

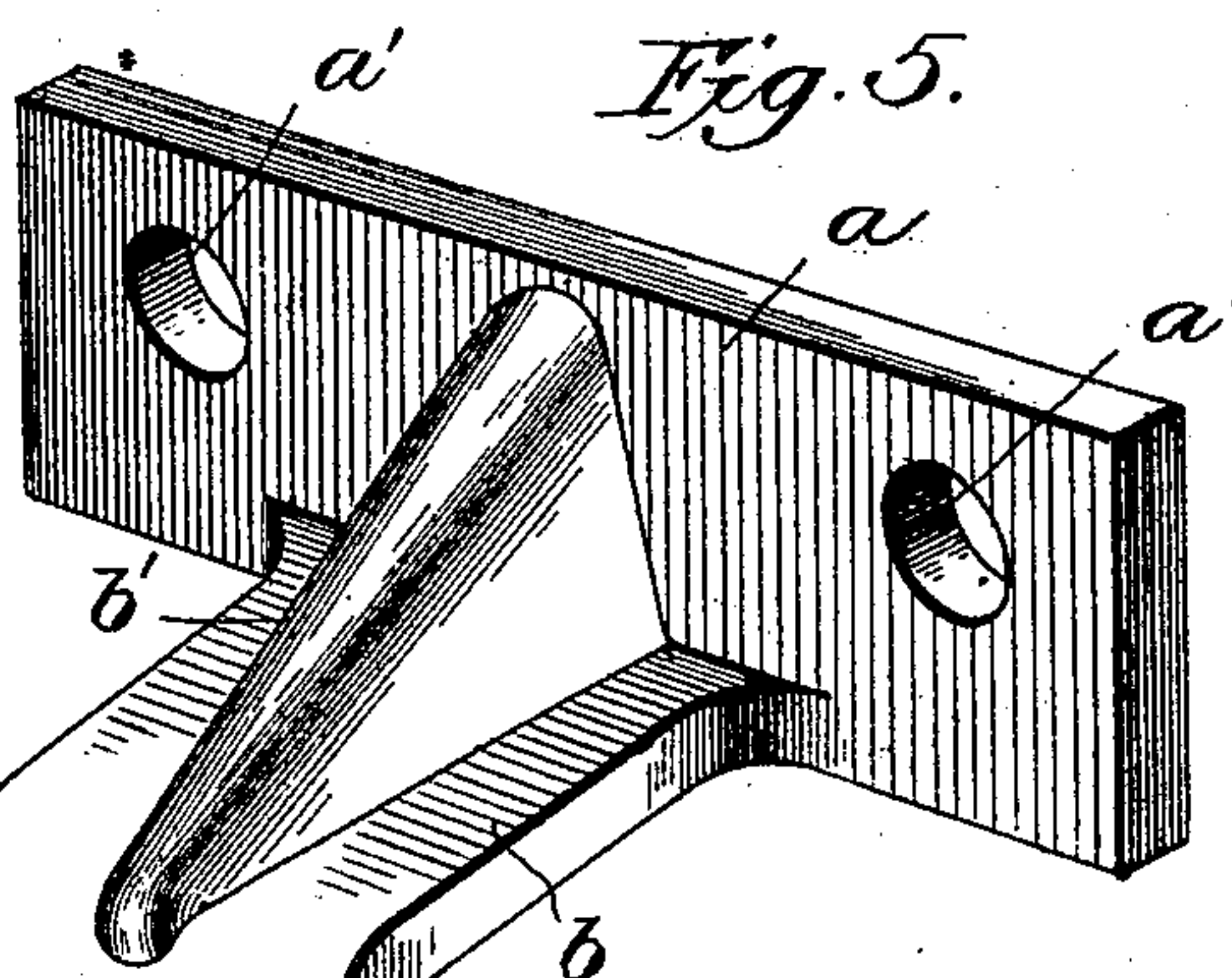
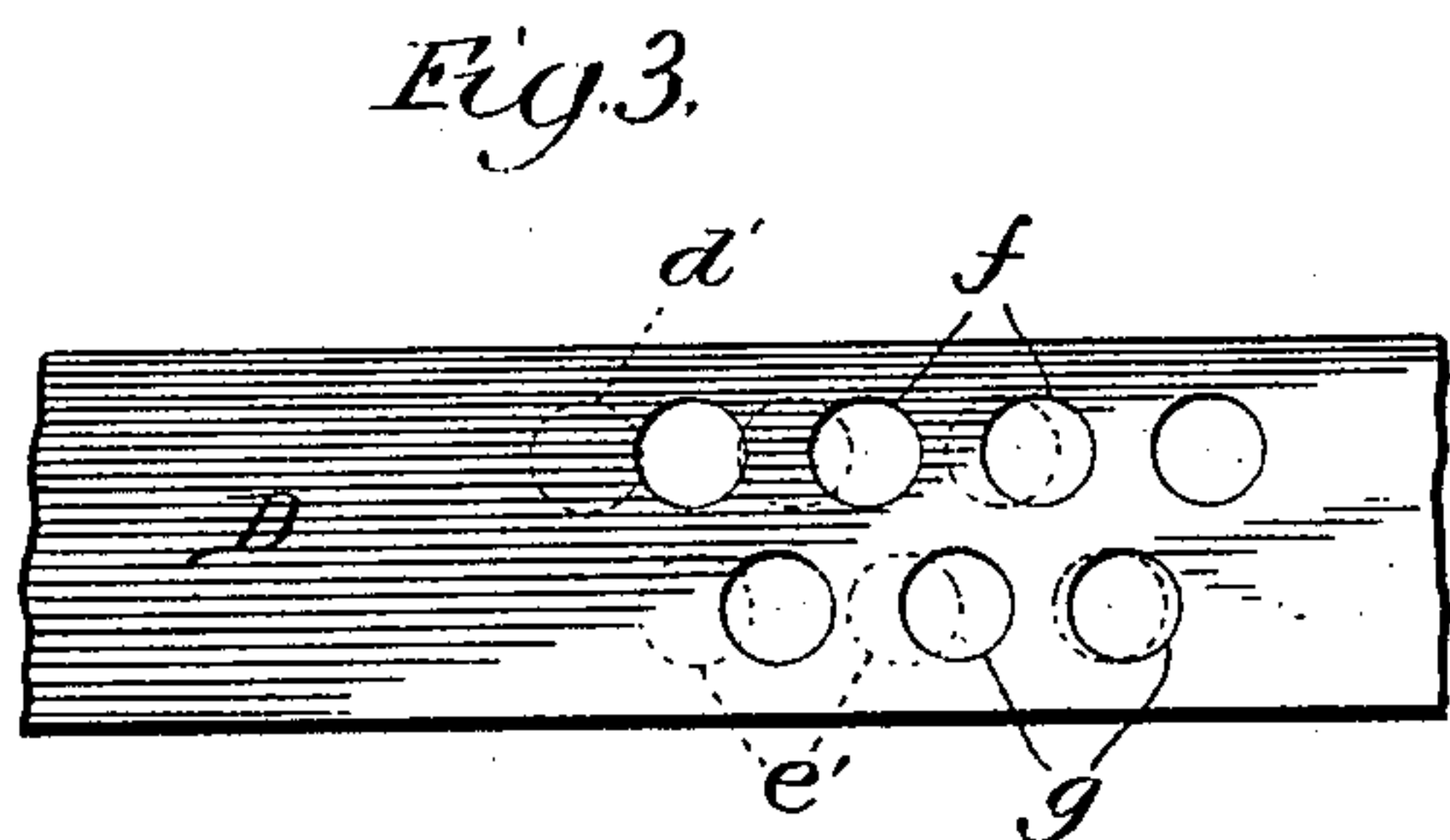
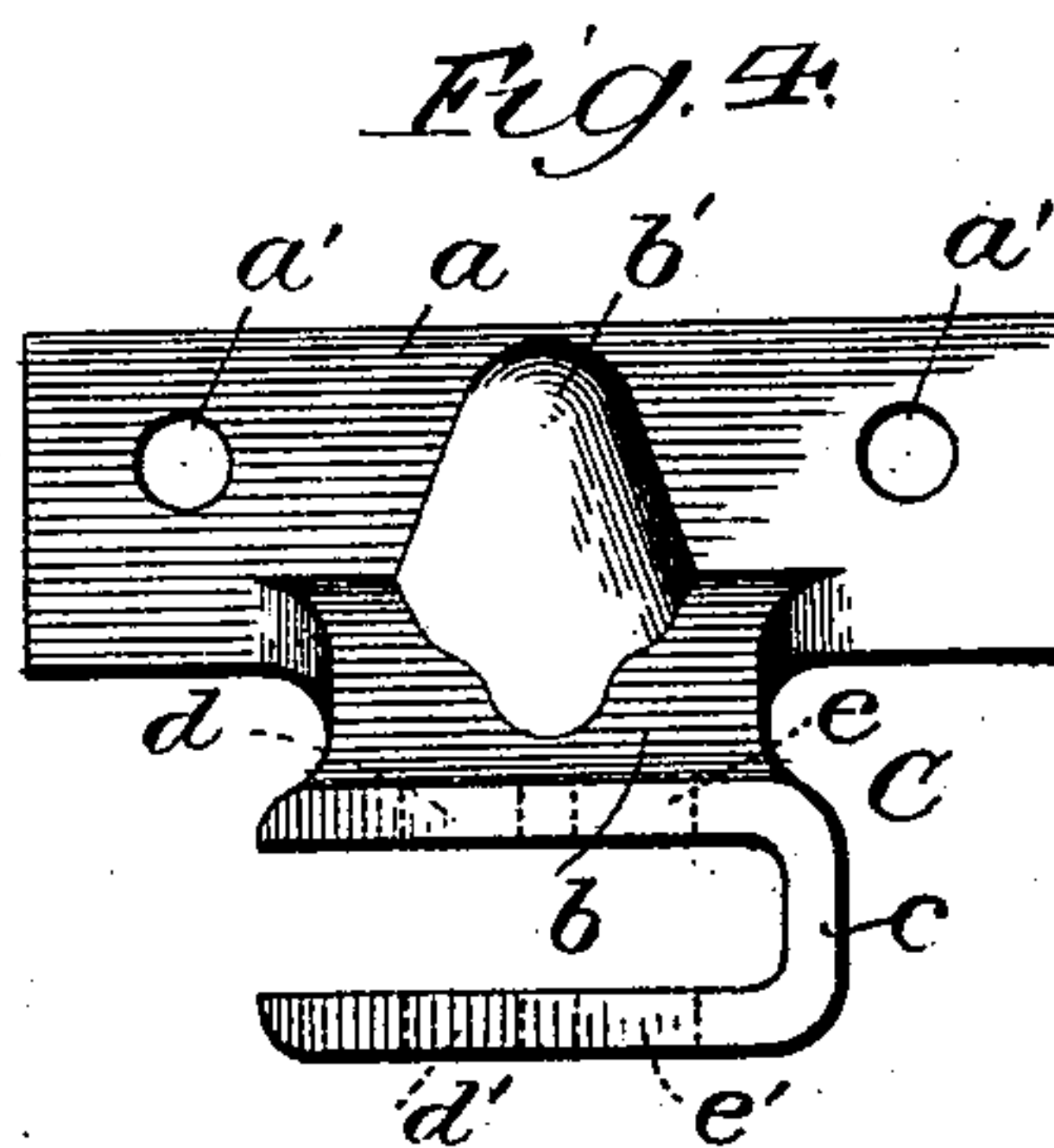
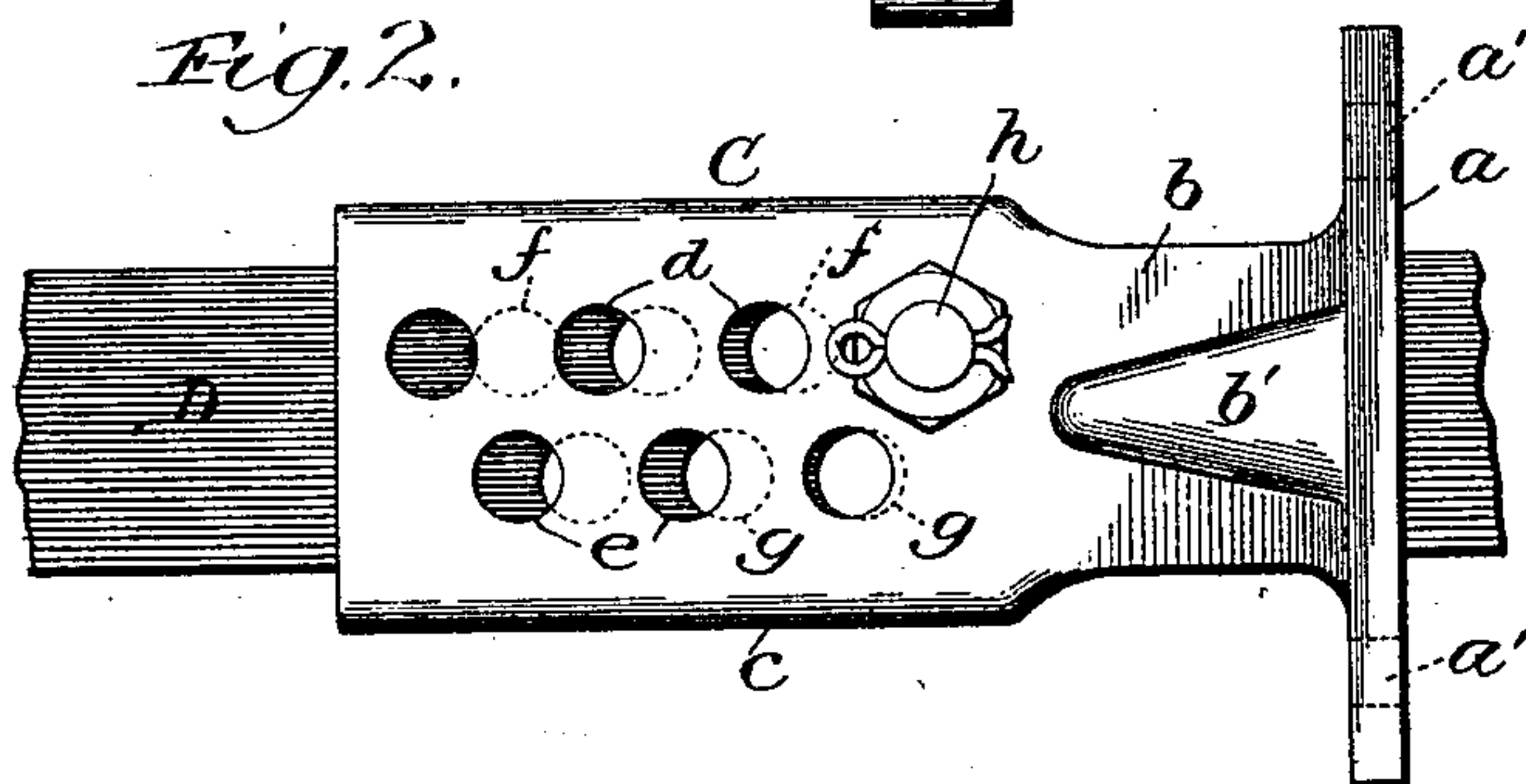
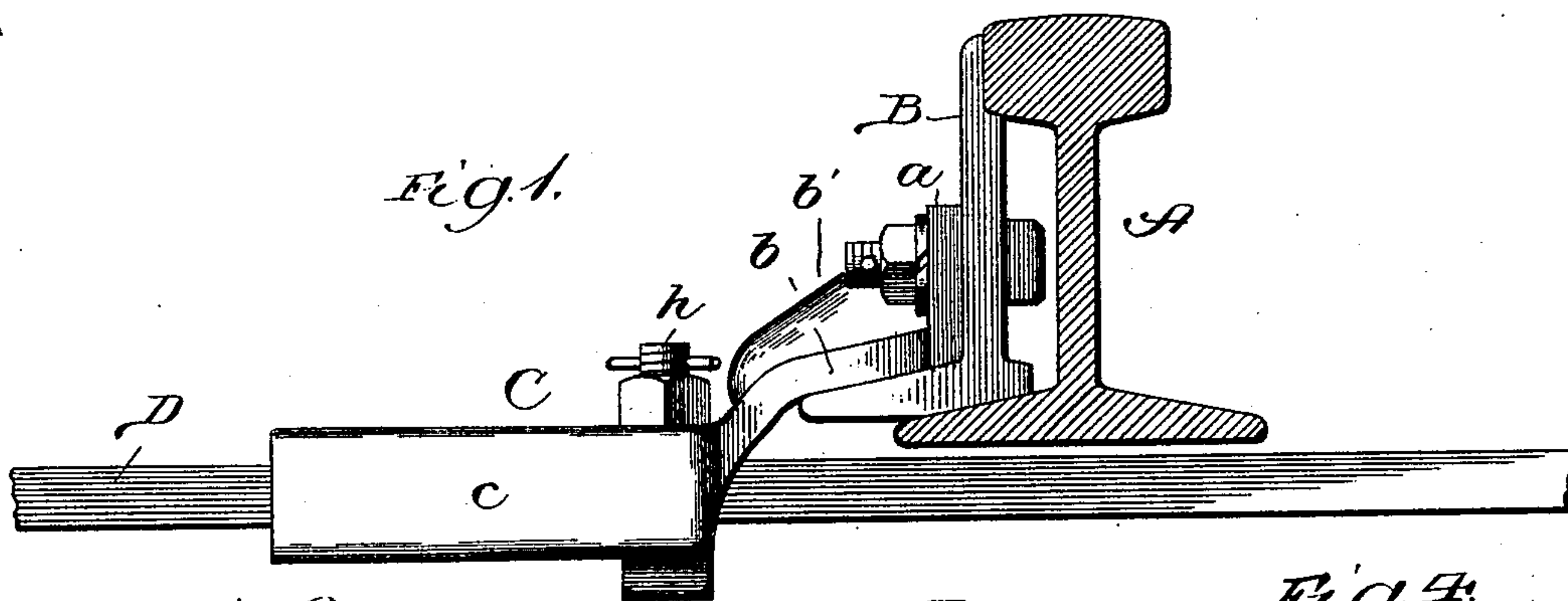
No. 689,374.

Patented Dec. 17, 1901.

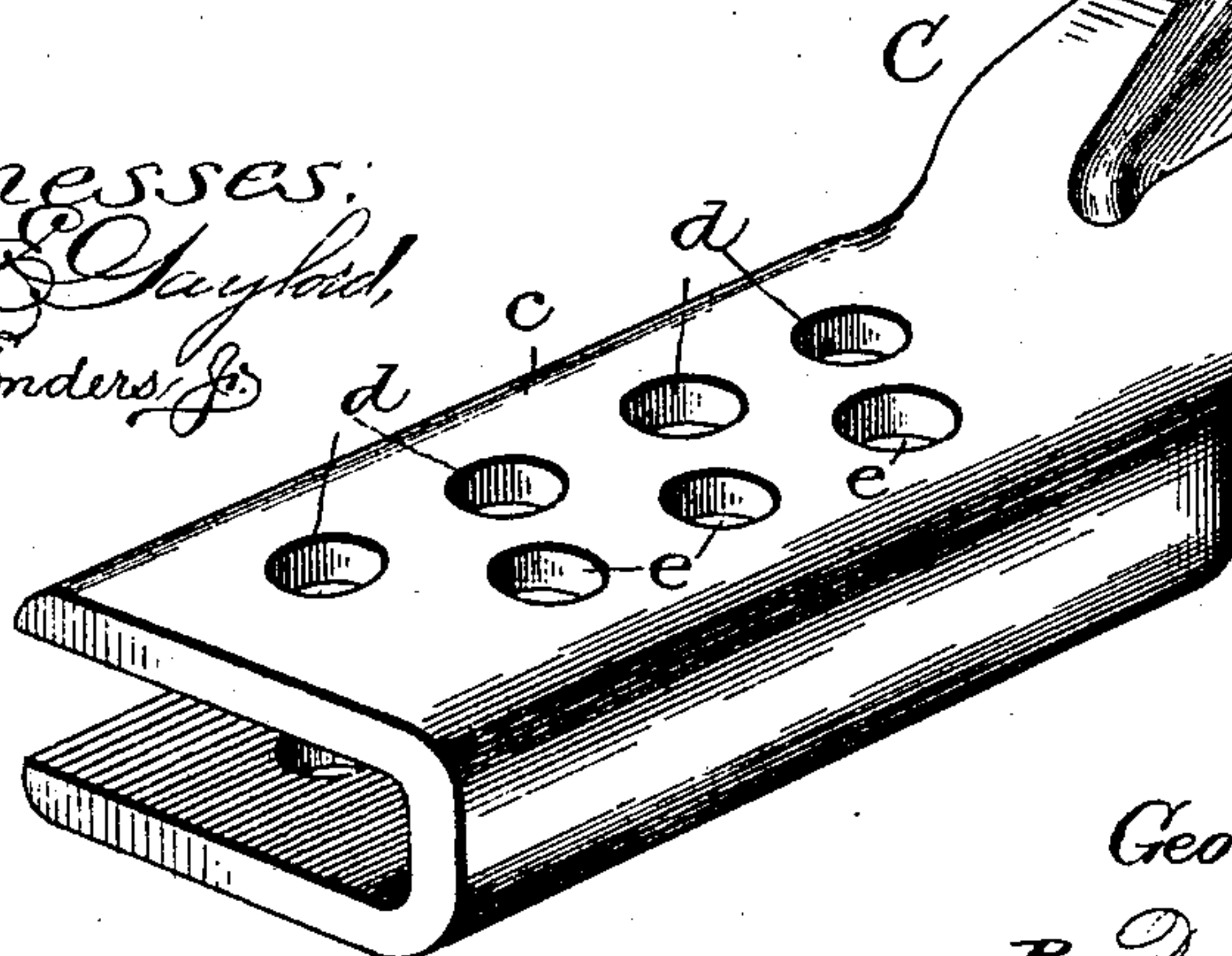
G. L. WARREN.
RAILWAY SWITCH.

(Application filed May 20, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE L. WARREN, OF ST. PAUL, MINNESOTA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 689,374, dated December 17, 1901.

Application filed May 20, 1901. Serial No. 61,073. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. WARREN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification.

My invention relates particularly to an improvement in the "adjustment" or adjustable connecting means between switch-rails for the purpose of varying the gage of these rails to compensate for wear of the parts of the switch and the switch-operating mechanism, thereby to insure the complete throw of the switch against an adjacent main rail notwithstanding such wear causing lost motion or notwithstanding disorganization of the parts from other causes.

The means forming my invention for accomplishing the adjusting purpose referred to involve a clip for attachment at its head to a switch-rail and having its tailpiece in the form of a socket or jaw to receive an end or section of a switch-bar, the socket or jaw being provided in each of two of its opposite sides with longitudinal series of bolt-holes, the holes of the corresponding series in the opposite socket sides coinciding with each other and those of the plurality of series in each side being arranged in staggered relation to each other to attain desired refinement of adjustment without sacrificing strength in the connecting medium, and the switch-bar being also provided with series of staggered bolt-holes corresponding with those in the socket, but differently spaced apart in each series from the spacing apart of the holes in each series thereof in the socket.

Referring to the accompanying drawings, Figure 1 is a cross-sectional view of one main rail and the adjacent switch-rail of a split switch provided with my improved adjusting means connected with the switch-rail and showing the switch-bar broken away toward its opposite ends; Fig. 2, a broken plan view showing the clip with the switch-bar adjusted in its socket or jaw, the bolt-holes in the rod being shown dotted; Fig. 3, a similar view of the switch-bar, showing by dotted representation the relative position of the staggered holes in the clip-socket to those in the rod;

Fig. 4, an end view of the clip, and Fig. 5 a perspective view of the same.

A denotes one of the main rails of a railroad-track at a switch, and B is the adjacent point-rail.

C is a clip for adjustably connecting with the switch-rail the switch-bar D, which in this connection is shown as the head-bar passing under the rails A and B to its connection with a suitable switch-stand. (Not shown.) This clip comprises a head *a*, of any desired shape, but shown as rectangular, with a bolt-hole *a'* near each end, through which to bolt it to the web of the point-rail, a neck-section *b*, preferably reinforced by a web *b'* and conforming in inclination to that of the top of the flange of the rail B, across which it extends, and a tailpiece *c* in the form of a socket or jaw to receive the switch-bar and provided in its upper side with two parallel series of bolt-holes *d e* and with two similar bolt-hole series *d' e'* in its base, as indicated in Figs. 3 and 4. The members of each series of the holes in the upper side of the socket coincide, respectively, with those of the series below it in the base of the socket, and the members of the two series in each of the two opposite sides of the socket or jaw are staggered, being preferably so relatively arranged that the plane occupied by each hole in one series will overlap that occupied by the hole adjacent to it in the other series, as represented.

The switch-bar D in the section thereof that passes through the clip-socket is shown to be provided with two parallel series of bolt-holes *f g*, the members thereof being arranged in the same general staggered and overlapping relation to each other as are the members of the series of holes in the jaw; but the holes in each series in the socket or jaw are spaced farther apart than are those in each series in the bar. Thus to whatever uniform or varying distances the bar-holes in each series thereof may be spaced apart the holes in each series thereof in the socket *c* are as much farther apart as the extent of adjustment desired for each of successive adjusting operations, so that when the switch-bar is in the clip-socket, with the foremost of the series of holes *d d'* in the latter coincident with the foremost hole of the series *f* in the former,

all the rest of the socket-holes in the series $d d'$ and $e e'$ thereof will be respectively out of coincidence with the rest of the switch-bar holes, as indicated in Fig. 2, the lack of coincidence increasing toward the inner end of each series.

As will readily be understood, the position of the bolt-holes in the clip-socket and of those in the bar may be relatively reversed to provide the holes in the bar a greater distance or greater distances apart than those in the clip-socket series of holes without effecting any practical change in the adjustment, which is accomplished as follows: In the original setting of the device, with the clip C bolted in position to the web of the switch-rail B, the outermost end socket-holes in the series $d d'$ coincide with the outermost bar-hole in its series f , and through these coinciding holes the switch-bar is pivotally connected with the clip C, and thus with the point-rail, by a bolt h . With the described staggered arrangement of the bolt-holes they are brought in their zigzag succession much closer together, while leaving ample metal between them to avoid weakening the parts, than they could be if with a given length of clip all the holes in each two series thereof were arranged that close together in a straight line, wherein the holes would intersect each other. Thus upon removing the bolt h and moving the point-rail outward till the foremost hole of the bar series g of holes coincides with the foremost holes of the socket series $e e'$ the switch-rail B will be moved accordingly nearer to the main rail A, in which position it will be fastened by passing the bolt h through the holes thus brought into coincidence. In this way the adjustments may be successively effected as desired to the extent of the difference between the distance or distances apart of the socket-holes and the distance or distances apart of the bar-holes (thus to any desired number of inches or fractions of an inch, depending on the spacing apart of the holes in the series) by moving the socket or jaw to alternate the coincidence of the holes of the latter in zigzag succession with those in the clip-socket. Of course, as will be understood, each adjustment may be greater than that effected by bringing a hole in the switch-bar successively into coincidence with adjacent holes in either pair of the socket series $d d'$ or $e e'$ or by skipping holes in any series.

While I have illustrated and described my

improved gage-adjusting means as being provided on only one switch-rail, the same may obviously be duplicated on the companion switch-rail to enable each point-rail to be independently adjusted with relation to the adjacent main rail. Such duplication will merely involve the provision of a second clip C, fastened to the other switch-rail, and the provision in the switch-bar, in that portion thereof which passes through the socket of such clip, of two series of bolt-holes, like the series f and g hereinbefore described. Moreover, the shape of the tailpiece-socket c , as well as its construction, may be changed without departure from my invention.

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

1. In combination, a switch-bar provided with series of holes arranged in staggered relation from one series to the other, a clip adapted to be secured to a switch-rail and having a socket or jaw provided with series of holes arranged in staggered relation from one series to the other, in each of two opposite sides, said clip-holes being at a distance apart different from that of the switch-bar serial holes, and a bolt passing through holes, brought into coincidence, in the clip-socket and switch-bar to lock said parts in any adjusted position.

2. In an adjustment for railway-switch rails, a clip adapted to be connected with a switch-rail and having a switch-bar-receiving socket or jaw provided with series of holes, arranged in staggered relation from one series to the other, in each of two opposite sides, to receive a bolt passed through coincident holes in said opposite sides and through a switch-bar in said socket for locking said clip and switch-bar in any adjusted position.

3. In an adjustment for railway-switch rails, the combination of a clip adapted to be connected with a switch-rail and having a switch-bar-receiving socket provided with bolt-holes, a switch-bar provided with series of holes arranged in staggered relation from one series to the other, and a bolt passing through holes, brought into coincidence, in the clip-socket and switch-bar to lock said parts in any adjusted position.

GEORGE L. WARREN.

In presence of—
L. HEISLAR,
D. W. LEE.