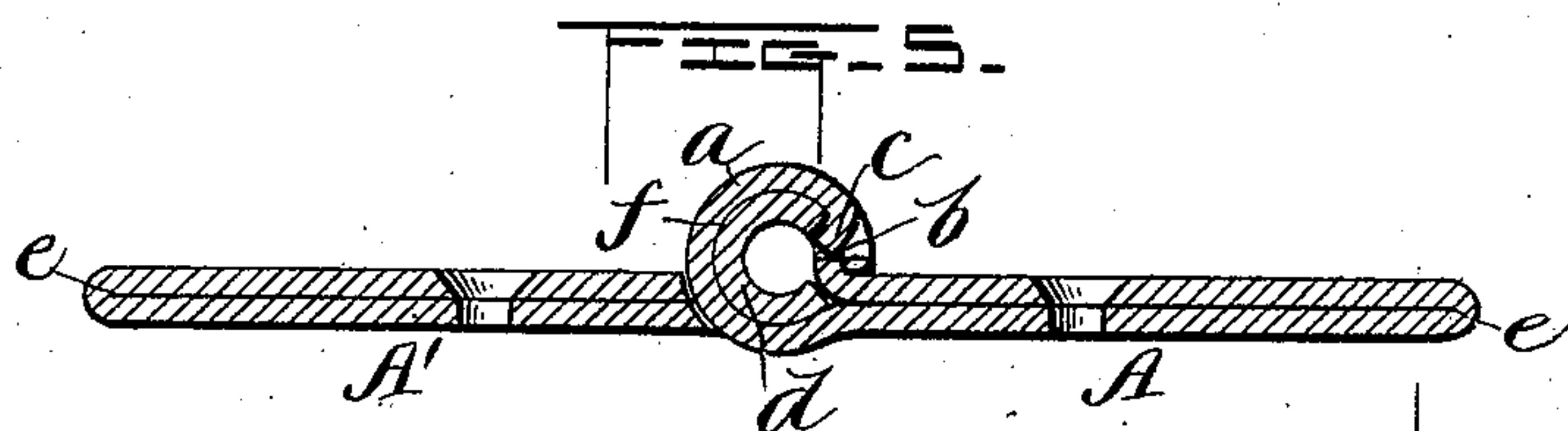
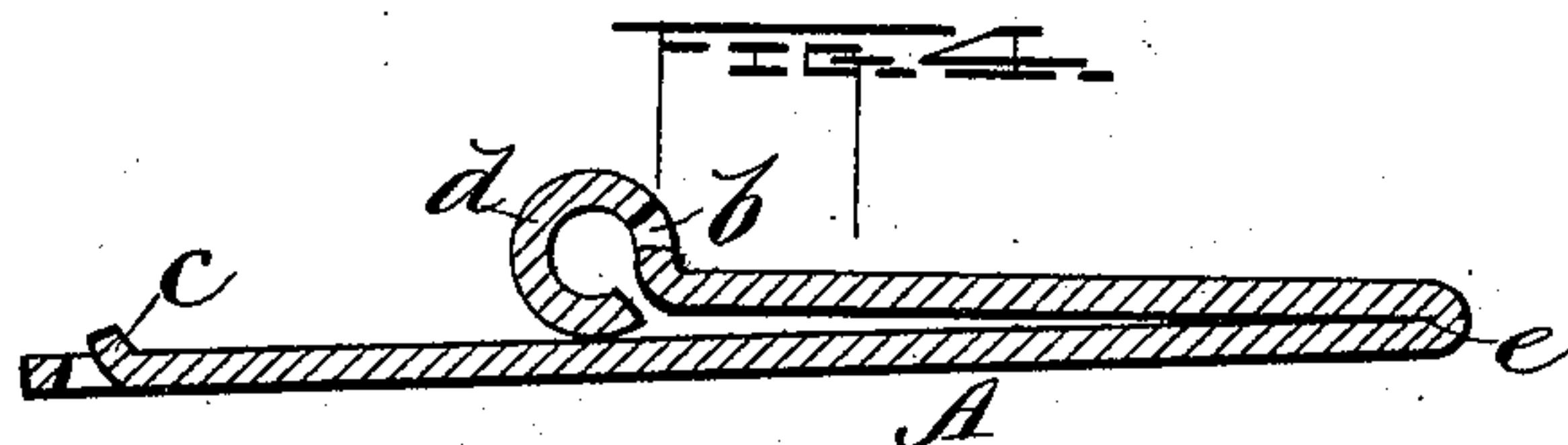
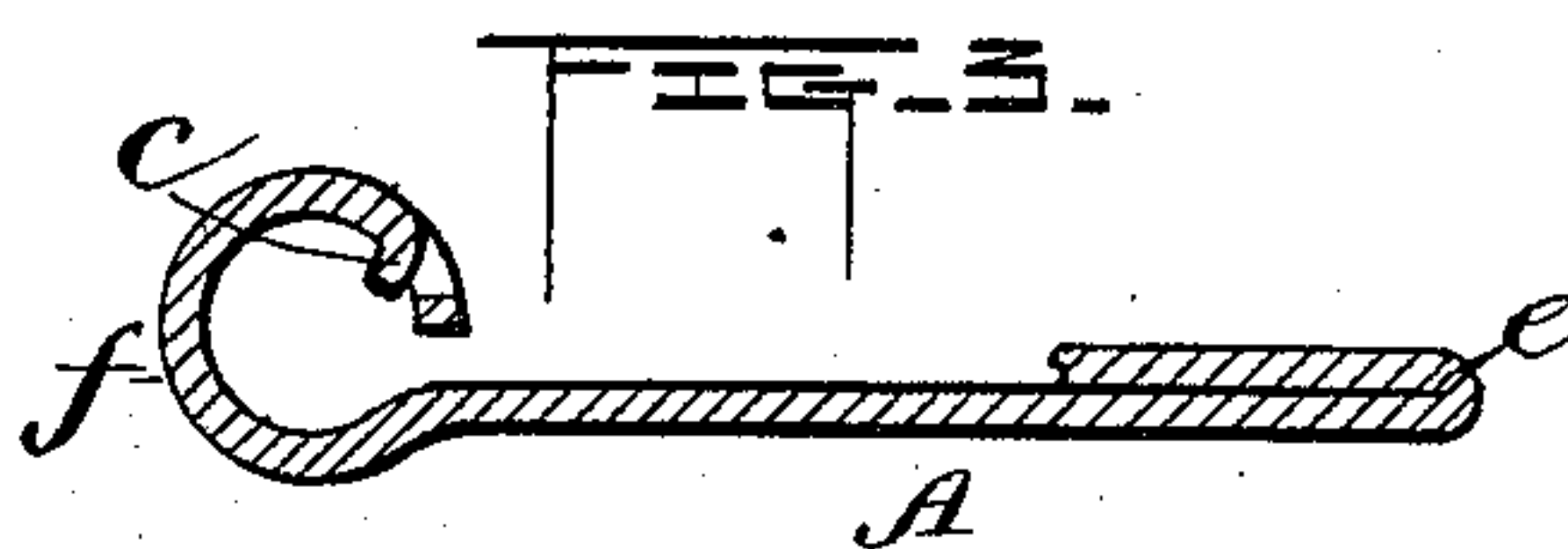
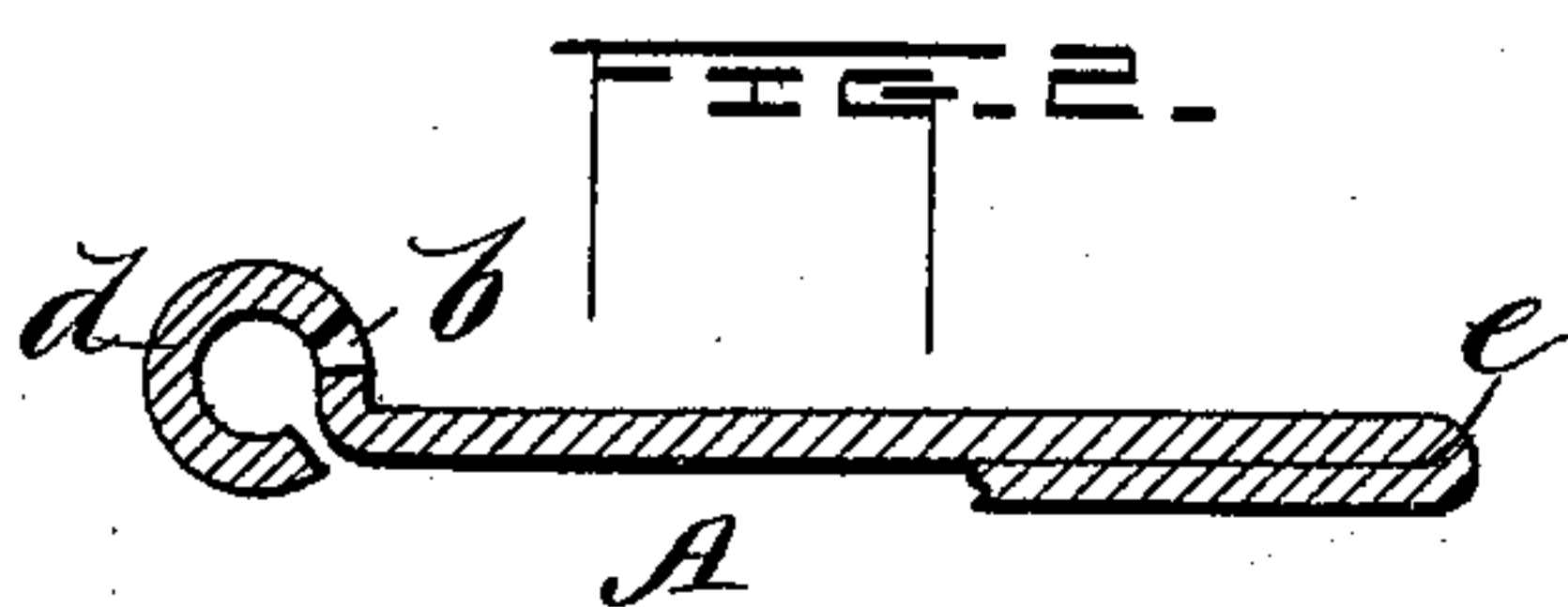
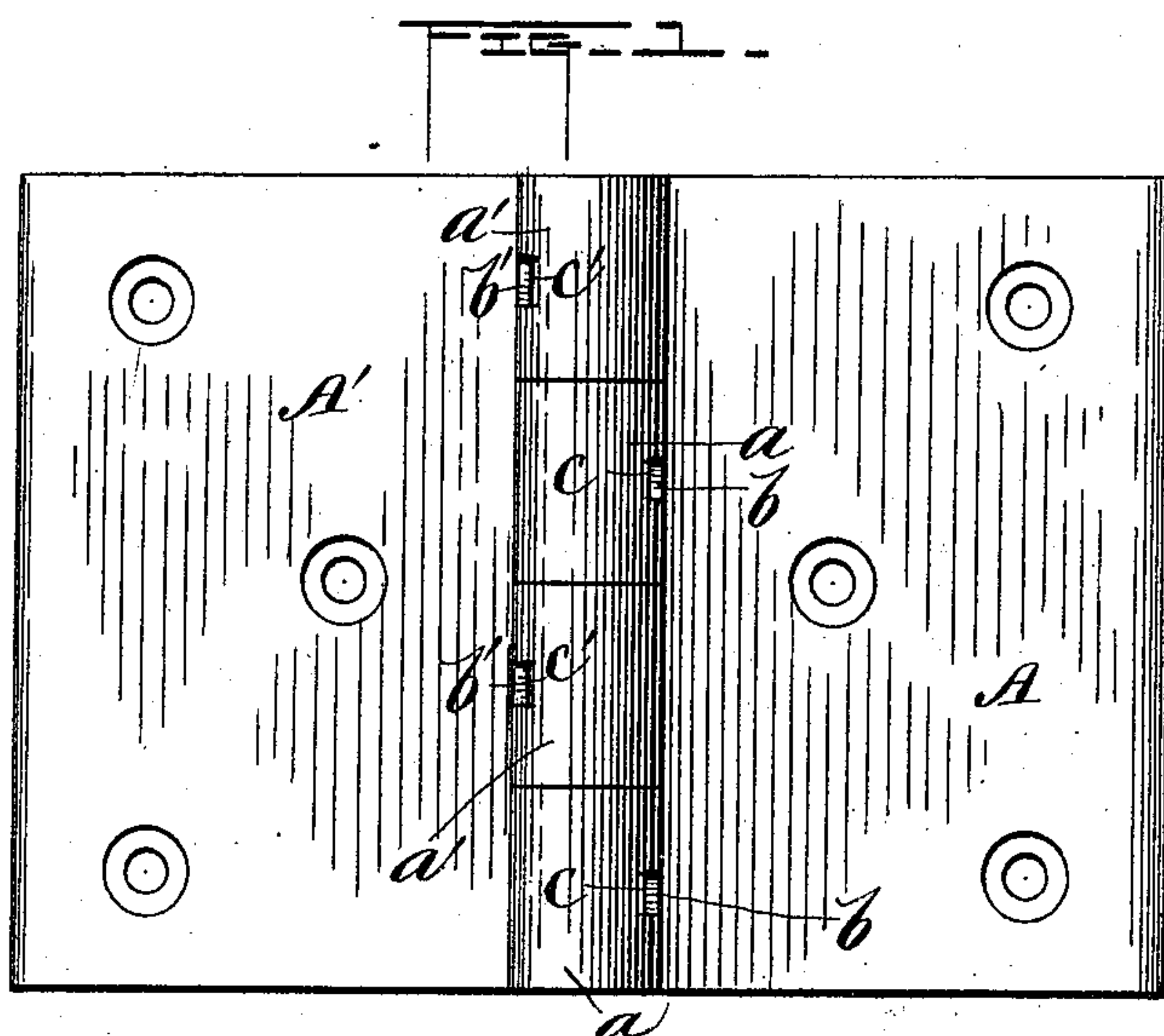


(No Model.)

I. F. HARRIS.  
HINGE.

No. 486,104.

Patented Nov. 15, 1892.



Witness:  
E. J. Tenwick

Ira F. Harris  
by his Attorney  
Mason, Fenwick & Lawrence

# UNITED STATES PATENT OFFICE.

IRA F. HARRIS, OF NASHUA, NEW HAMPSHIRE.

## HINGE.

SPECIFICATION forming part of Letters Patent No. 486,104, dated November 15, 1892.

Application filed June 16, 1892. Serial No. 436,929. (No model.)

*To all whom it may concern:*

Be it known that I, IRA F. HARRIS, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Butt-Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to butt-hinges having their respective leaves made by doubling the thickness of the metal; and its object is to furnish a double-plate hinge the pintle-eye portions of which are formed by bending the eye parts of one portion around the pintle in one direction and the eye parts of the other portion around the eye parts of the portion just bent in an opposite direction, thus forming a double thickness around the pintle; also, to make such hinges strong at the pintle-eyes and to firmly fasten together the termini of the doubled metal; and to this end my invention consists in forming on the inner termini of the doubled metal circular concentric hollow portions adapted for fitting one within the other, and when fitted into one another forming the pintle-eyes. It also consists in forming passages in one set of the curved portions, whereby the folded portions are held firmly in place one upon the other; and it consists, third, in the improved hinge, as hereinafter described, formed of doubled sheet or other metal.

In the accompanying drawings, Figure 1 is a face view of a complete butt-hinge constructed in accordance with my invention. Fig. 2 is a section of one portion of a hinge-leaf as it would appear after the hinge is completed and the pintle-eyes of this portion have been bent around the eye parts of the other portion. Fig. 3 is a similar section of the other portion as it would appear after it has been shaped and perforated ready for having the first-mentioned portion bent around its pintle-eye parts and fastened to it by lugs formed on the first-mentioned portion. Fig. 4 is a section of the leaf as it appears just before the first-mentioned portions are bent around the eye parts of the other portion, and Fig. 5 is a section of the completed hinge as shown in Fig. 1.

A A' in the drawings designate the two leaves of a butt-hinge. These leaves have pintle-eyes *a a'*, which appear externally the same as an ordinary butt-hinge, except that neatly-finished perforations *b b'*, with fastening-lugs *c c'* therein, are visible on the outside of the eyes.

To make the hinge-leaves, I take, preferably, a single sheet or piece of steel or malleable metal and first perforate the same, as indicated at *b b'*, and at proper points stamp or cut lugs *c c'*, which will enter the perforations when the sheet is completely shaped and folded. Next the hollow concentric curved portions *d* are formed on one terminus of the sheet by bending the sheet in one direction, and then the metal is folded, as at *e*, and the concentric hollow curved portions *f*, forming the pintle-eyes, are formed by bending the metal in an opposite direction around the curved portions *d* and forcing the lugs into the perforations *b b'*. This done, the whole is properly pressed, as necessity may require, and finished in any appropriate manner to adapt the hinges for use. This mode of constructing butt-hinges is comparatively cheap, and at the same time a very solid and strong sheet-metal hinge is secured, and the same differs from that type of hinge which has the eye parts of the respective leaves bent around in the same direction, as by bending the eye portions in opposite directions the ends of the inner bends of the eye portions are caused to abut against closed portions of the outer bends of the eye portions, and this is one of the distinguishing features of my construction.

It is practicable, and might in some cases be desirable, to have the upper and lower portions of the doubled leaves of the hinge separated at *e*, and if such construction is adopted two plates or sheets would be formed by bending the inner pintle-eye portions in one direction and the outer pintle-eye portions around the inner portion in an opposite direction, precisely as described, and when the operation is completed the two sheets would be pressed and riveted together.

What I claim as my invention is—

1. The doubled sheet-metal hinge-leaves formed by bending the pintle-eye parts on one portion in one direction and then bending the



pintle-eyes of the other portion in an opposite direction around the first-mentioned eye parts, substantially as described.

2. The within-described doubled sheet-metal  
5 butt-hinge, having its eye portions at one terminus of the sheet inclosed or surrounded by eye parts on the other portion of the sheet and the two eye parts fastened by means of lugs

of the sheet entered into perforations, substantially as described. 10

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

IRA F. HARRIS.

Witnesses:

R. T. SMITH,

F. I. ROBINSON.