

No. 781,068.

PATENTED JAN. 31, 1905.

E. R. HEWITT.
METAL FRAME.

APPLICATION FILED MAR. 23, 1904.

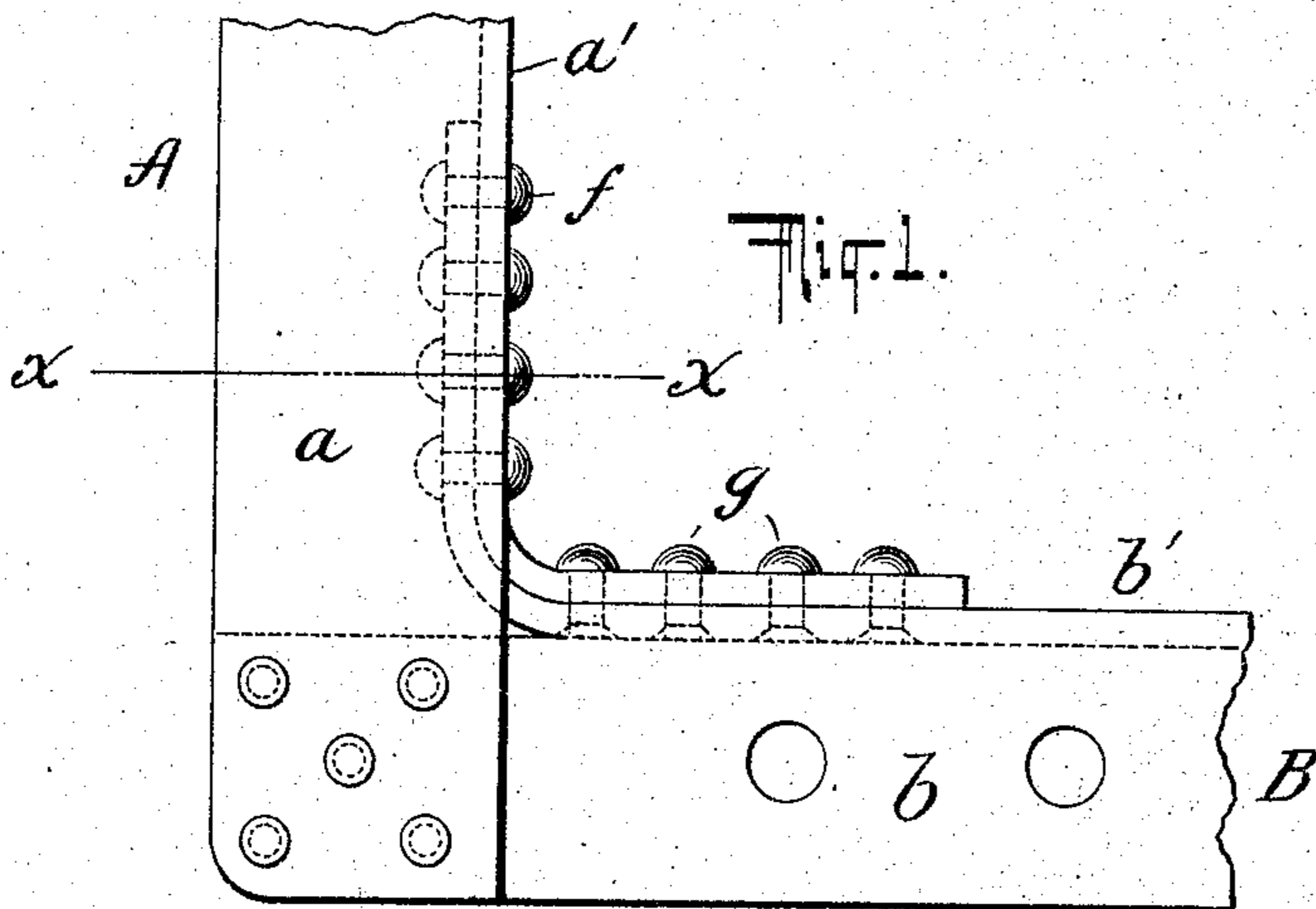


Fig. 2.

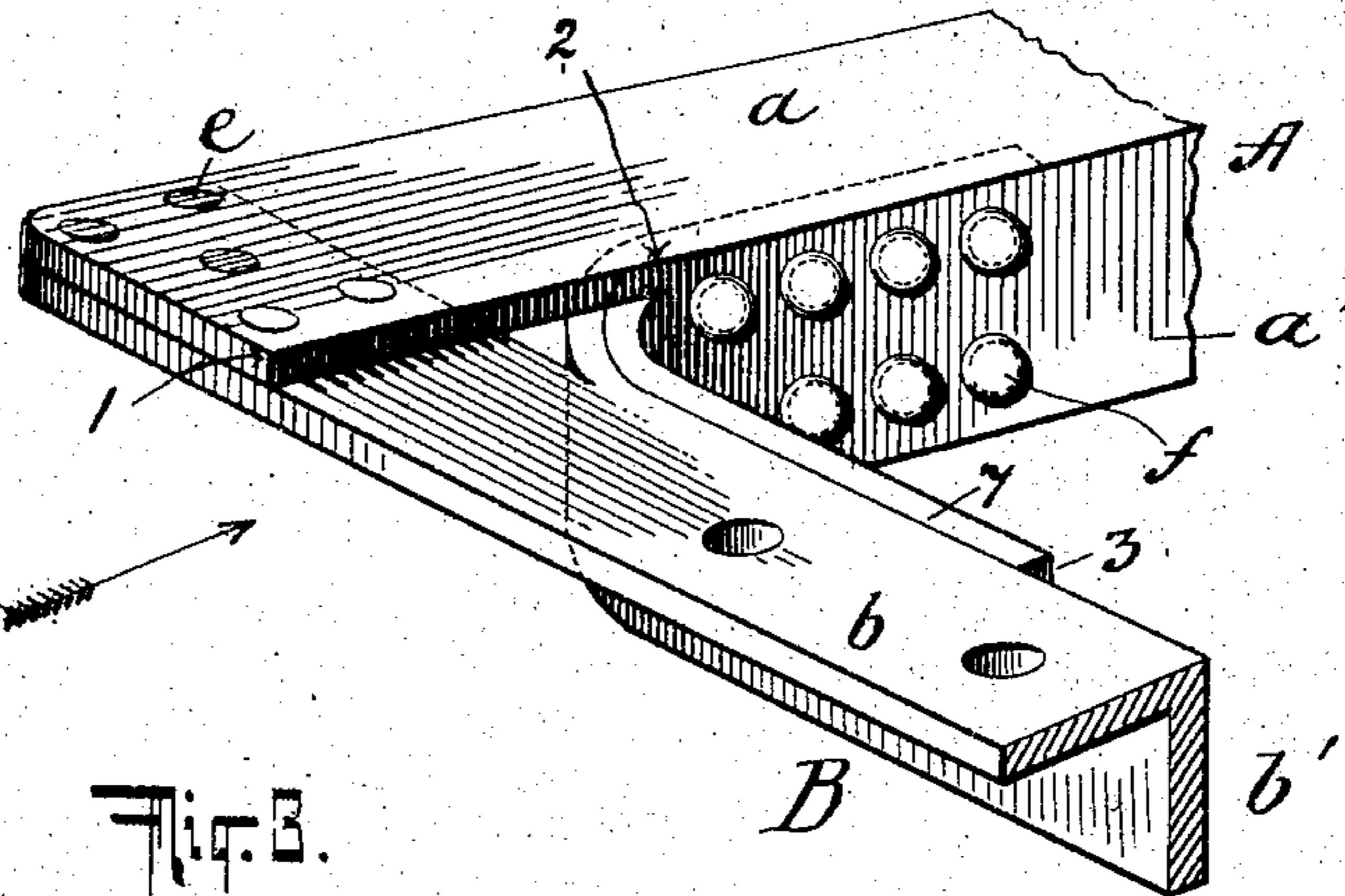


Fig. 3.

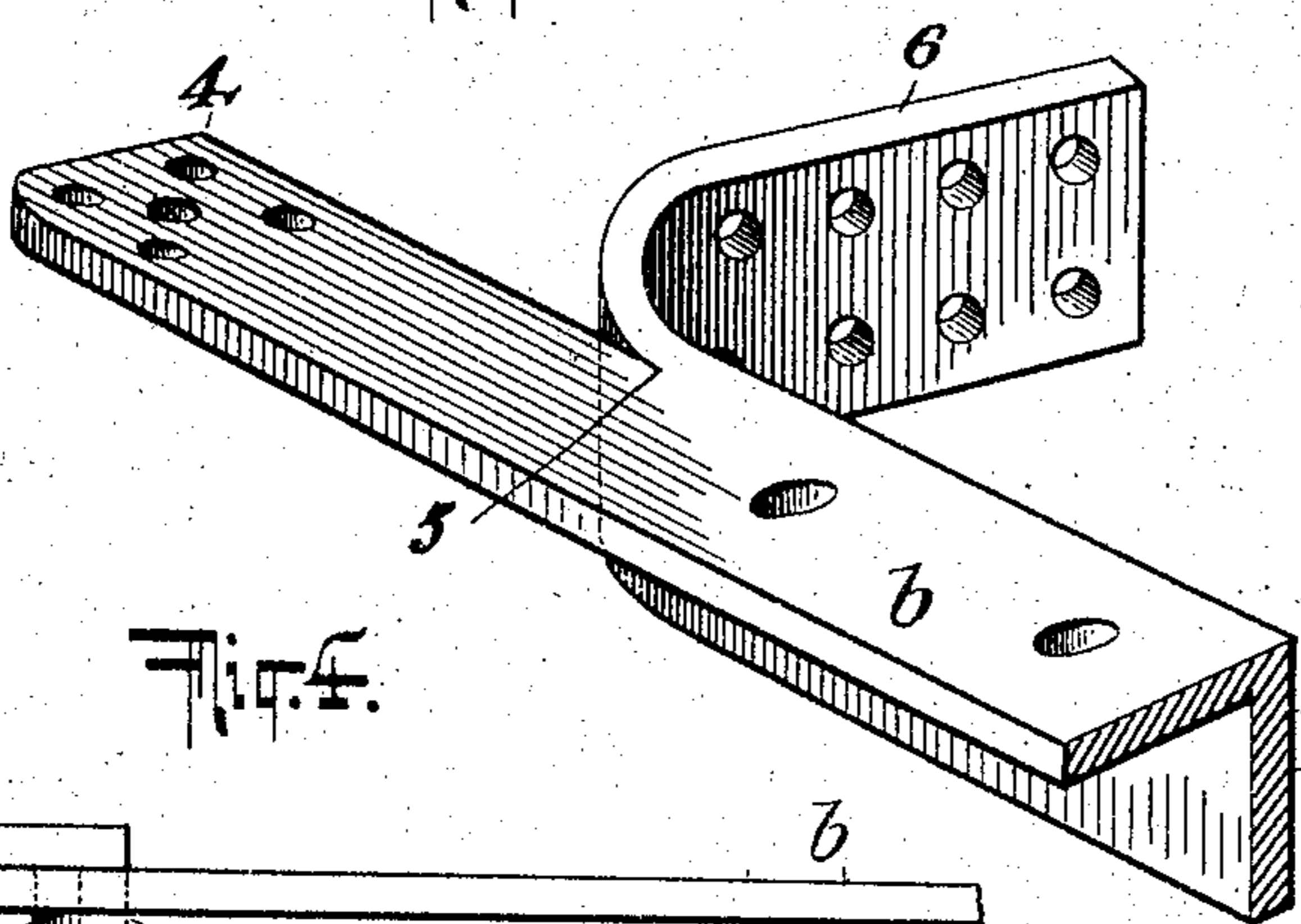


Fig. 4.

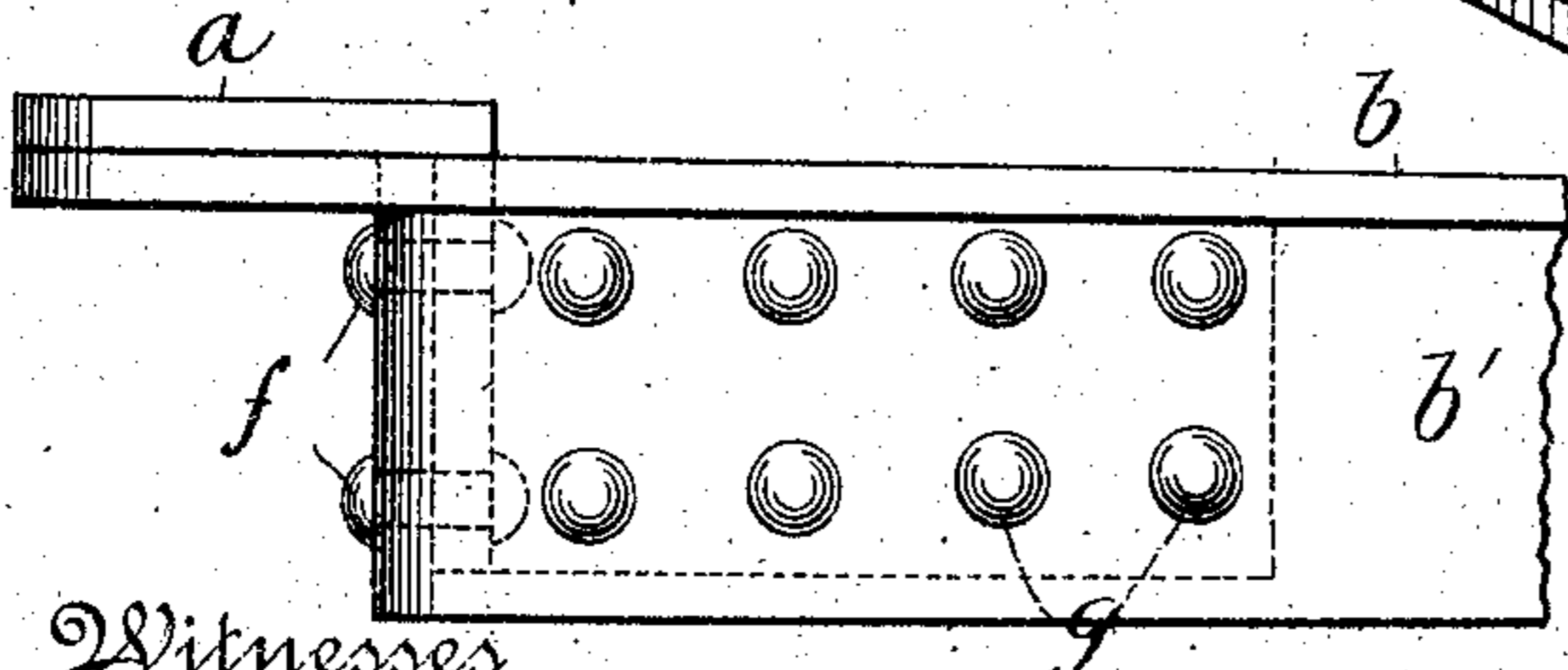
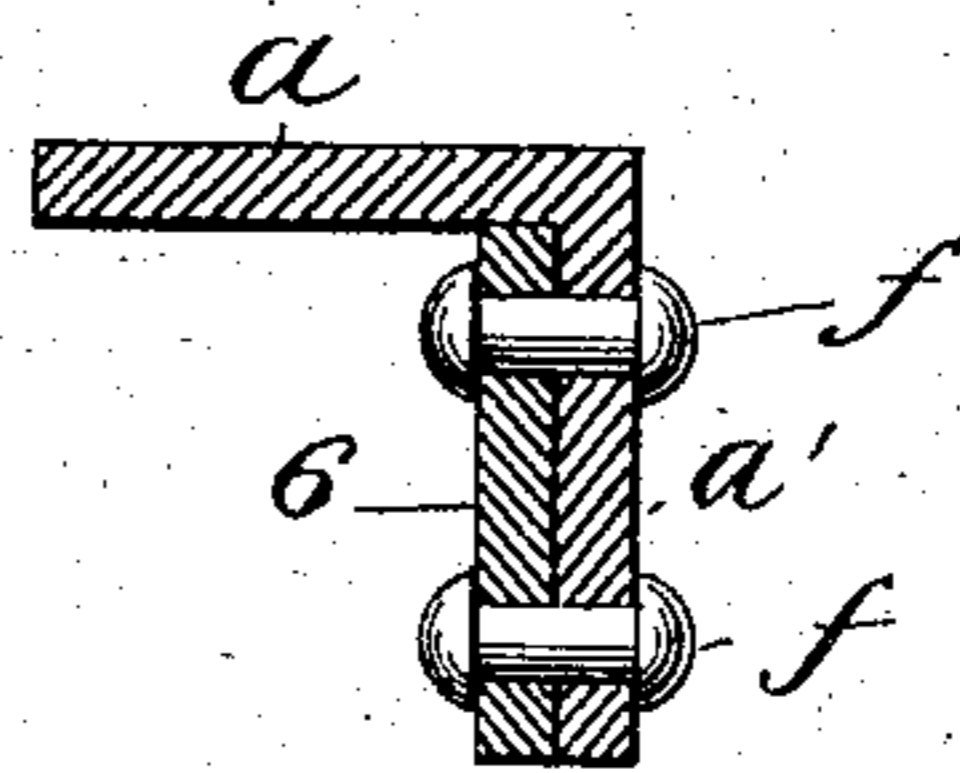


Fig. 5.



Witnesses
Gustav Dietrich
Edwin H. Britton

Inventor
Edward R. Hewitt
By his Attorney *W. M. Rausman*

UNITED STATES PATENT OFFICE.

EDWARD R. HEWITT, OF NEW YORK, N. Y.

METAL FRAME.

SPECIFICATION forming part of Letters Patent No. 781,068, dated January 31, 1905.

Application filed March 23, 1904. Serial No. 199,662.

To all whom it may concern:

Be it known that I, EDWARD R. HEWITT, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Metal Frames, of which the following is a full, clear, and exact description.

This invention relates to the construction of frames from steel or metal of irregular cross-section, and has special reference to the formation of an angle between two meeting lengths of steel or metal having an L-shaped cross-section.

It will be seen at once that it is not an easy problem to join strips which are L-shaped in cross-section so as to have the same strength at the angle as exists at any point in the length of either strip without producing a cumbersome and unsightly job. The difficulty is caused by the fact that the two horizontal webs and the two vertical webs are to be secured together in pairs, and the L-shaped metal does not readily lend itself to such a connection. The manner in which this is accomplished by me will be described with reference to the accompanying drawings, in which—

Figure 1 is a plan of the angle constructed according to my invention. Fig. 2 is a perspective view thereof. Fig. 3 is a perspective view of the end of one of the members of the angle ready for joining with the end of the other member. Fig. 4 is a side elevation of the angle as viewed in the direction of the arrow, and Fig. 5 is a section on line $x-x$ of Fig. 1.

Referring to the drawings by letter, A and B, respectively, represent the ends of two strips of steel or other metal having an L-shaped section. The horizontal member of the strip A is indicated by a and the vertical member of the same strip by a' . The horizontal member of the strip B is indicated by b and the vertical member by b' . To prepare these strips for joining to form an angle, I first take, say, the strip A and sever the horizontal web a from the vertical web a' along a horizontal plane coincident with the under face of the horizontal web and to a distance somewhat greater than the width of the hori-

zontal web or from the point 1 to the point 2. I then bend the vertical web a' laterally on a vertical axis until it stands at an angle with the length of the strip corresponding with the angle to be formed, the deflected web being shown at 3. In a similar manner I prepare the end of strip B—that is, by first slitting the vertical web from the horizontal web on a vertical plane coincident with the inner face of the vertical web or from the point 4 to 5 and then bending the end of the vertical web laterally on a vertical axis to an angle with the strip corresponding with the angle to be formed, as seen at 6. The bend, however, in the latter case is of larger radius than that in the former case—that is to say, the concave surface of the bend 6 will be of substantially the same radius as the convex surface of the bend 3. The two ends are now brought together, the horizontal web of one being placed on top of the horizontal web of the other and the two vertical webs 3 and 6 laid face to face, with their curved or bent portions concentric. This brings the deflected portion 6 of the member B against the inner face of the undeflected vertical web of the part A and vice versa, the deflected vertical web 3 of the strip A against the outer face of the undeflected web b' of the strip B. Thus the two horizontal webs overlap and the two vertical webs overlap. The overlapping members are now riveted together, the horizontal members by the rivets e and the vertical members by the two sets of rivets f and g . By securing the horizontal webs together the strength of those webs in the straight strip is extended to the angle, and by securing the vertical webs together their function is likewise extended to the angle, but in a double sense, for the parts held together by the rivets f serve to resist strains or stresses in one direction, while the parts held together by the rivets g serve to resist the stresses along other directions. The angle therefore becomes very strong, and this is accomplished without the aid of fish-plates, angle-irons, or extra pieces of any character.

The fact that the horizontal members are placed one on top of the other makes it necessary to sever one of them from its corre-

sponding vertical member on a horizontal plane and to sever the other on a vertical plane, so that when the angle is assembled the upper edges of the two vertical webs will
5 be flush, as seen at 7.

In the illustration of the angle the deflected parts 6 and 3 are longer than the distance between the points 4 and 5 or 1 and 2. The purpose of this is to have the parts 3 and 6
10 long enough to afford the necessary strength after riveting and to allow for the bends.

Having described my invention, I claim—

1. An angle formed by the meeting of two strips, each substantially L-shaped in cross-
15 section, both of the webs of one strip being overlapped upon, and directly secured to, the respective corresponding webs of the other strip.

2. An angle formed by the meeting of two
20 strips, each L-shaped in cross-section, a por-

tion of the vertical web of each strip being severed from its corresponding horizontal web and deflected laterally to overlap the undeflected portion of the vertical web of the
25 opposed strip.

3. An angle formed by the meeting of two strips, each L-shaped in cross-section, a portion of the vertical web of one strip being severed on a horizontal plane from its corresponding horizontal web, and a portion of the
30 vertical web of the other strip being severed on a vertical plane from its corresponding horizontal web, said severed vertical portions being deflected and overlapping each other.

In witness whereof I subscribe my signature
35 in presence of two witnesses.

EDWARD R. HEWITT.

Witnesses:

FRANK S. OBER,
WALDO M. CHAPIN.