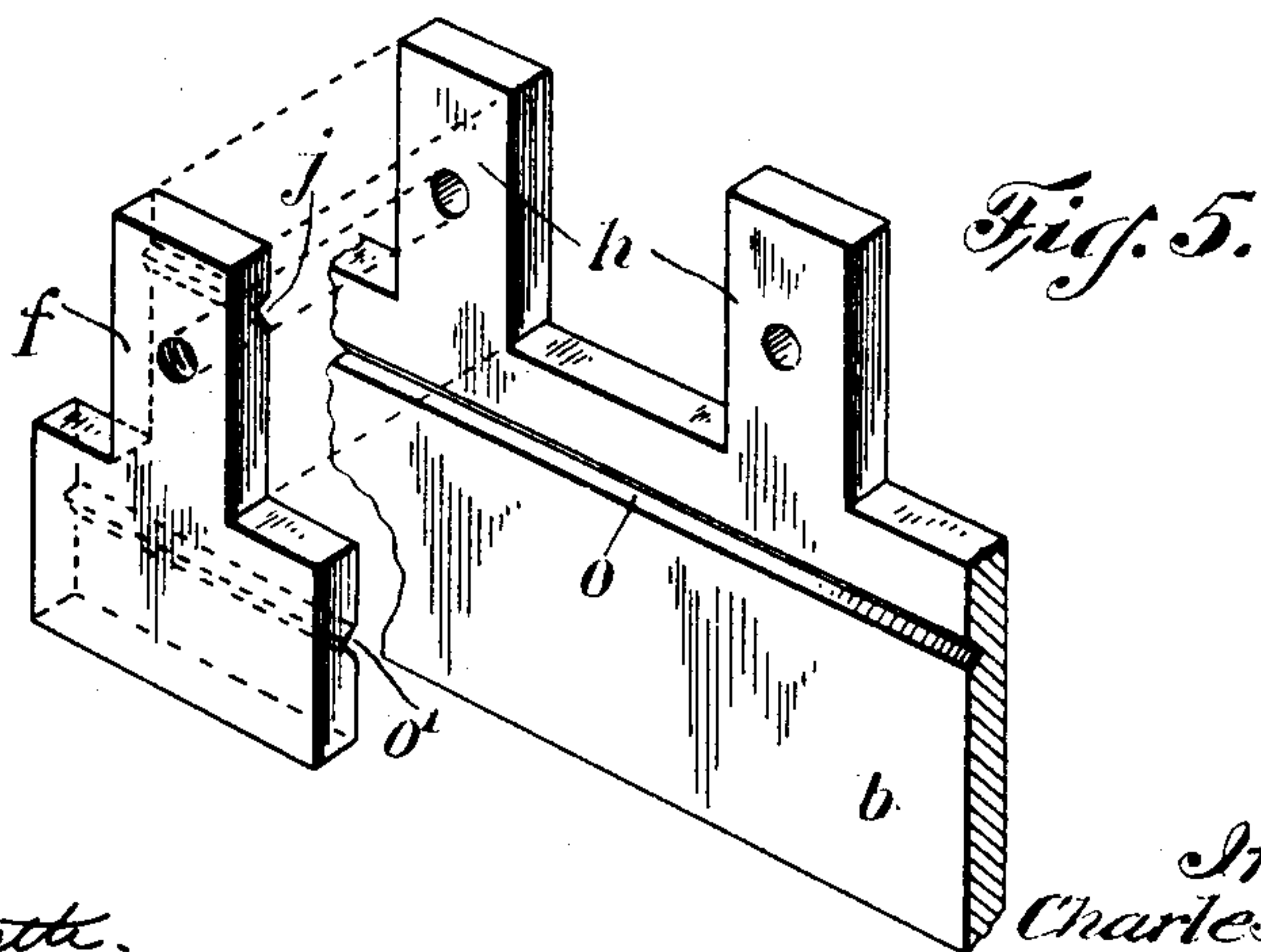
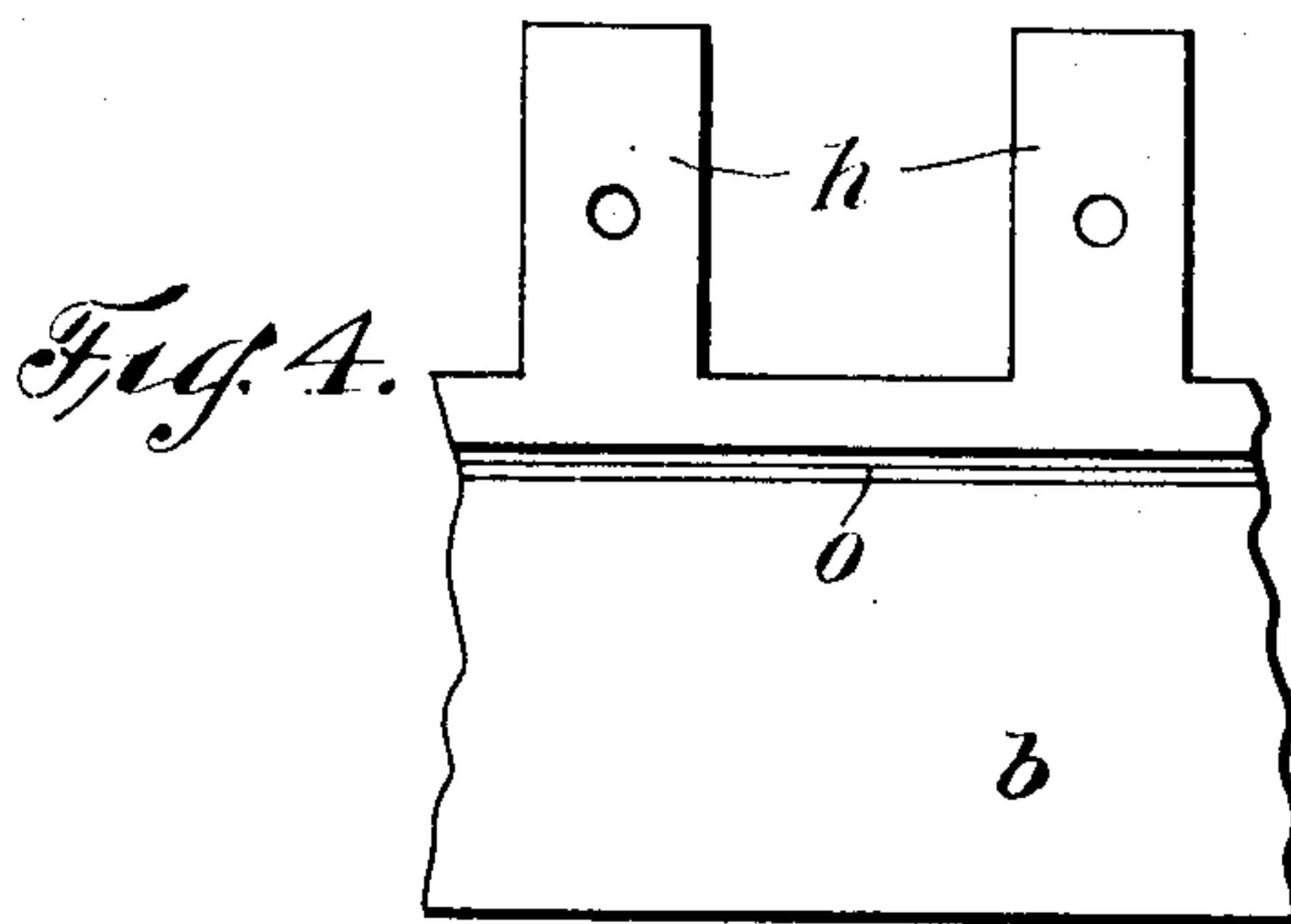
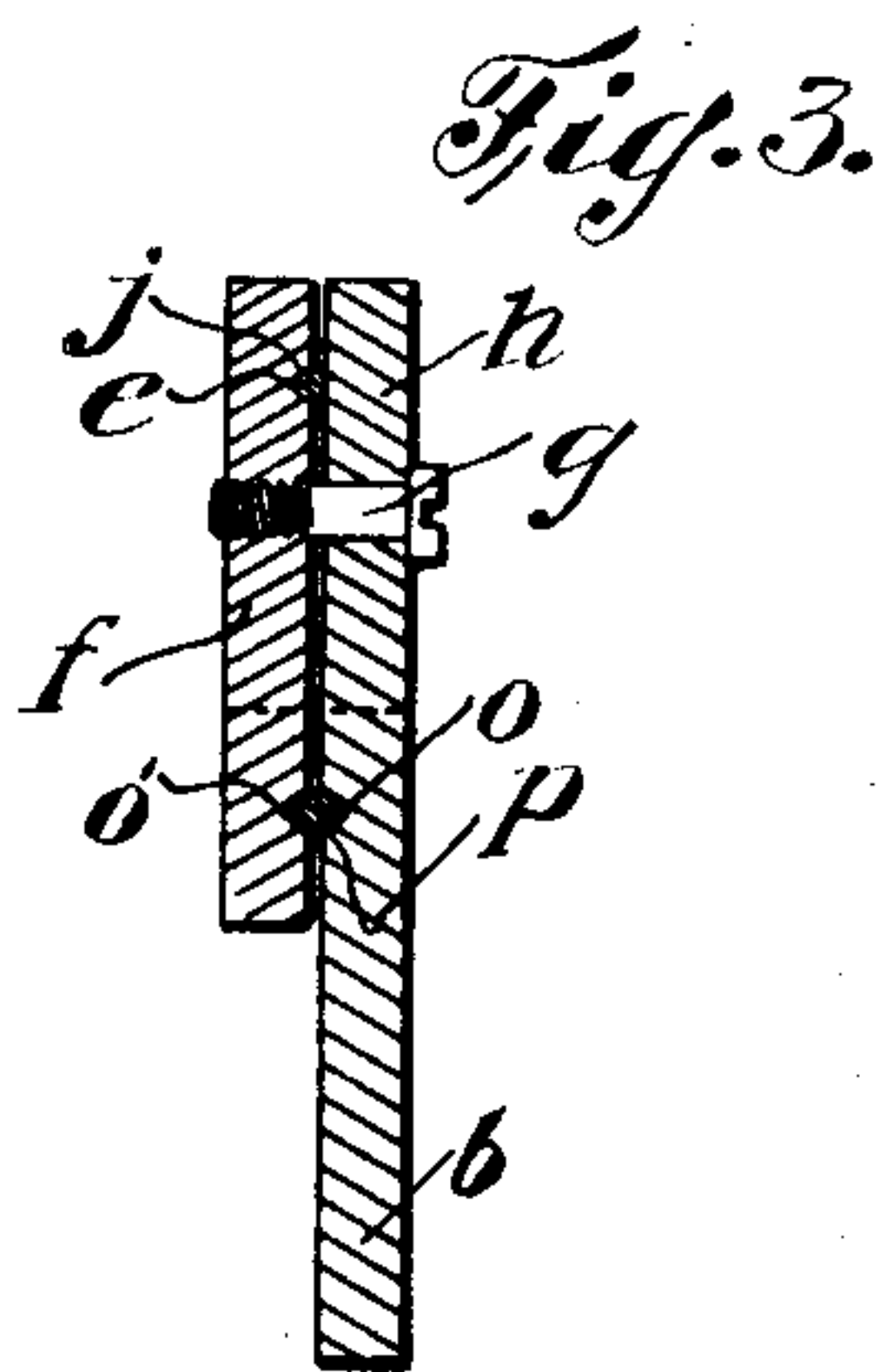
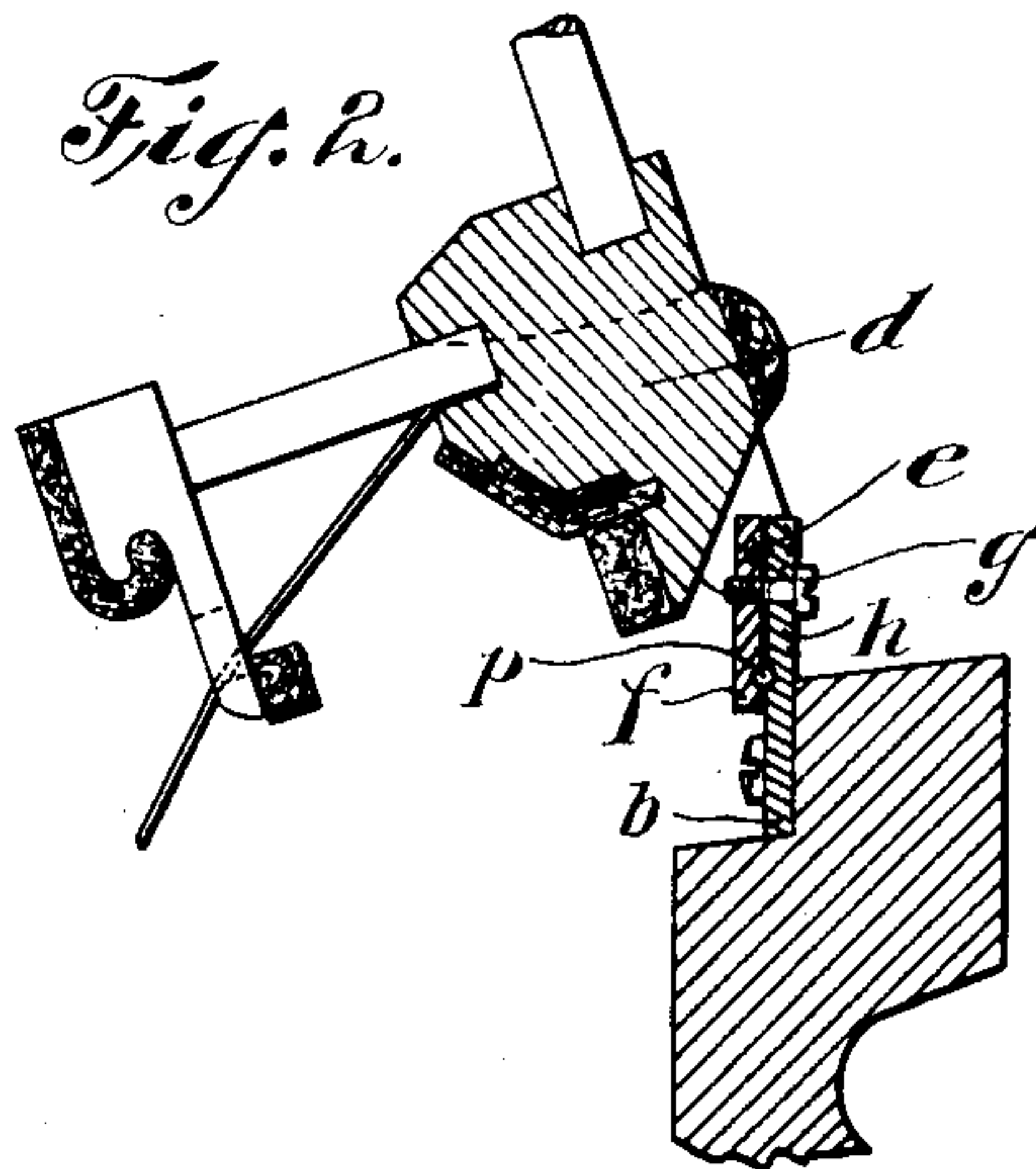
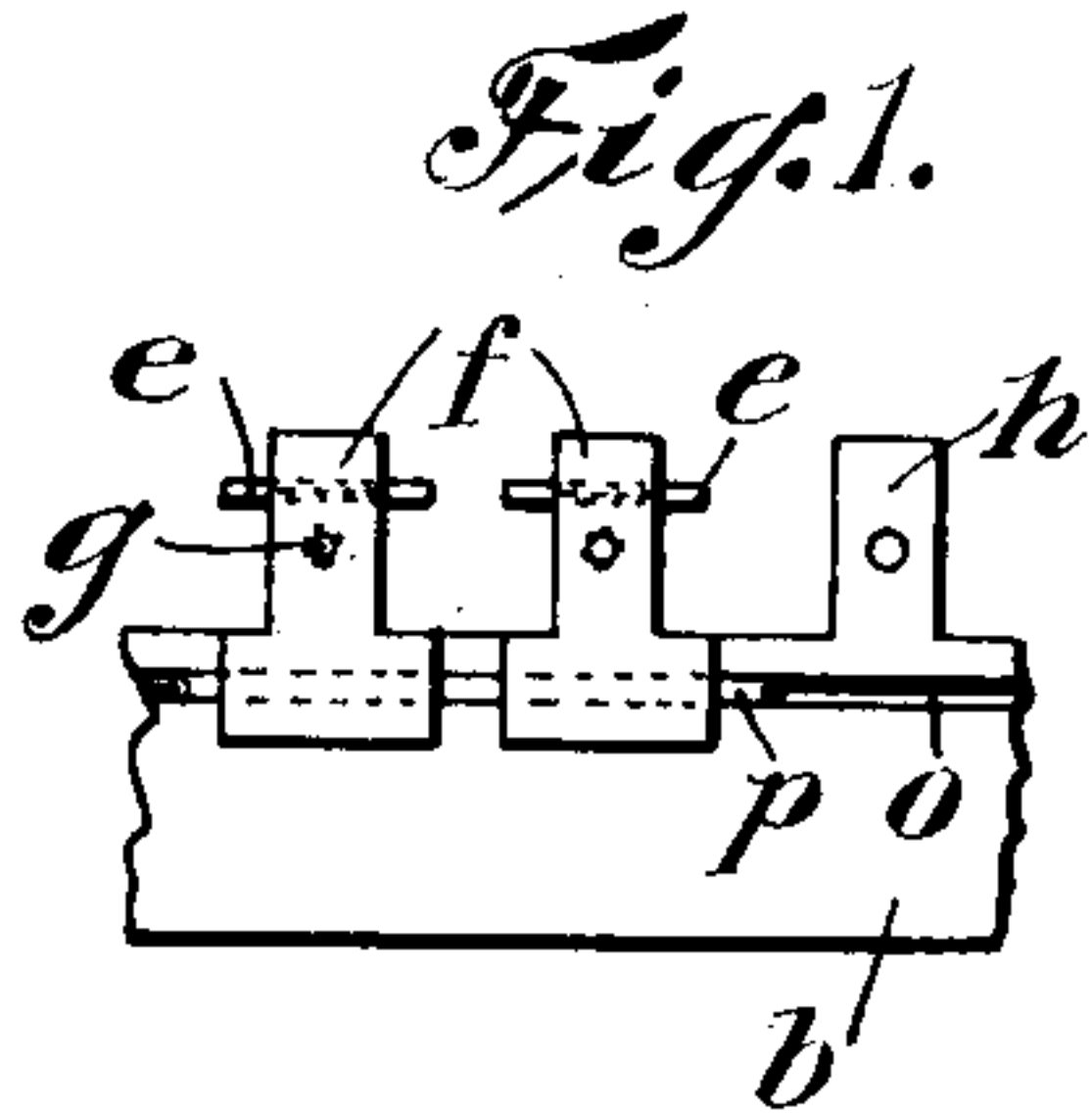


C. P. BLINN.
HAMMER SUPPORTING FLANGE FOR PIANO ACTIONS.
APPLICATION FILED AUG. 26, 1909.

999,480.

Patented Aug. 1, 1911.



Witnesses:
P. St. Pizette.
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UNITED STATES PATENT OFFICE.

CHARLES P. BLINN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO A. M. McPHAIL PIANO COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

HAMMER-SUPPORTING FLANGE FOR PIANO-ACTIONS.

999,480.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed August 26, 1909. Serial No. 514,700.

To all whom it may concern:

Be it known that I, CHARLES P. BLINN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Hammer-Supporting Flanges for Piano-Actions, of which the following is a specification.

This invention relates to piano actions and has particular reference to the mounting of the hammers.

A well known type of continuous flange for supporting the hammers or butts, has consisted of a strip or body portion having integral lugs, each such lug having a transverse groove in its face to receive the pivot pin or short wire for the hammer butt, a clamping plate being employed for holding said pivot or wire in the groove of the lug. Whenever a break has occurred, it has always been along the groove of the lug, and prior to my Patent 809,042, it had been customary to replace one continuous flange by a new one whenever one of the lugs broke. This involved dismantling a large number of hammers, resulting in a loss of time and considerable expense for a new continuous flange.

Under my Patent, 809,042, granted January 2, 1906, a convenient method of avoiding dismantling more than the one hammer whose support has been broken, is to break out the portion of the body of the flange which carries the broken lug. While this has proved very satisfactory, yet there are some difficulties in connection therewith, which difficulties it has been my aim to overcome in the present invention.

While the object of my present invention may be stated to be practically the same as in my Patent, 809,042, yet I accomplish that object in a different way, and in some respects a simpler and more easily performed manner, and provide also for a cheaper construction of the continuous flange.

In carrying out my invention I leave the lugs of the body portion untouched so that they retain their original thickness throughout, and form a transverse groove in the clamping face of each clamping plate, thereby rendering it only necessary to substitute a new clamping plate for a broken one, when a break occurs, and also providing a more easily constructed support for the hammers because the individual clamp-

ing plates may be produced very economically as by stamping them.

My invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings:—Figure 1 is an elevation of a portion of a continuous flange. Fig. 2 represents a transverse section of the same on a larger scale, showing a portion of one hammer. Fig. 3 is a section through the continuous flange and one of its lugs and clamping plates, on a larger scale than Fig. 2. Fig. 4 is an elevation of the portion of the continuous flange shown in Fig. 1, the clamping plates and pivots being removed. Fig. 5 is a perspective view of a portion of a continuous flange, and one clamping plate, separated from each other.

Similar reference characters indicate the same or similar parts in all of the views.

The continuous flange comprises a body portion *b* having a series of integral lugs *h*, said lugs *h* being of uniform thickness throughout; that is, the lugs have no transverse grooves. The body portion *b*, however, has a slight groove *o* extending from end to end, for a purpose which will be presently described.

The hammer butts *d* are supported upon pivots *e* which are usually made of short sections of wire. To hold these pivots *e* in accurate horizontal position, and so that they cannot slip, I provide T-shaped clamping plates *f* the rear faces of which are transversely grooved at *j*, screws *g* being employed to secure the clamping plates and lugs together so as to bind the pivots *e* against the smooth faces of the lugs *h*.

To enable the clamping plates to be secured each by means of a single screw, and so that said clamping plates cannot rock or tilt on the screws *g*, the clamping face of the base portion of each plate *f* is provided with a groove *o'* near its foot, the grooves *o'* in the row of plates *f* being opposite the groove *o* in the body portion *b* of the flange, so that a rib *p* which may consist of a length of wire may be held partially in the groove *o* and partially in the series of grooves *o'*, whereby the clamping plates are steadied and prevented from rocking on their screws *g*, the broad base portion of the T-shaped clamping plates materially assisting in pre-

venting them from rocking on the flange. This steadying rib p lines up the small separate clamping plates f in a much simpler and cheaper manner than would pins or
 5 lugs on the body portion entering notches in the plates.

So far as I am aware, all breaks in the support for the hammers of a piano action, occur along the grooves of the lugs owing
 10 to the fact that said grooves weaken the lugs. This may have been partly due to the difficulty of manufacturing the flange with the grooved lugs. The only practical way heretofore of manufacturing the flange was to
 15 first mill a slight groove near one edge, and then cross mill the flange, usually by clamping a bunch of them together, such cross milling cutting out the metal so as to leave the lugs. The milling operation along the
 20 strip near its edge has been liable to result in flaws which finally result in breakages. By my invention, the body of the flange and its lugs possess all of the original strength of the metal, and the clamping plates f
 25 which have the grooves may be produced by cheap and practical methods such as stamping, which will leave such plates considerably stronger than if the grooves for the pivots e were formed by milling. More-
 30 over, if a breakage occurs, it must be caused in the plate and not in a lug of the flange. When this happens it is only necessary to replace the broken plate f by a new one.

While I have shown the body portion b
 35 as having a face groove o for the steadying rib p , it is not necessary to provide said groove o because the series of grooves o' in the series of plates f will hold the steadying rib in position. The two grooves j and
 40 o' in each plate f may be formed at the same time, whether by stamping or otherwise.

Having now described my invention, what I claim is:

45 1. A continuous flange for upright piano

actions comprising a body portion provided with a series of upright lugs of uniform thickness throughout their length and having plane surfaces, said body portion being provided with a continuous longitudinal
 50 groove, a series of T-shaped clamping plates cooperating with the said lugs each provided near its top with a transverse groove to receive the pivot pin of a hammer, means for securing said plates on said lugs, where-
 55 by said pins are retained within said grooves by the faces of said lugs, said clamping plates also having transverse grooves in their face portions opposite the groove in the body portion of said flange, and a con-
 60 tinuous member disposed in said longitudinal groove and engaging the grooves in the base portion of said plates to secure said plates against movement upon said lugs.

2. A continuous flange for upright piano
 65 actions comprising a body portion provided with a series of upright lugs of uniform thickness throughout their length and having plane surfaces, said body portion being provided with a continuous longitudinal
 70 groove, a series of clamping plates cooperative with the said lugs, each provided near its top with a transverse groove to receive the pivot pin of a hammer, means for se-
 75 curing said plates on said lugs whereby said pins are retained within said grooves by the faces of said lugs, said clamping plates also having transverse grooves near their lower ends opposite the groove in the body portion of said flange, and a continuous member dis-
 80 posed in said longitudinal groove and engaging the grooves in the lower ends of said plates to secure said plates against movement upon said lugs.

In testimony whereof I have affixed my
 85 signature, in presence of two witnesses.

CHARLES P. BLINN.

Witnesses:

A. W. HARRISON,
 P. W. PEZZETTI.