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PLASTER FRAME FOR WALL REGISTERS OR GRILLES

Filed Sept. 24, 1934

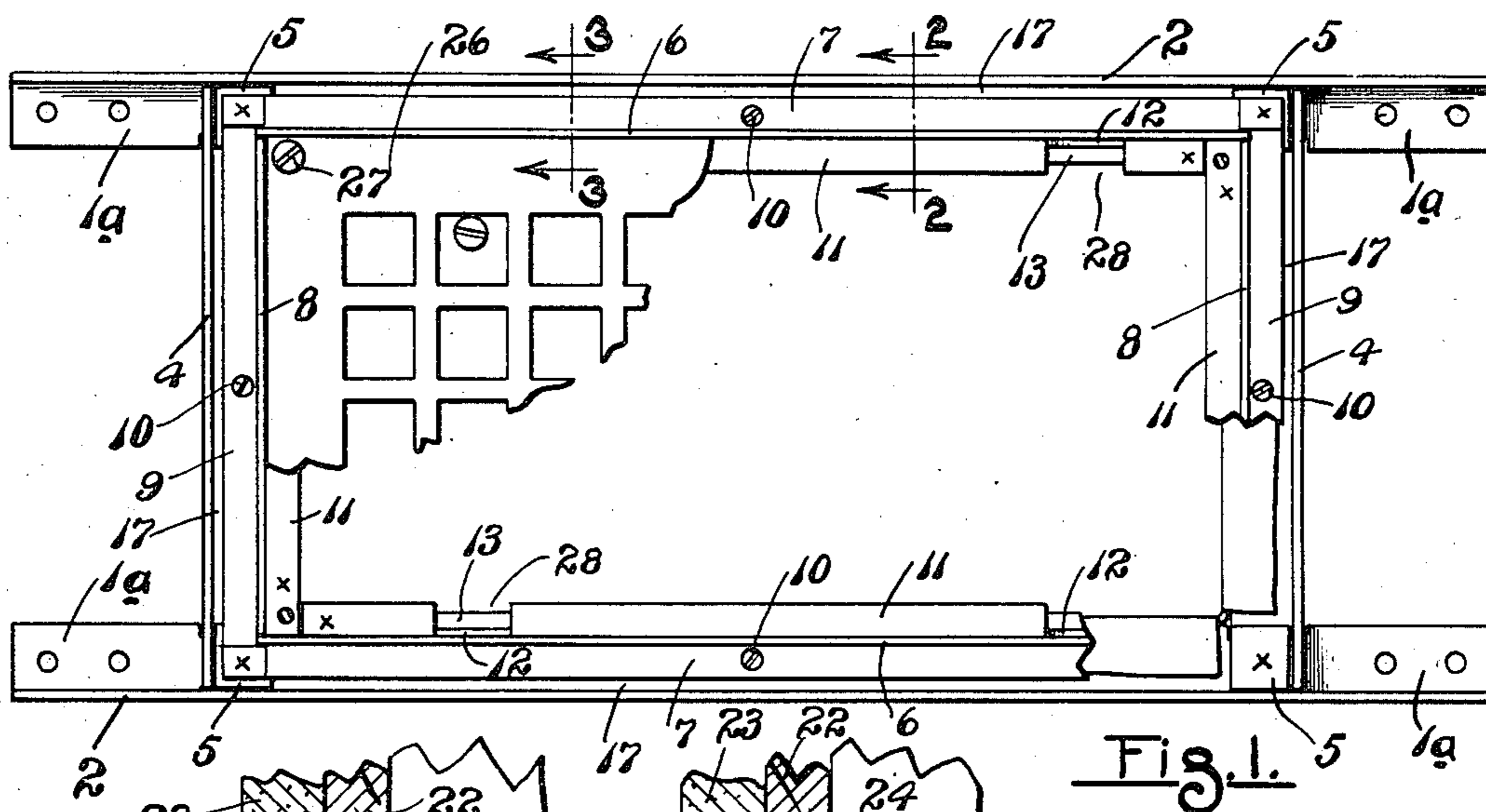


Fig. 1.

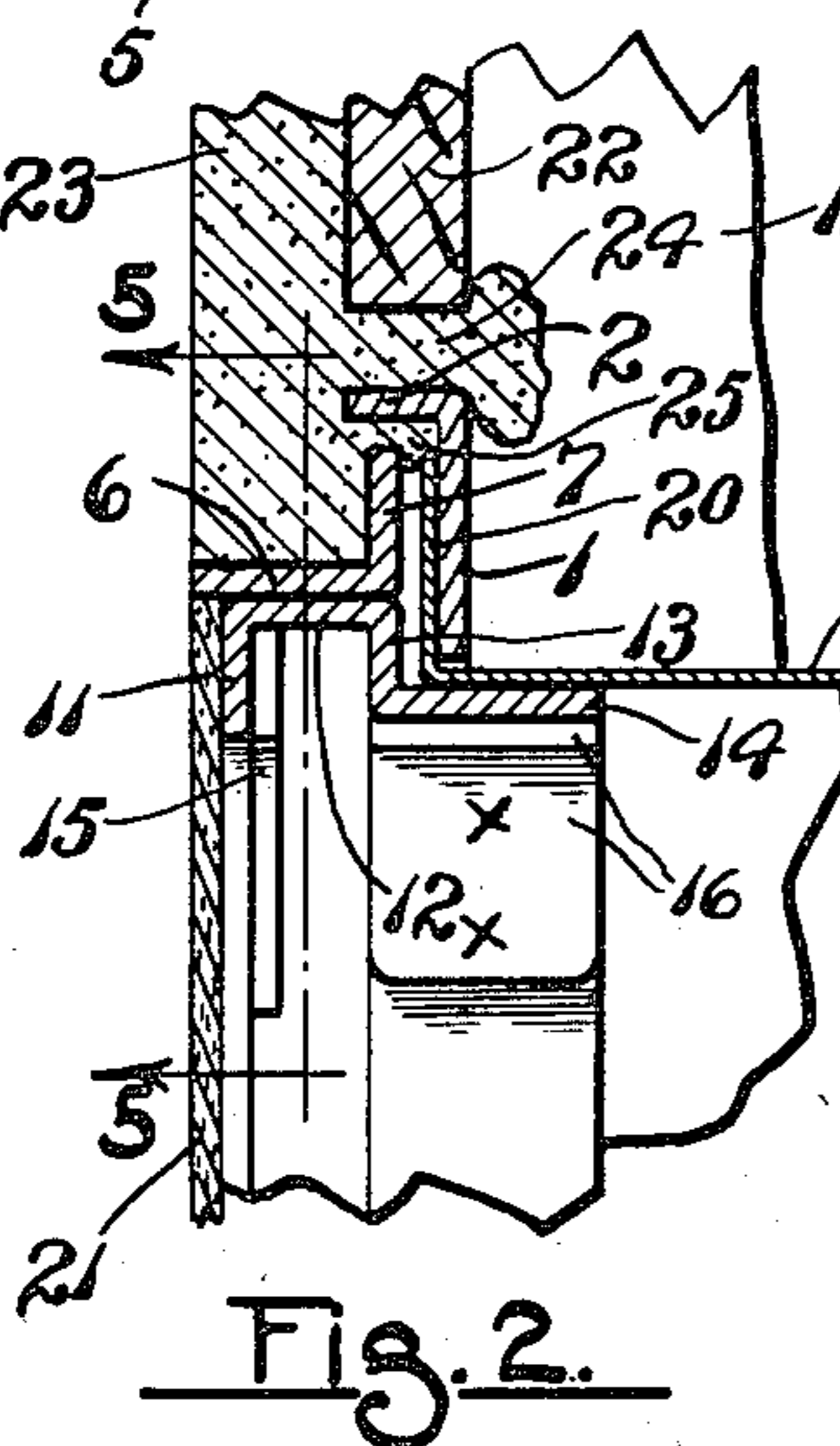


Fig. 2.

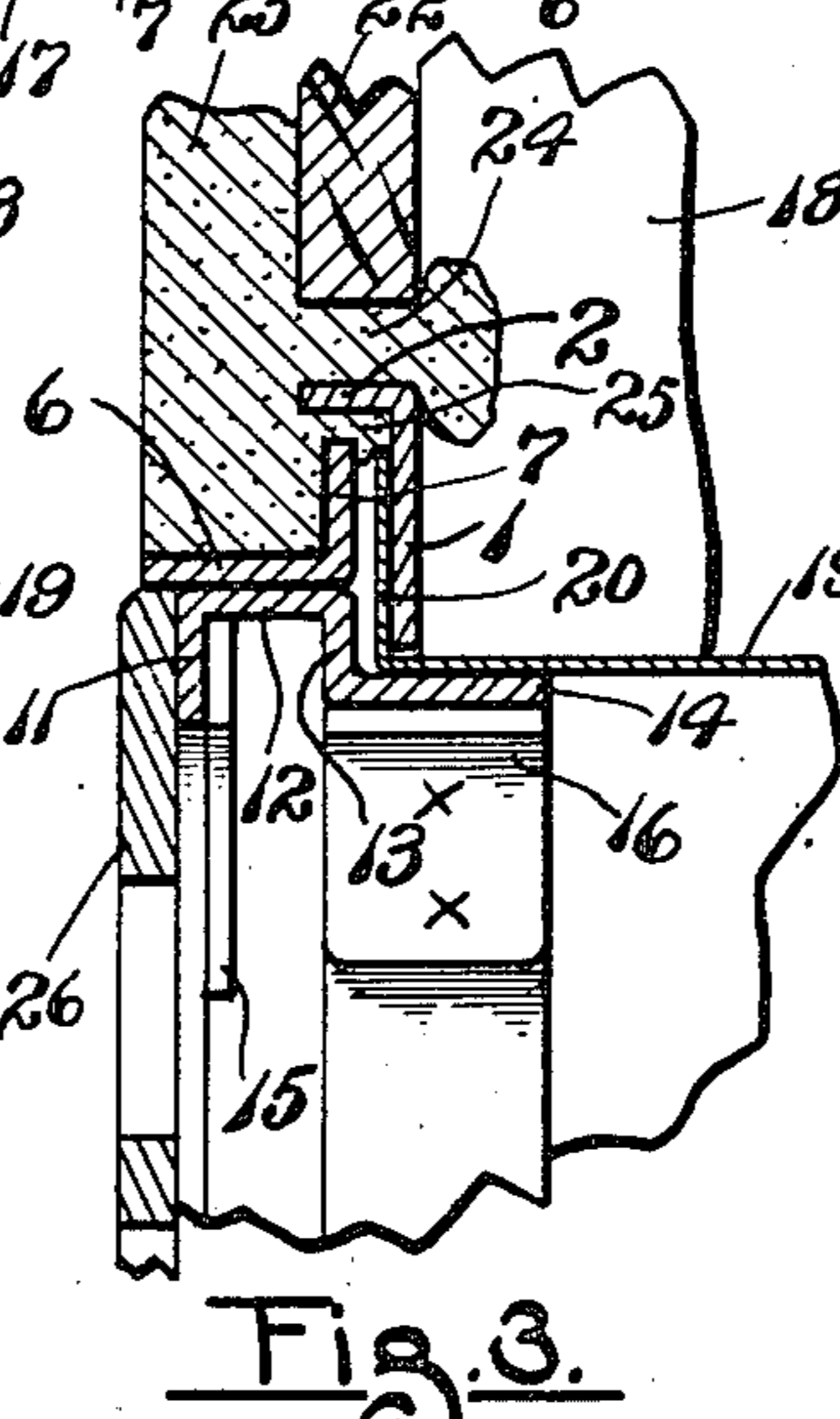


Fig. 3.

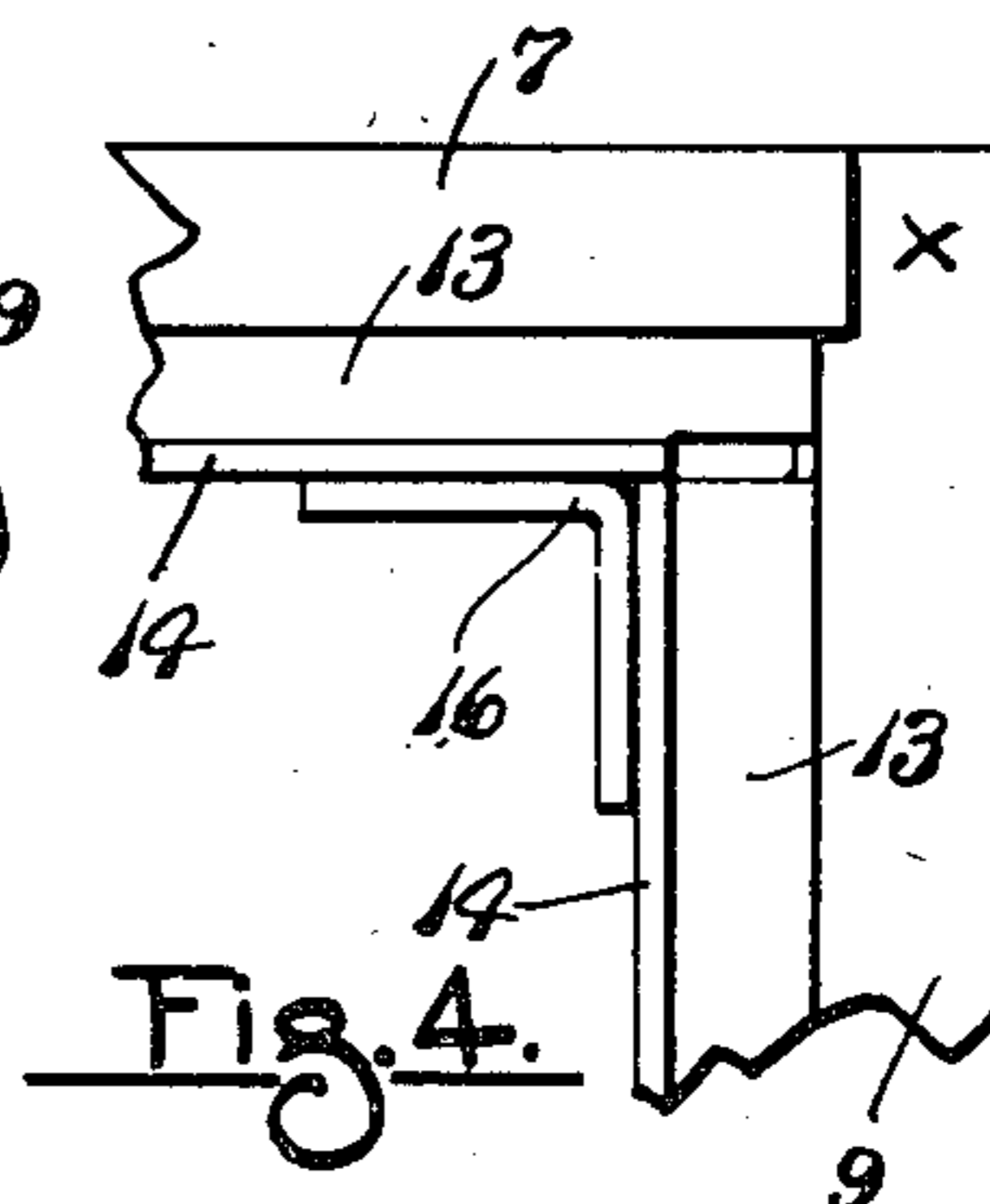


Fig. 4.

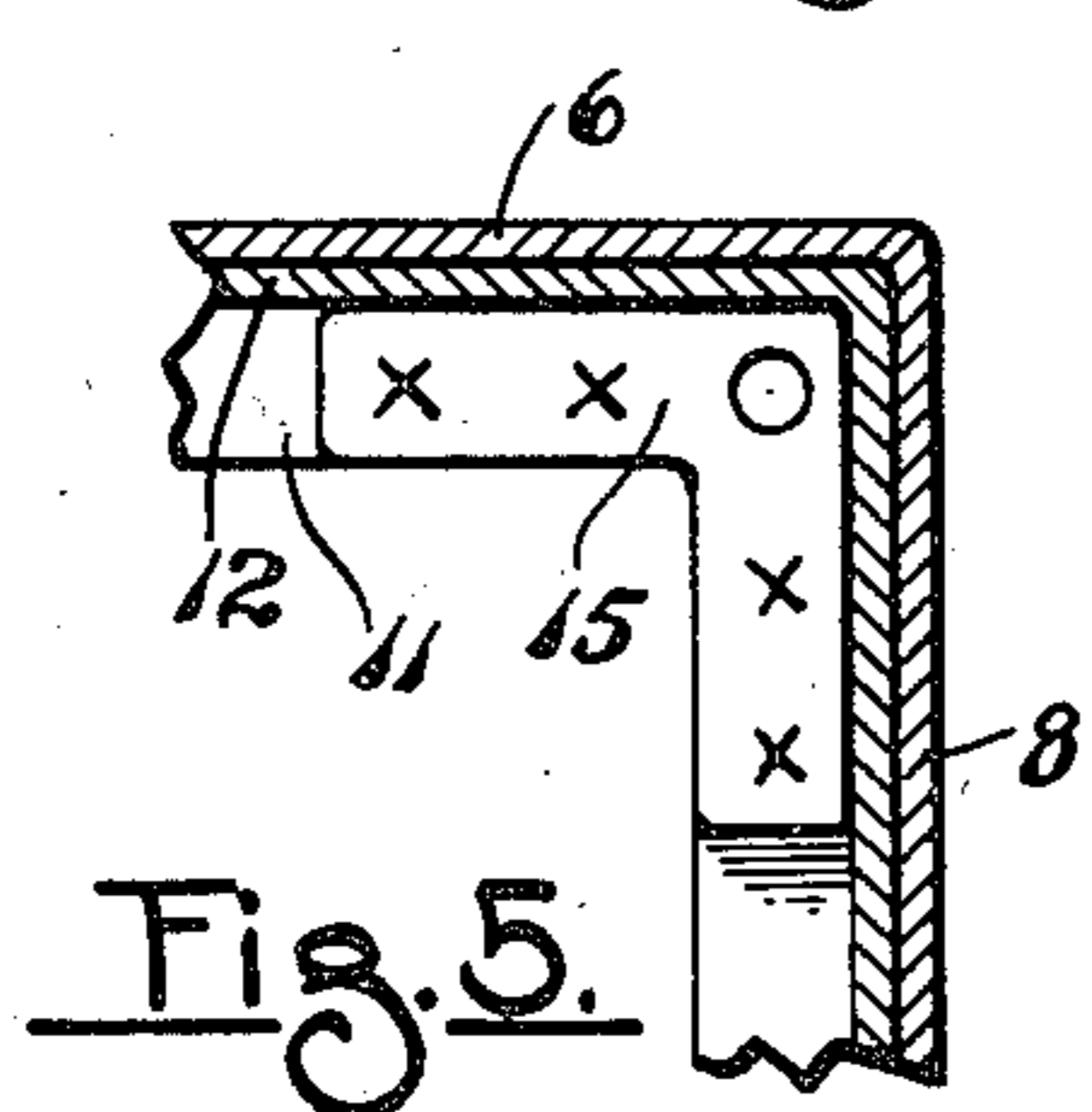


Fig. 5.

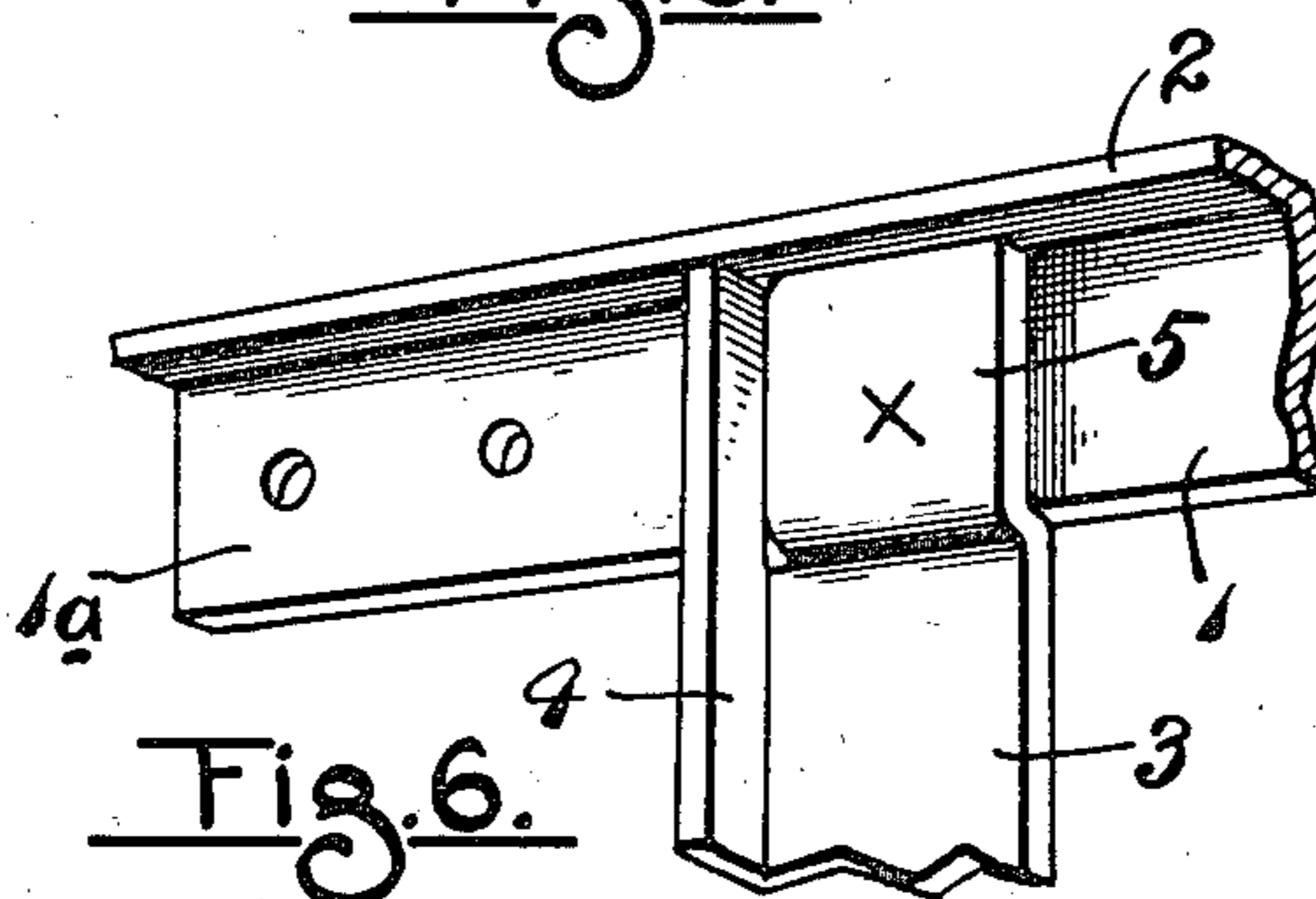


Fig. 6.

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UNITED STATES PATENT OFFICE

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PLASTER FRAME FOR WALL REGISTERS
OR GRILLES

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5 Claims. (Cl. 98—114)

This invention relates to a frame for wall registers or grilles used in connection with the delivery of warm air from a furnace to a room to be heated. Wall registers or grilles are located vertically, usually directly above the floor of the room and in a side wall thereof. The pipe leading from the furnace to the register delivers warm air into the room, and it is particularly desirable that the warm air shall not leak around the edges of the register or the frame which supports it. If it does there is produced, on the inner surface of the wall around the frame, discolorations which are unsightly and which come from the dust or other material carried by the warm air coming from the furnace casing.

The present invention is concerned with a very practical and novel construction of frame which, in practice, is secured to the studding of the room wall at the proper location before the plaster is applied, and in a position such that after the plaster has been applied the edges of the frame are flush with the inner side of the plastered wall. It is an object of the invention to provide a frame to which may be connected the end of a furnace pipe or stack whereby after the plaster has been laid, a complete airtight seal is provided, precluding any escape of warm air around the edges of the frame or in any other way such that it might act to discolor the wall adjacent the frame.

An understanding of the invention and the many advantages obtained thereby may be had from the following description taken in connection with the accompanying drawing in which:

Fig. 1 is a front elevation of the completely assembled register and frame therefor, parts being broken away for better illustration.

Fig. 2 is a fragmentary enlarged vertical section on the plane of line 2—2 of Fig. 1, showing the frame as it is installed for plastering.

Fig. 3 is a similar section on the plane of line 3—3 of Fig. 1, showing the assembled construction after the plastering has been completed and the register secured in place.

Fig. 4 is a fragmentary rear elevation of one corner of the inner frame member.

Fig. 5 is a fragmentary vertical section on the plane of line 5—5 of Fig. 2, and

Fig. 6 is a fragmentary enlarged perspective view illustrating a corner of the outer frame member.

Like reference characters refer to like parts throughout the several views.

In the construction there is provided an outer frame having upper and lower horizontal par-

allel bars of angle form with vertical legs or flanges 1 and horizontal legs or flanges 2 which are positioned at right angles to the flanges 1 as shown. The vertical end members of the frame are also of like angle form having outwardly extending flanges 3 with inwardly positioned flanges or legs 4. At the ends of the vertical frame members the flanges 3 are cut away from the flanges 4 and offset as indicated at 5 so that in assembling the parts, flanges 1 and 3 lie in the same plane. The assembly is completed by spot welding the offset portions 5 to the flanges 1 at a distance inwardly from the ends of the upper frame members, thereby providing extensions 1a as shown through which openings are made for the passage of nails or other securing devices in attaching the outer frame member to studding as will hereafter appear.

Associated with the outer frame is an inner frame which is comprised of two frame members secured together. One of these frame members, the one at the outside, has horizontal upper and lower angle bars with horizontal flanges 6 and vertical outwardly extending flanges 7. The vertical end members are likewise of angle form with flanges 8 and 9 at right angles to each other, the flanges 9 extending outwardly and lying in the same plane with the flanges or legs 7 previously described. The ends of the flanges or legs 7 are off-set as described with reference to the offset portions 5 in the first described outer frame and the parts are spot welded at the corners as shown in Fig. 1. When the frame members are assembled together they are detachably connected by screws 10 which pass through the flanges or legs 7 and 9 and into threaded holes made in the flanges or legs 1 as shown in Fig. 1.

The inner member of the inner frame is a rectangular frame member, the sides and ends of which are of a shape as shown in cross section in Figs. 2 and 3. The cross section consists of an inturned leg 11, at right angles to which is a section 12, from which another leg 13 is turned at right angles so as to parallel the leg 11, and from the inner edge of the leg 13 there is a flange 14. The frame is made up of four parts, upper and lower horizontal parts and end vertical parts which are connected at their corners by brackets 15 and 16. The brackets 15 (Fig. 5) lie against the inner sides of the vertical and horizontal legs 11 and are spot welded thereto while the angle brackets 16 connect the parts 14 at their corners, by spot welding.

The inner frame member is located so that the sections 12 come against the flanges or legs 6 and

9 of the surrounding frame member, and are permanently connected thereto by spot welding preferably. This, therefore, makes a permanent construction of inner frame which may be detachably connected by the screws 10, as previously described, to the outer frame. When so connected it is evident that the flanges or legs 7 and 9 are spaced a distance, equal to the thickness of the parts 5, from the adjacent flanges or legs 1 and 3 of the outer frame. It is also evident, as shown in Figs. 1, 2 and 3, that the edges of the outturned legs 7 and 9 are spaced a distance from the inner side of the flanges 2 and 4 providing a continuous narrow open space 17 entirely around the inner frame and between it and the adjacent inner sides of the legs 2 and 4 of the outer frame.

In using the frame structure of my invention the outer frame is secured to and located between adjacent studding 18 of the wall by passing nails or other fastening devices through the holes in the parts 1a. The end of the furnace pipe or stack 19 is inserted through this outer frame. The end of said pipe or stack 19 has an outturned flange 20 which comes against the flanges or legs 1 and 3 of the outer frame. The inner frame is then put in place and secured by means of the screws 10. It is apparent that the flanges 20 are readily received between the flanges 7 and 1 and 9 and 3. A covering member 21 of paper or fiber board is then used to completely close the frame, lying against the inturned legs 11 and fitting within the edge portions of the flanges or legs 6 and 8. There are screw threaded openings in the corners of the inner frame member of the inner frame and screws may pass through the corners of the cover member 21 to detachably hold it in place. The lath 22 is secured to the studding in the usual manner and the edges of the lath nearest to the upper and lower flanges 2 of the outer frame are spaced a short distance therefrom. The plaster 23 is applied and enters this space making a lock as at 24, the same as between adjacent pieces of lath, while the plaster also enters the continuous open space 17, as indicated at 25 in Figs. 2 and 3, thereby completely sealing the frame with the end of the furnace pipe or stack 19.

After the plaster has been applied and has dried the cover plate 21 is removed and either thrown away or used with other frames in the same manner and a register plate 26 substituted, being detachably secured in place by screws 27 at the corners of the plate. This register plate may be of any desired construction but as shown is a flat plate with a large number of openings therethrough, spaced from each other and preferably arranged in a symmetrical design. The recesses or openings at 28 cut in the upper and lower horizontal flanges 11 of the inner frame member of the inner frame are for the purpose of providing space to receive the connections by means of which a plate, hingedly connected at the inner side of the register plate 26, is secured thereto, which plate may be moved or adjusted to different positions to control the amount of warm air permitted passage into the room. This is old construction and is not illustrated herein.

The construction described is very practical and economical to build. It is particularly rigid and strong and has proved very satisfactory in actual practice.

The invention is defined in the appended claims

and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a device of the class described, an outer frame and an inner frame secured to and located within the outer frame in a spaced relation thereto, whereby the end of a warm air pipe or stack may be connected with the frames between the same and there be a continuous space within the outer frame and between the same and the inner frame for receiving plaster to seal said warm air pipe or stack with reference to said frames and compel passage of air from said warm air pipe wholly through the inner frame.

2. In a construction of the class described, an outer open frame, an inner open frame, means for detachably securing the inner frame to said outer frame whereby the flanged end of a warm air conduit may be received between said frames and held therebetween, said outer frame having a surrounding flange and said inner frame an outwardly extending leg or flange, the outer edges of which are spaced from said flange of the outer frame, providing space for the reception of plaster to seal against the passage of air between said frames.

3. In a construction of the class described, an outer frame of rectangular shape having parallel upper and lower bars and parallel vertical connecting bars, all of said bars being of angle shape in cross section, and having flanges at the outer edges of the frame projecting in one direction therefrom to provide a substantially continuous surrounding flange, a first inner frame comprising a rectangular frame member of angle bar form, and a second inner frame member located within the first inner frame and permanently secured thereto, said first inner frame having outwardly extending flanges extending toward but spaced from said surrounding flanges of the outer frame, and means for detachably securing said frames together whereby the flanged end of an air conduit may be received between said outer frame and the inner frames, as and for the purposes described.

4. In a device of the class described, an outer frame of rectangular shape, an inner frame of rectangular shape located within and surrounded by the outer frame, means for detachably connecting the outer and inner frames together, said inner frame being spaced at its sides and ends from the sides and ends of the surrounding outer frame, said inner frame having an inwardly extending continuous flange around the same at one side thereof, and means for detachably connecting a register plate or grille to said inner frame to bear against said continuous flange.

5. In a construction of the class described, an inner rectangular open frame, a register plate detachably secured thereto, an air carrying conduit into which said frame is partly inserted, said conduit having outwardly extending flanges at its ends, an outer frame between which and the inner frame said flanges of the conduit are received, said inner frame also being partially inserted into the outer frame but spaced a short distance therefrom around its outer edges, whereby a plaster seal may be provided in said space to insure all air from the conduit shall pass through said register, and means for detachably securing the inner and outer frames together.

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