

(No Model.)

B. GALLAGHER.
RAIL FASTENING DEVICE.

No. 311,162.

Patented Jan. 20, 1885.

Fig. 3.

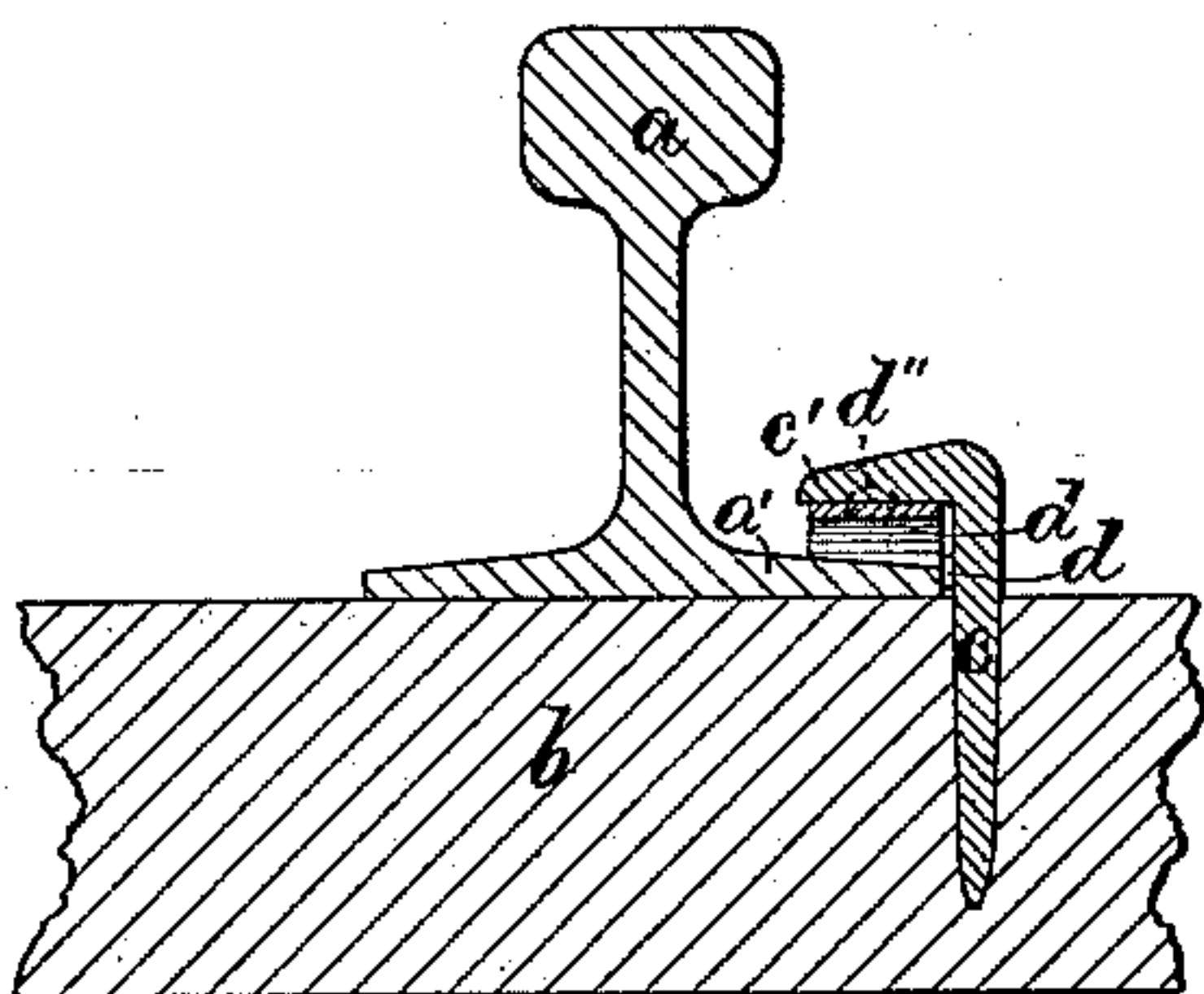


Fig. 1.

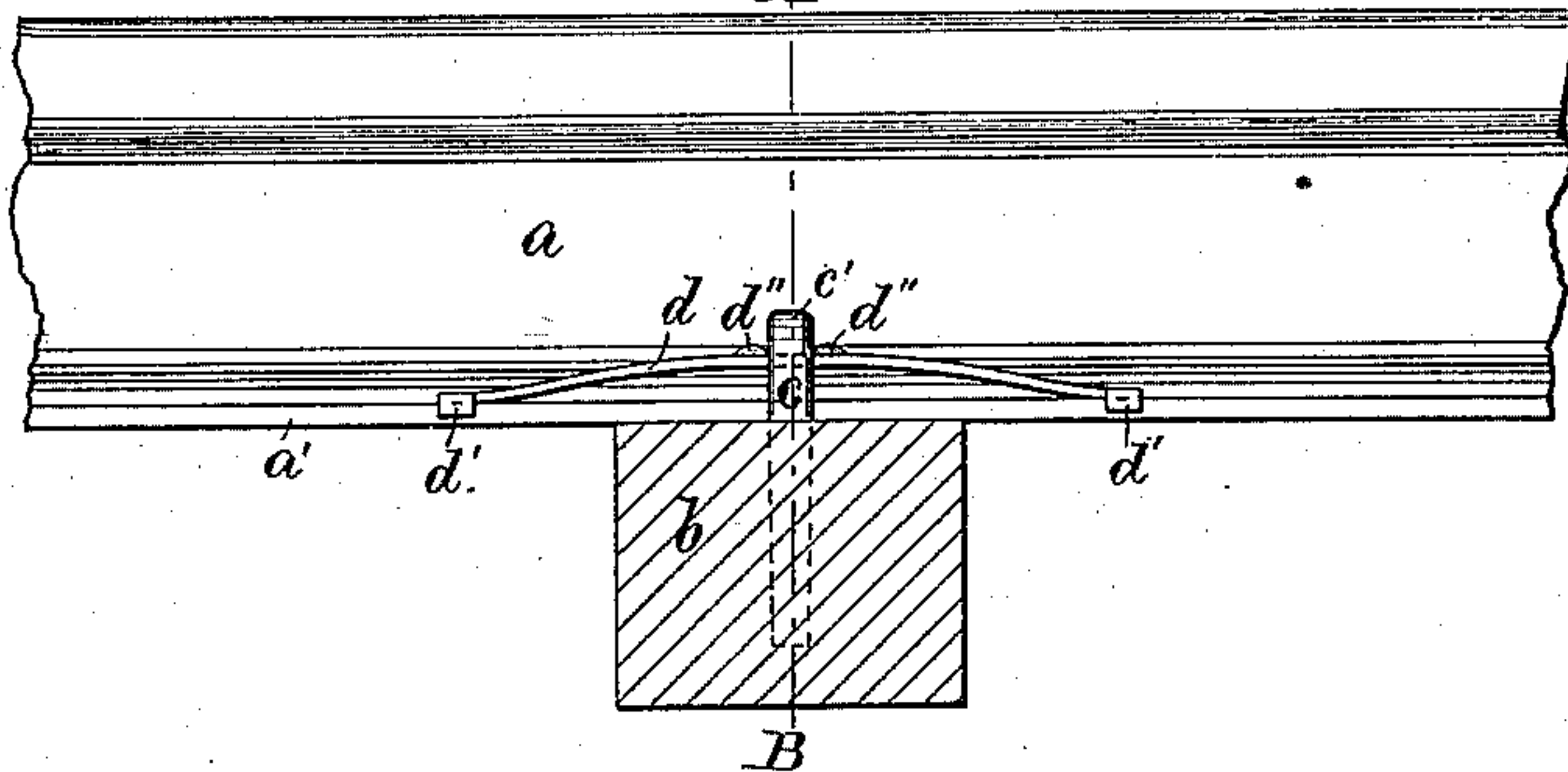


Fig. 5.

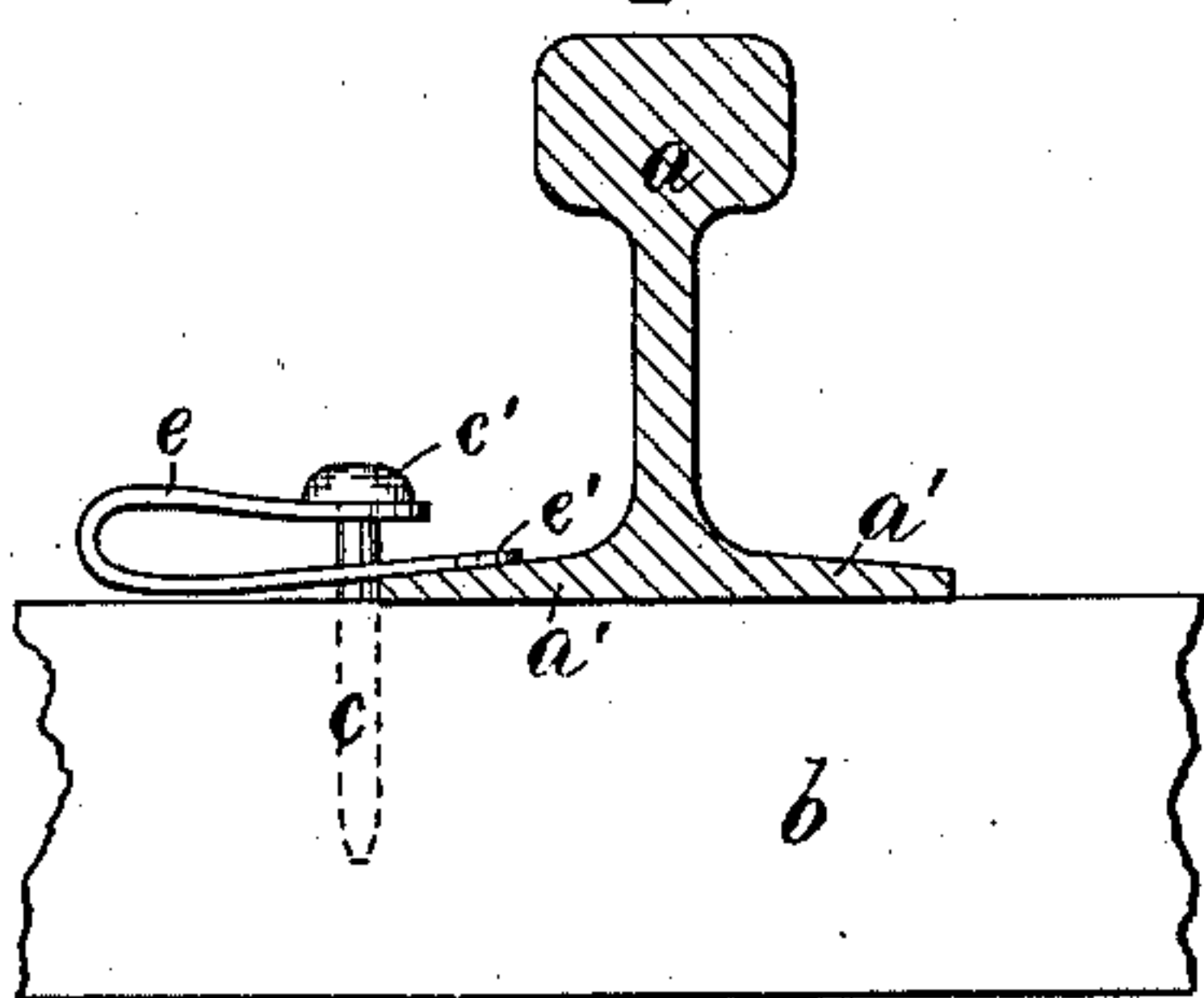


Fig. 2.

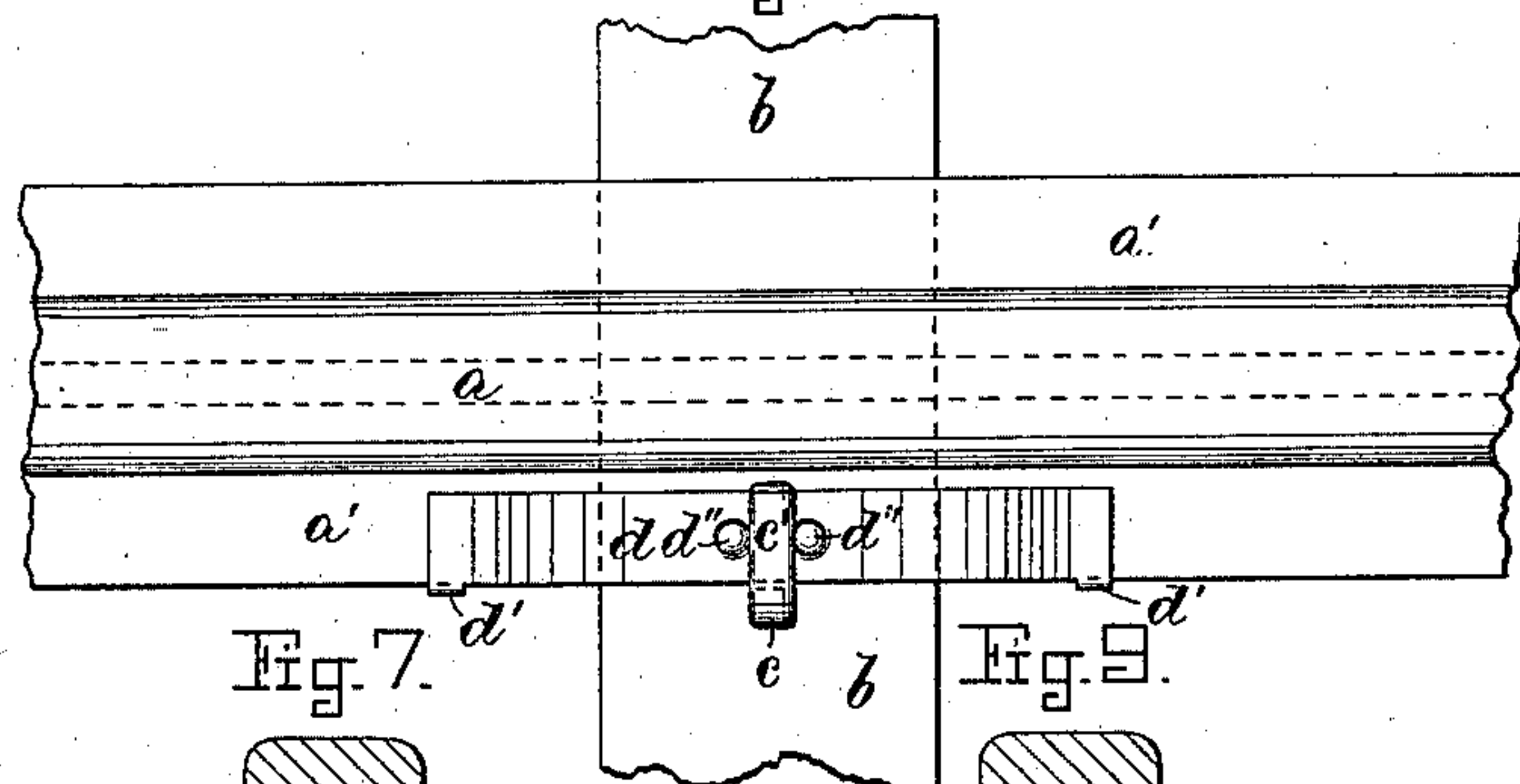


Fig. 4.

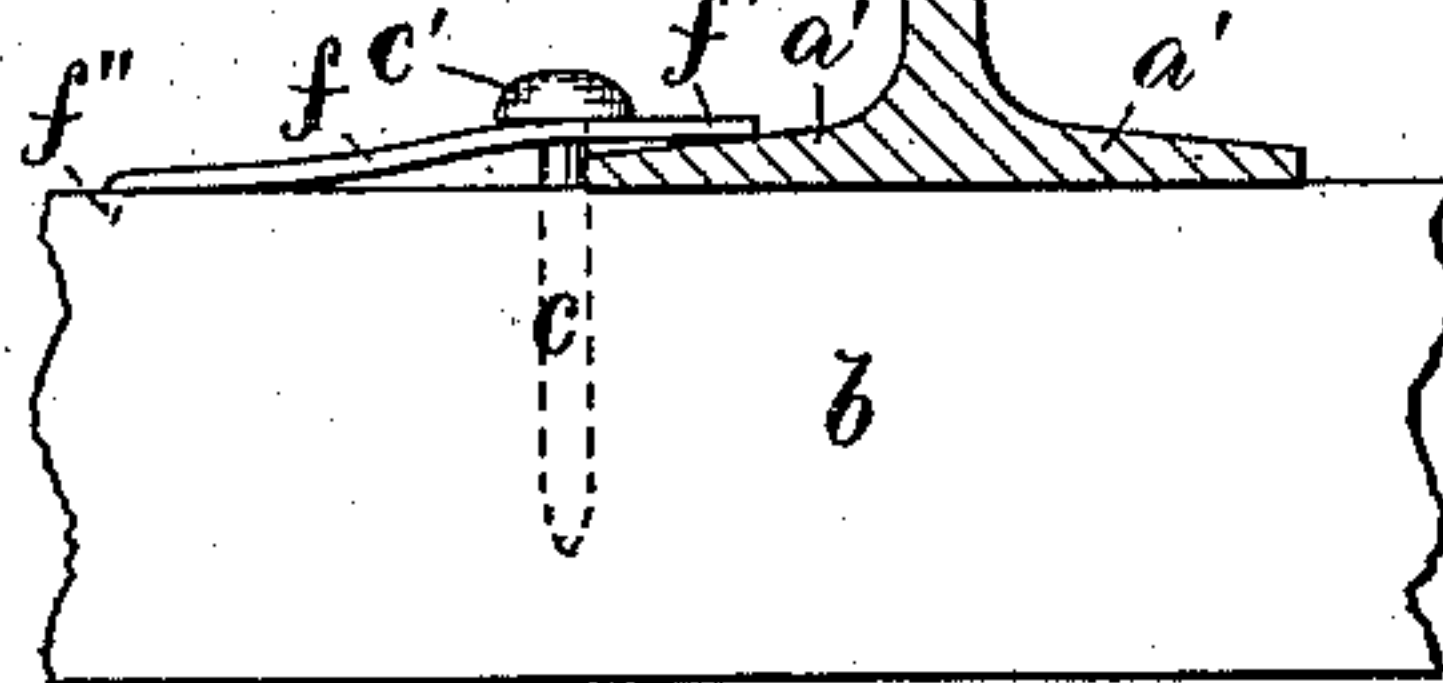
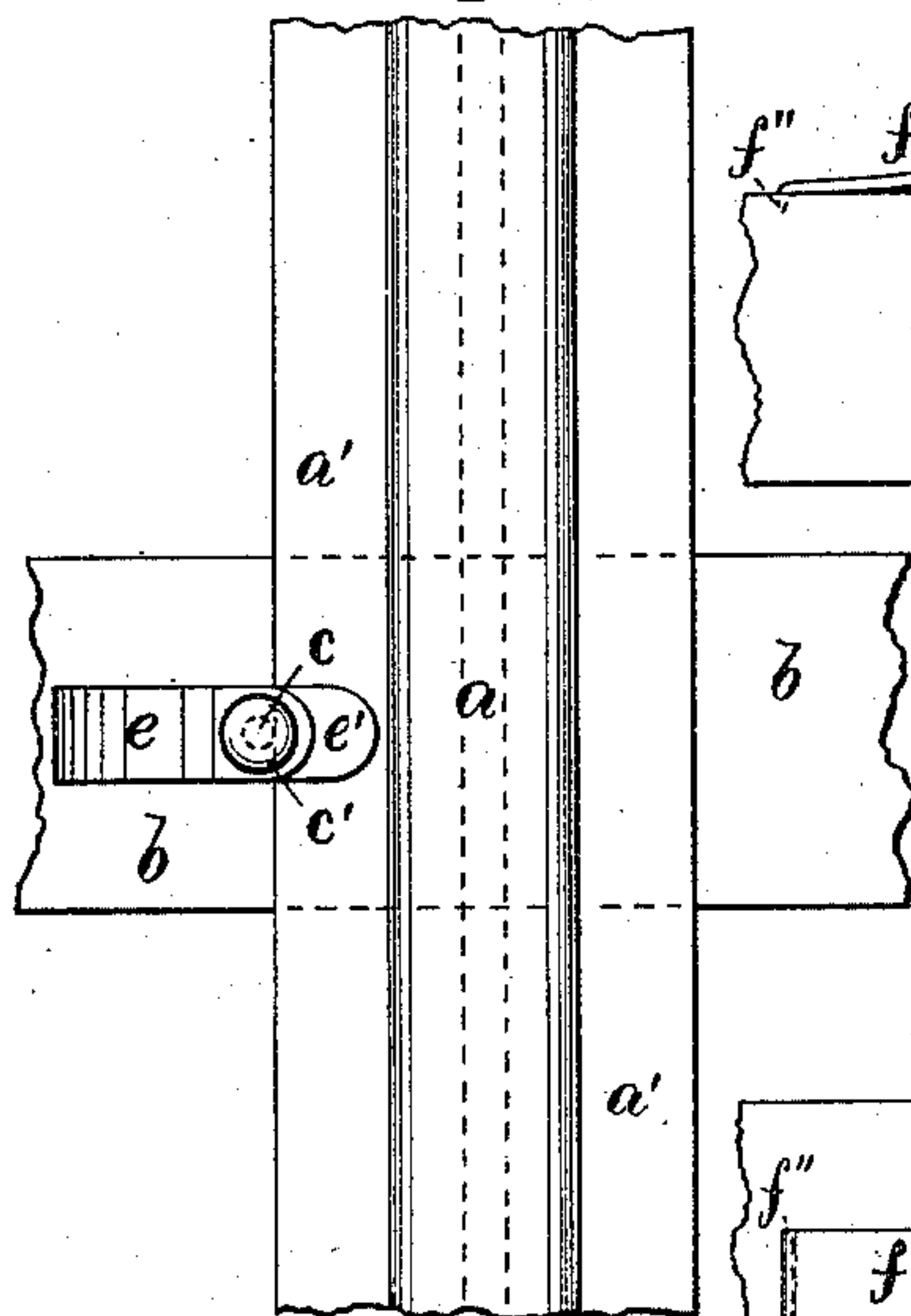


Fig. 7.

Fig. 9.

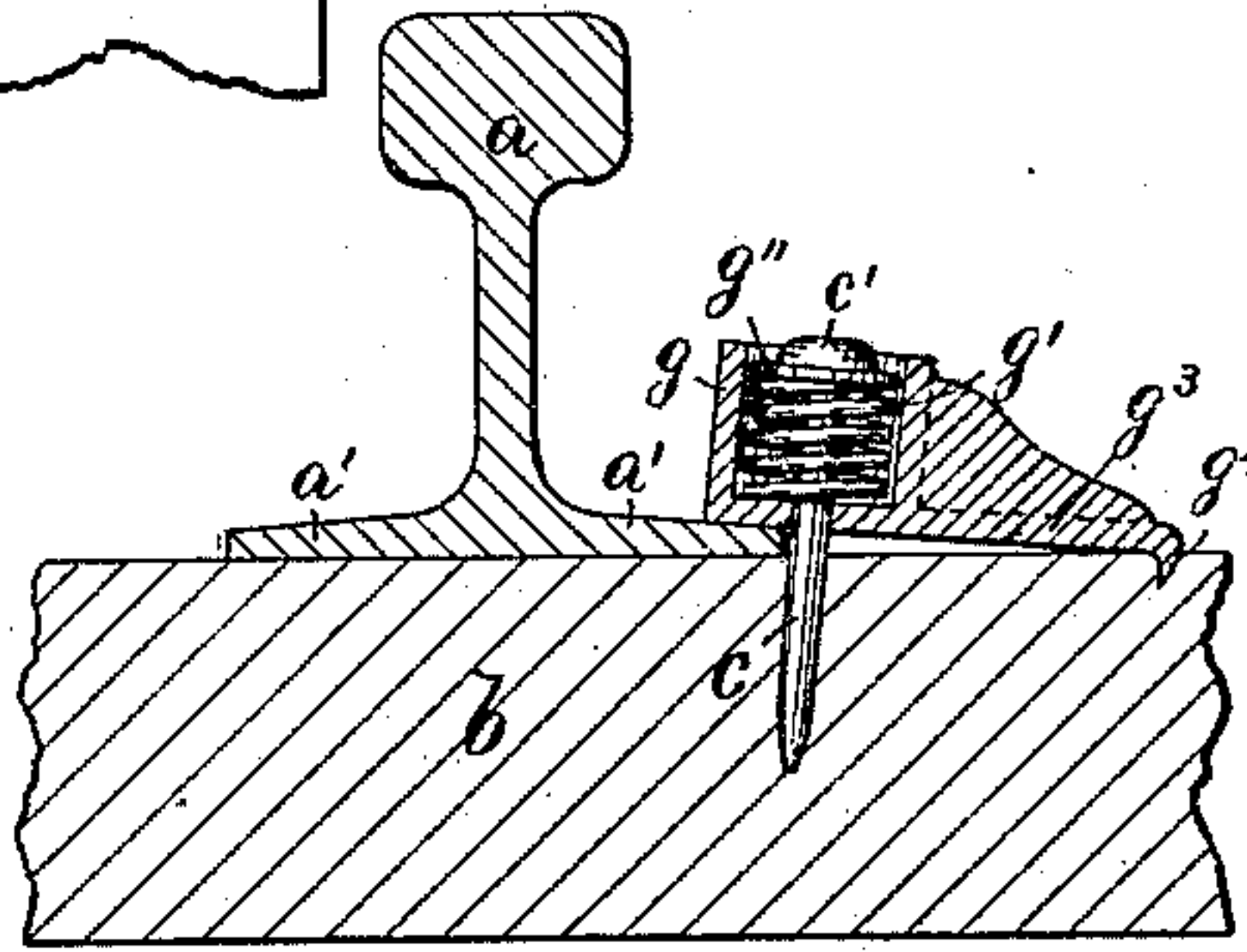


Fig. 6.

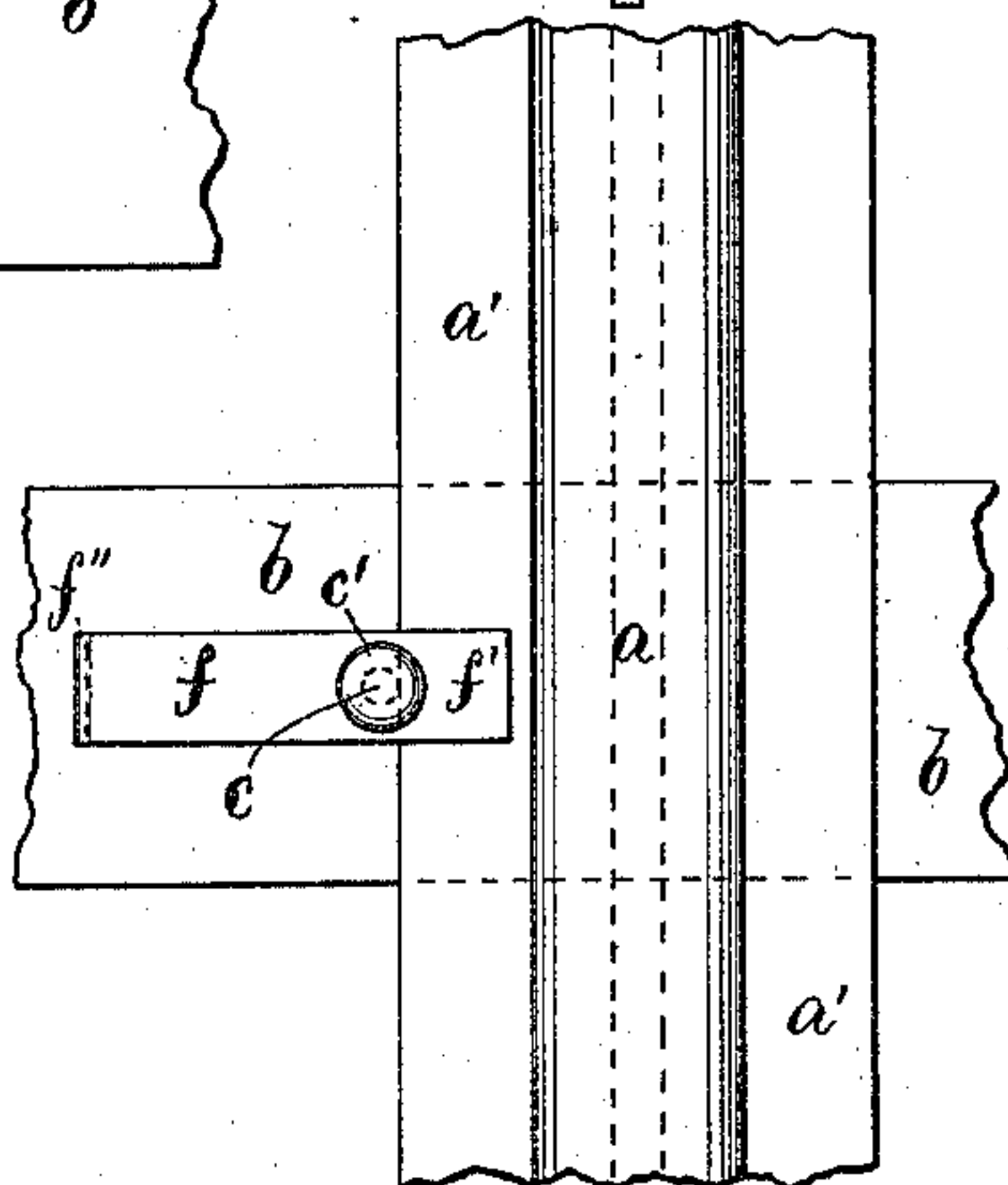
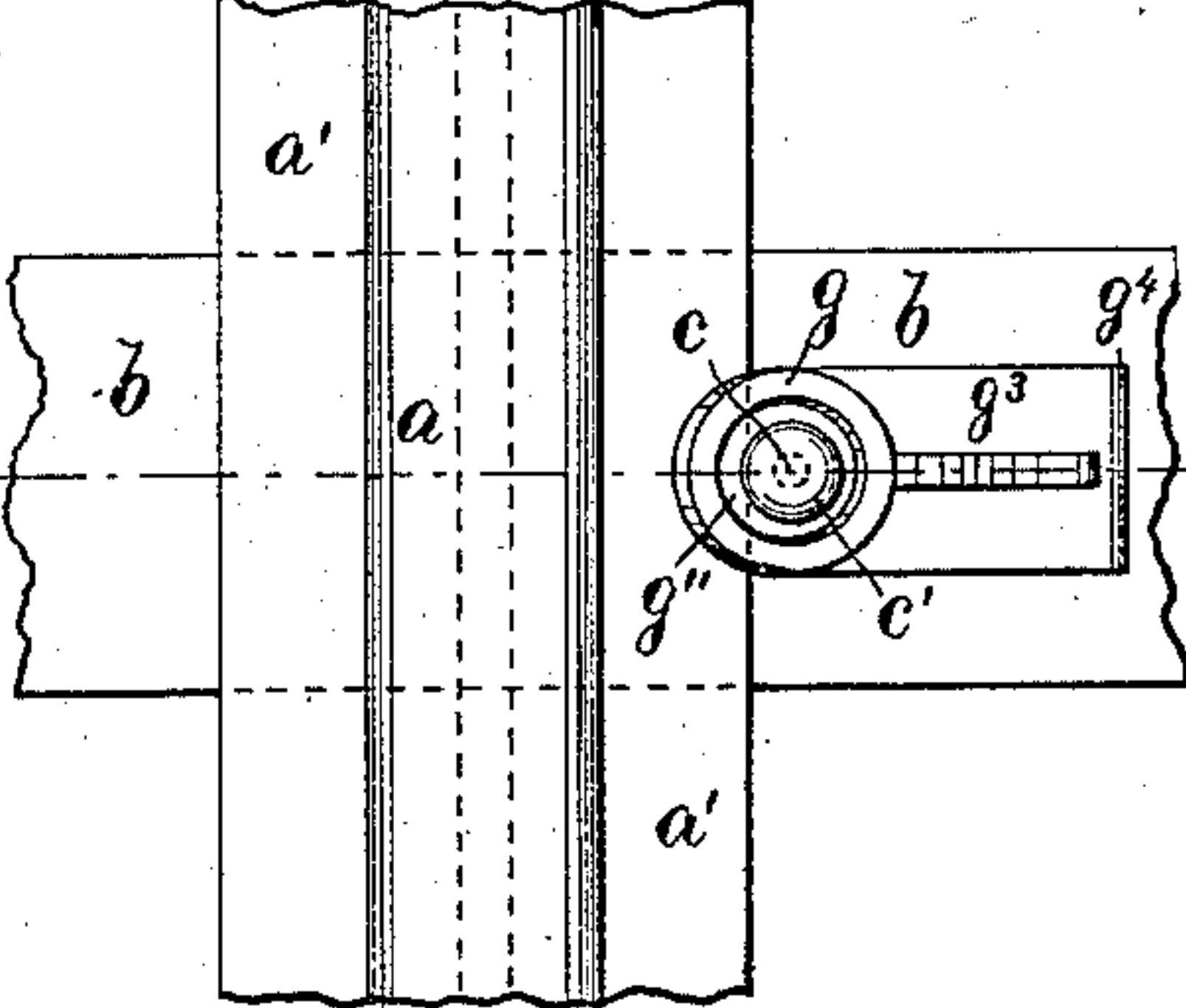


Fig. 8.



Witnesses
Henry Chadbourne.
Geo. E. Ostburg.

Inventor
Bernard Gallagher
by Alban Judson atty

UNITED STATES PATENT OFFICE.

BERNARD GALLAGHER, OF LYNN, MASSACHUSETTS.

RAIL-FASTENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 311,162, dated January 20, 1885.

Application filed February 9, 1884. Renewed December 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, BERNARD GALLAGHER, a citizen of Canada, now residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Rail-Fastening Devices; and I do hereby declare that the same are fully described in the following specification, and illustrated in the accompanying drawings.

10 This invention relates to improvements in rail-fastening devices for securing rails to the ties or sleepers on railroads; and it has for its object to prevent the spikes holding the rails to the sleepers from working loose by the jarring motions of trains passing over the rails, and also to prevent the chafing and softening of the sleeper beneath the rail by such jarring motions, which is the case in the usual method of fastening rails to sleepers and for this purpose I introduce an elastic medium, in the form of a metal or other yielding spring, between the upper side of the rail-flange and the under side of the head of the spike that is driven into the tie or sleeper, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation of the improved rail-fastening device. Fig. 2 represents a plan view of it, and Fig. 3 represents a cross-section on the line A B. (Shown in Fig. 1.) Fig. 4 represents in plan view a modification of the invention, and Fig. 5 represents an end view of Fig. 4. Figs. 6 and 7 represent in plan and end views another modification, and Figs. 8 and 9 represent in plan and section still another modification of the improved rail-fastening device.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a represents an ordinary rail, on which *a'* is the lower flange, resting on the sleeper *b*, as usual. *c* is the spike to be driven into the sleeper *b*, and having a head, *c'*, in its upper end for securing the rail-flange to the sleeper. The elastic or yielding medium interposed between the top of flange *a'* and head of spike *c* is shown in Figs. 1, 2, and 3 as being composed of a half-elliptic metal spring, *d*, the ends of which rest on top of flange *a'*, and said

spring is preferably provided in its ends with downwardly-bent lips *d' d'*, adapted to lie over the outer edge of flange *a'*, so as to prevent said spring *d* from working out of position by the jarring motions of passing trains.

Midway on spring *d*, I prefer to make a pair of blisters or upper projections, *d'' d''*, between which the head *c'* of spike *c* is driven, as shown in Figs. 1 and 2, and by this means the spring *d* is prevented from working loose in the linear direction of the rail *a*, and to be held in its relative position to that of the spike *c*, as shown.

The modification shown in Figs. 4 and 5 consists of an elliptic or U spring, *e*, having its lower end, *e'*, resting on rail-flange *a'*, and the spike *c* passed through perforations in the upper and lower ends of said spring *e*, and afterward driven into the sleeper *b*, with the head *c'* of said spike resting on the upper end of said elastic spring *e*, as shown in said Figs. 4 and 5.

The modification shown in Figs. 6 and 7 consists of a flat spring, *f*, laid parallel with the sleeper *b*, its inner end, *f'*, resting on rail-flange *a'*, its outer end resting on the said sleeper, and the spike *c* driven through a perforation in said spring *f*, between its inner and outer ends, the head *c'* of the spike *c* resting on top of said spring *f*, as shown. To prevent the spring *f* from getting out of position, I prefer to provide its outer end with a downwardly-projecting lip, *f''*, adapted to be driven into the top of the sleeper *b*, as shown in said Figs. 6 and 7.

The modification shown in Figs. 8 and 9 is carried out as follows: It is composed of a metal box, *g*, open at top and closed at the bottom, saving a central perforation, through which the spike *c* is driven into the sleeper. Within the box *g* is laid a coiled spring, *g'*, (or rubber or other yielding medium,) and on top of spring *g'* is a washer, *g''*, against the upper side of which the head *c'* of the spike *c* is driven, as shown in Fig. 9. The inner edge of the bottom of box *g* is made to rest on top of rail-flange *a'*, and held in elastic contact with the same by means of the spike *c c'*, its elastic spring *g'*, and washer *g''*, as shown in Fig. 9. The outside of box *g* has an extended arm or plate, *g³*, terminating as a downwardly-pro-

jecting lip or tooth, g^1 , that is driven into the top of sleeper b , so as to retain the box g in its proper relative position to the rail and sleeper after the spike c has been driven, for the purpose set forth.

Other equivalent devices might be shown, and I wish to state that I do not confine myself to any particular kind or construction of springs, as the gist of my invention is to introduce an elastic medium between the upper side of the flange-rail and the under side of the spike-head, for the purpose as set forth.

What I wish to secure by Letters Patent and claim, is—

The herein-described device for securing rails to their sleepers, consisting in interposing between the rail-flange a' and the head c' of the spike c an elastic spring or other elastic medium, for the purpose as herein set forth.

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

BERNARD GALLAGHER.

Witnesses:

ALBAN ANDRÉN,
HENRY CHADBURN.