14, said flanges being brought together where they engage the body-beam and separated from face-to-face contact with each other beyond said beam, the flanges 14 beyond said beam forming the angularly-disposed sides to receive the brake-lever; substantially as set forth.

4. The forged-metal brake-beam fulcrum comprising portions 10, 11 having the integral webs or flanges 13, 14, said flanges being brought together at one end and formed into the flanges 15, 16 to engage the body-beam, and beyond said beam being separated from face-to-face contact with each other, the flanges 14 beyond said beam forming the angularly-disposed sides to receive the brake-lever; substantially as set forth.

5. A forged-metal brake-beam fulcrum having the angularly-disposed sides to receive between them the brake-lever, said sides having the apertures 18 and outwardly-extending flanges 19 for the brake-lever pin, the inner walls of said apertures and flanges having for their surfaces the outer or crust portion of the rolled metal; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 22d day of July, A. D. 1903.

SETH A. CRONE.

Witnesses:

CHAS. C. GILL,
ARTHUR MARION.