

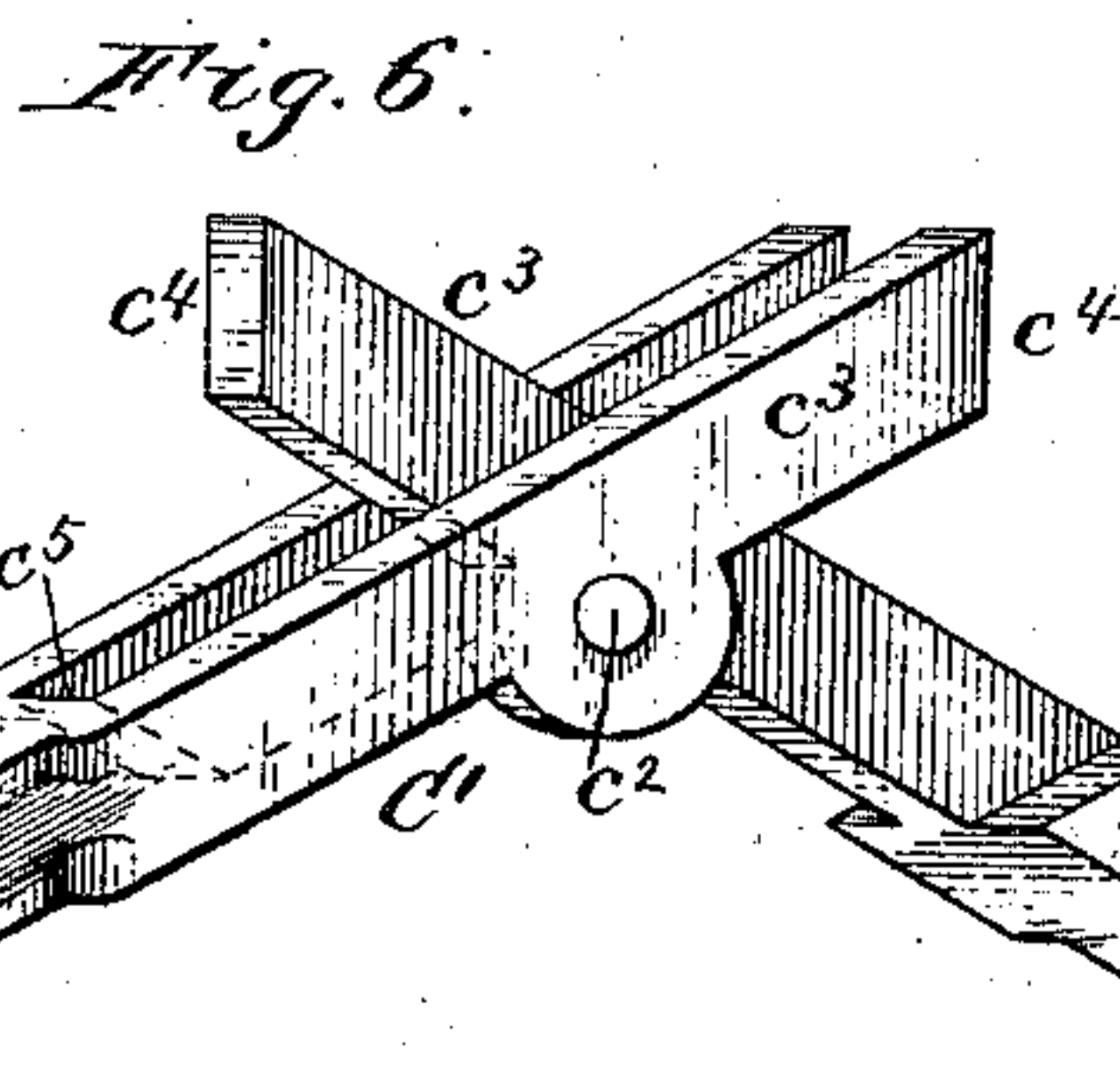
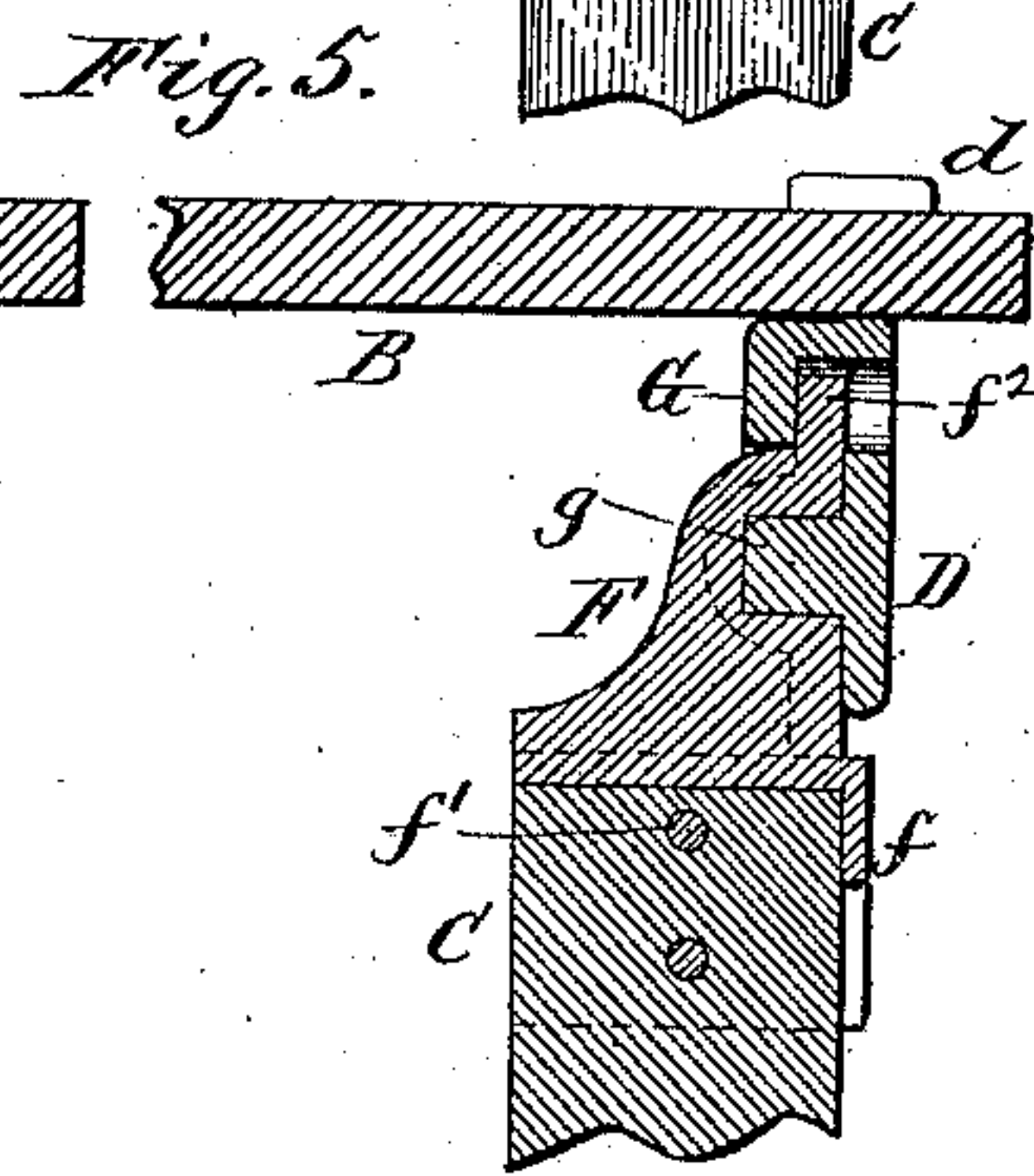
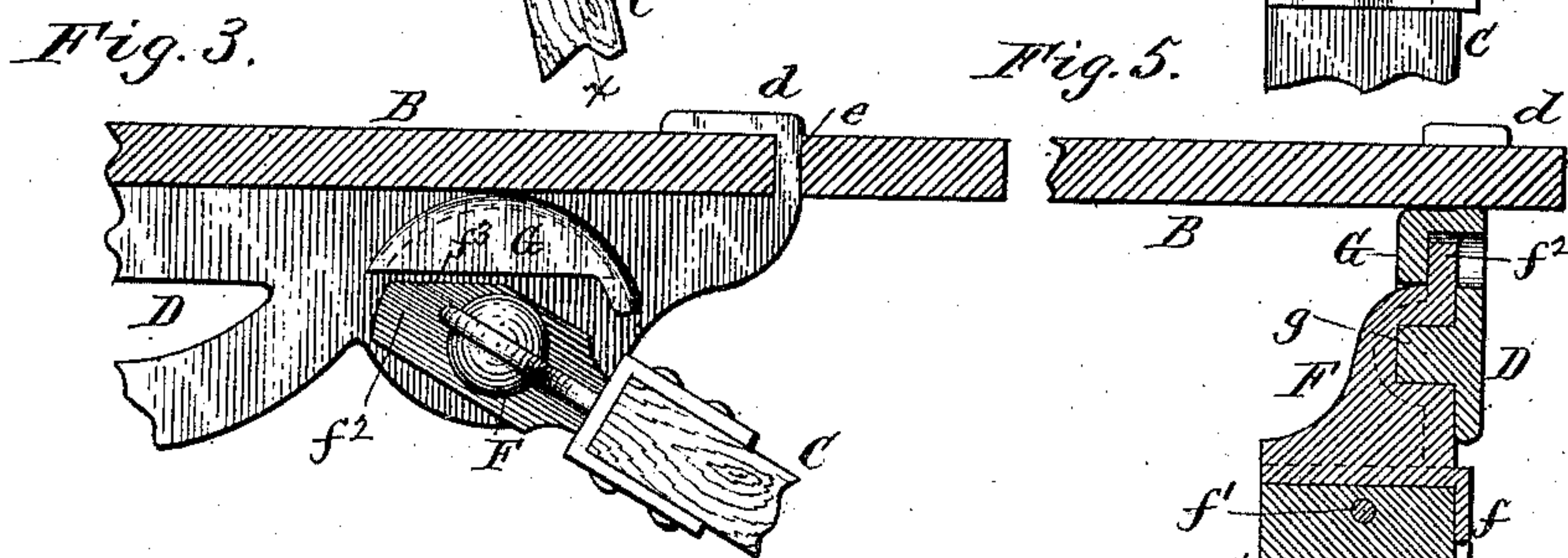
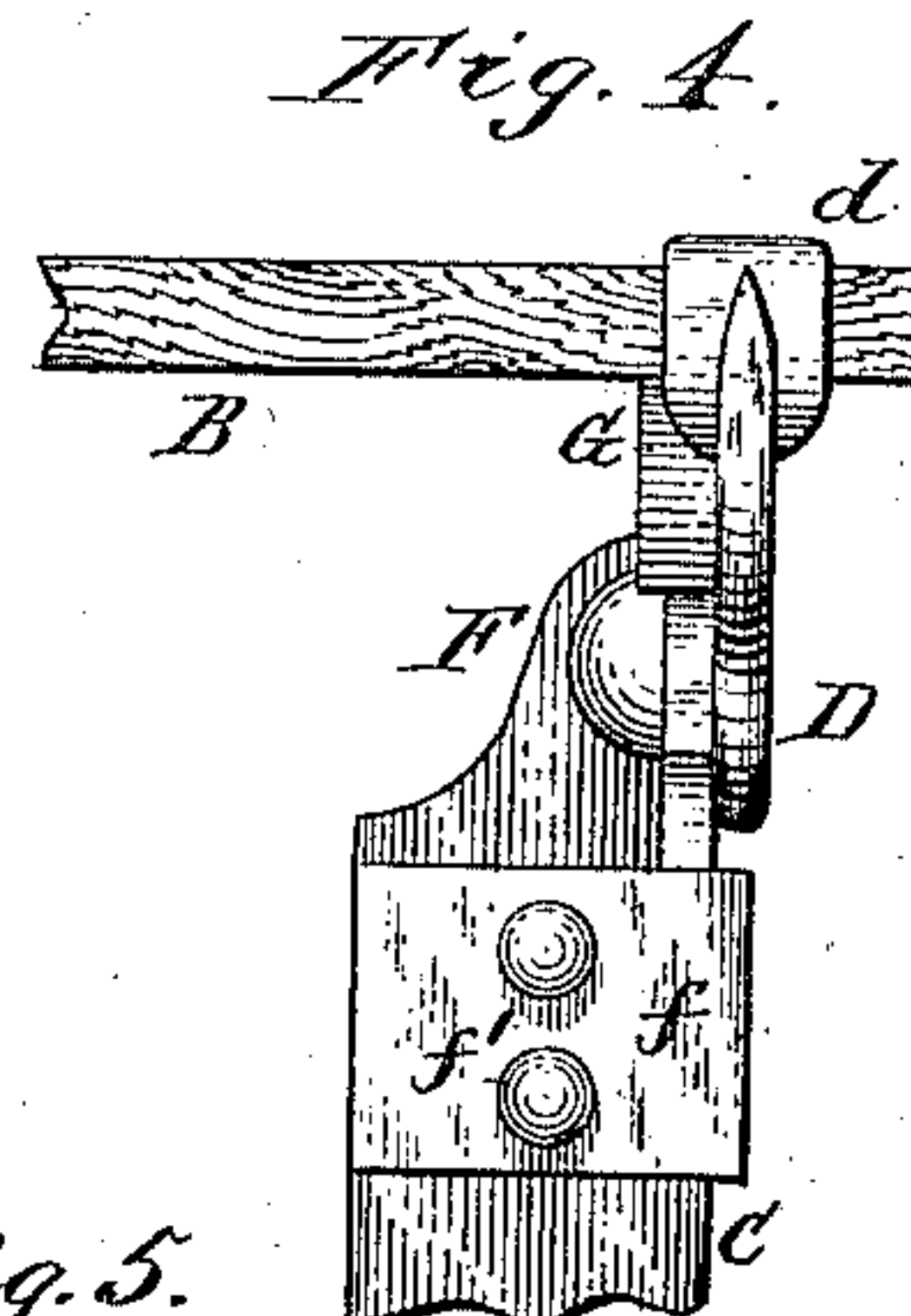
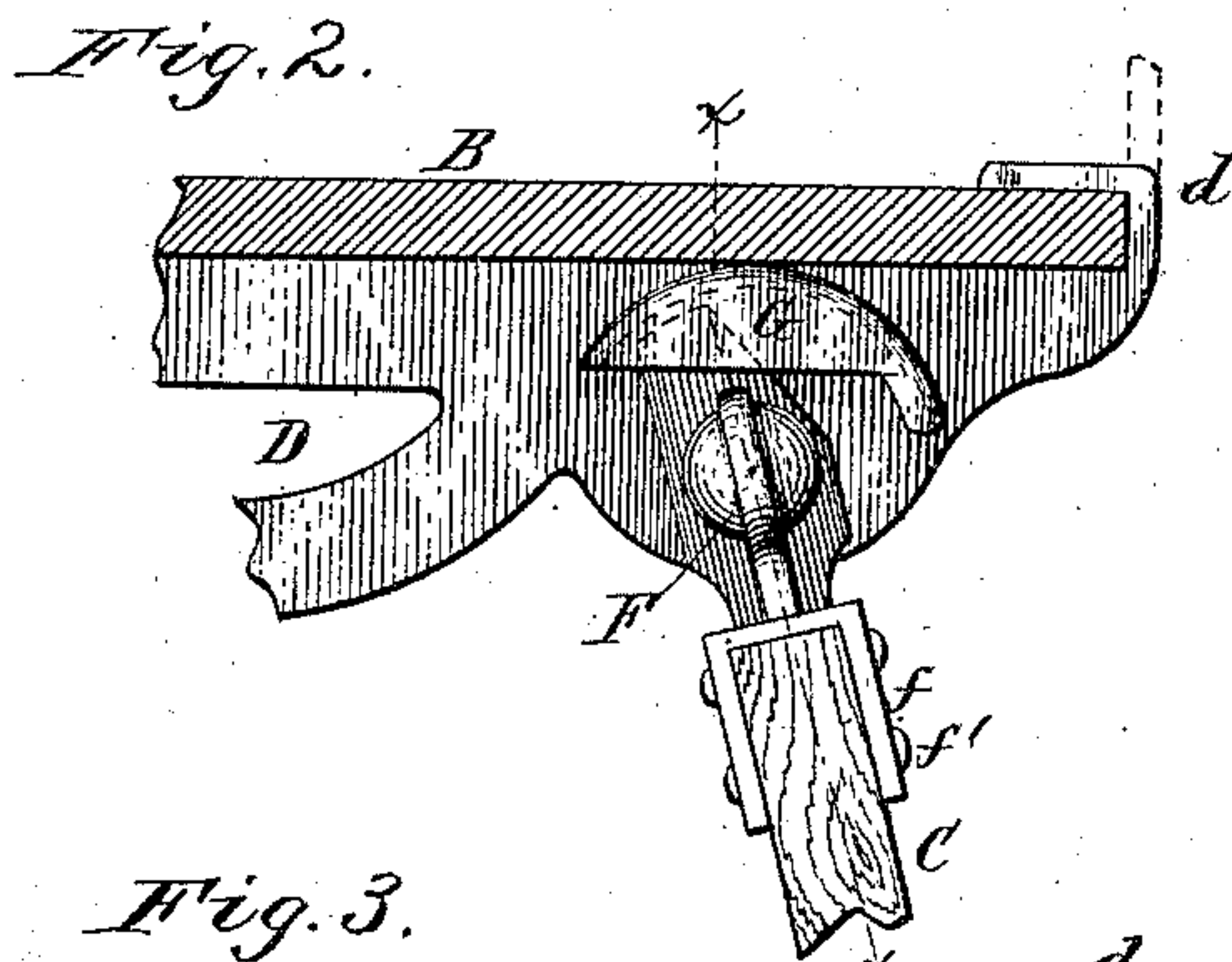
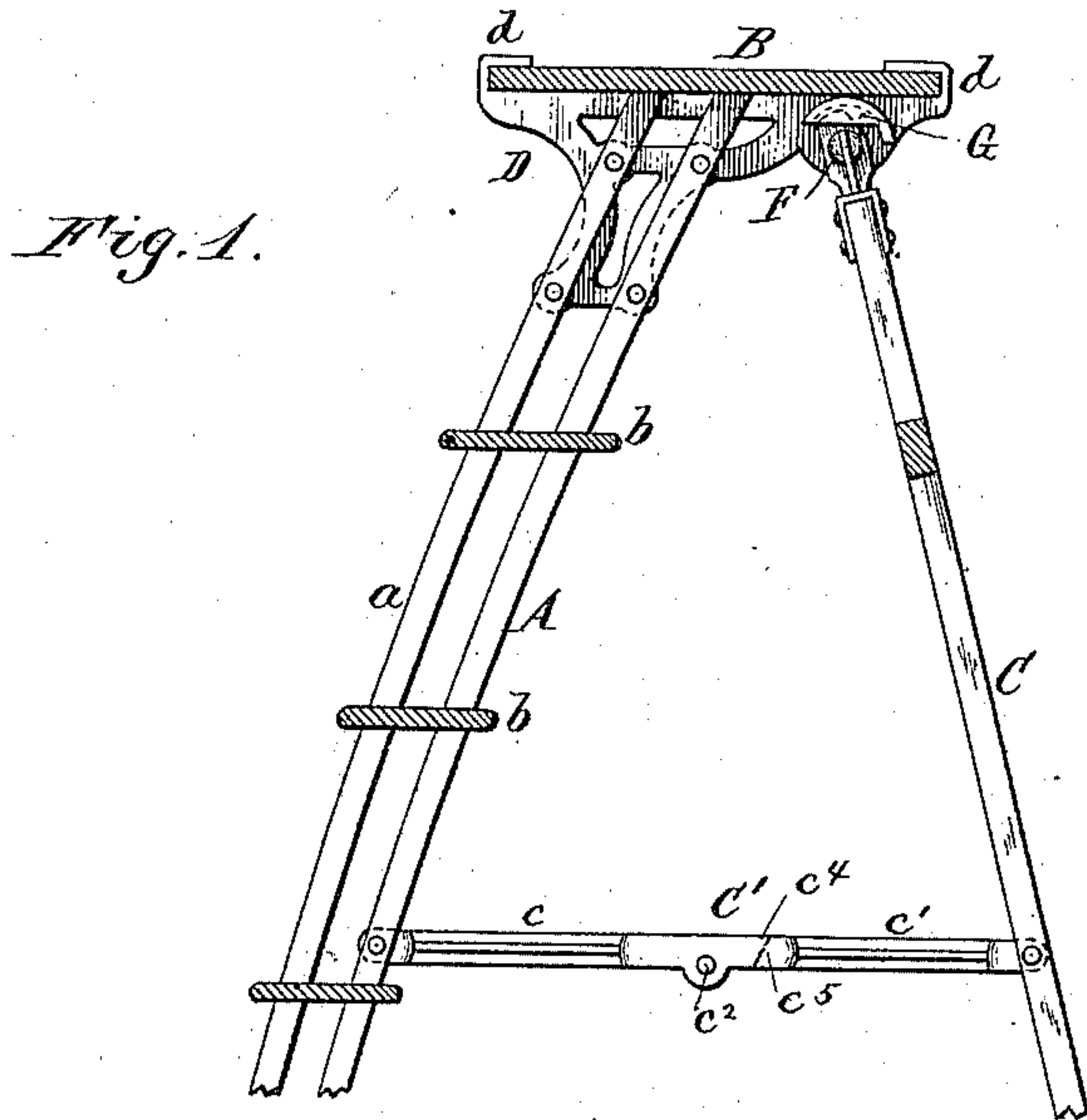
(No Model.)

H. P. SPENCER.

STEP LADDER.

No. 313,690.

Patented Mar. 10, 1885.



Witnesses:  
Theo. L. Popp.  
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By Wilhelm Bonner.

Attorneys.



# UNITED STATES PATENT OFFICE.

HENRY P. SPENCER, OF FORESTVILLE, NEW YORK.

## STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 313,690, dated March 10, 1885.

Application filed October 27, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY P. SPENCER, of Forestville, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Step-Ladders, of which the following is a specification.

This invention relates to an improvement in that class of step-ladders in which the upper ends of the ladder and platform are connected by metal brackets; and it has for its object to attach the platform to the metal brackets in a simple, cheap, and durable manner, and also to provide a simple and secure attachment, whereby the standard is pivoted to the bracket.

My invention consists of the improvements which will be hereinafter fully set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical section of my improved step-ladder. Fig. 2 is a fragmentary vertical section of the upper portion of the ladder on an enlarged scale, with the standard pivoted to the bracket. Fig. 3 represents a similar view with the standard in the position in which it may be disengaged from the bracket. Fig. 4 is an end view at right angles to Fig. 2. Fig. 5 is a vertical section in line  $x x$ , Fig. 2. Fig. 6 is a perspective view of the central portion of the brace on an enlarged scale.

Like letters of reference refer to like parts in the several figures.

A represents the main body of the step-ladder, composed of curved side pieces,  $a$ , and steps  $b$ , constructed in any suitable and well-known manner.

B represents the top step or platform; C, the hinged standard, and C' the brace whereby the body A is connected to the standard C. The brace C' is composed of two sections,  $c c'$ , which are hinged or jointed together at  $c^2$  and provided with overlapping portions  $c^3$ . The ends of the overlapping portions  $c^3$  are mitered or beveled, as shown at  $c^4$ , and are adapted to rest against beveled shoulders  $c^5$  when the sections of the brace are extended, as shown in Fig. 1. The inner end of the section  $c$  is bifurcated and straddles the inner end of the section  $c'$ , and the beveled ends  $c^4$  of the section  $c$  rest against the shoulders  $c^5$ , formed on the section  $c'$ , and the beveled end of the section  $c'$  against a similar shoulder formed on the section  $c$  between the bifurcated portion  $c^3$ .

D represents the metallic brackets, which are secured to the side pieces,  $a$ , of the ladder and support the top step or platform, B. The brackets D are provided at their upper ends with ears or lugs  $d$ , between which the platform B is arranged, and which are adapted to be bent over the upper edge of the platform, as shown in Figs. 1 and 2.

The brackets D are preferably constructed of malleable iron or other suitable metal, so that the lugs or ears  $d$  can be bent over the upper edge of the platform by a "cold shut."

When a wide platform is required, the platform may be formed with openings  $e$ , and the lugs or ears  $d$  inserted through the openings and bent down on the upper side of the platform, as shown in Fig. 3; or, if preferred, the lug may be made shorter and riveted over the top of the platform. This construction forms a very cheap and reliable means of securing the platform to the brackets, as it dispenses with the use of nails and similar fastening devices, whereby much time and labor is saved.

F represents a hollow knuckle or socket, which is secured to the upper end of the standard C by means of angle plates or flanges  $f$  and rivets  $f'$ . The socket F is adapted to engage over a pin or stud,  $g$ , formed on the inner side of the bracket D, whereby the standard is pivoted to the bracket.

G represents a hood or cap formed on the inner side of the bracket D above the pin  $g$ , and which engages over an extension,  $f^2$ , formed at the upper end of the socket F, whereby the socket is held on the pin or stud  $g$ . One side of the extension  $f^2$  is beveled or chamfered off, as shown at  $f^3$ , so that when the standard is swung outwardly, as shown in Fig. 3, the extension  $f^2$  will be disengaged from the hood G. The chamfered edge of the extension  $f^2$  is formed at such an angle with reference to the lower straight edge of the hood G that the socket F can only be disengaged from the pin  $g$  when the standard is disconnected from the brace C' and swung outwardly beyond the length of the brace. The socket F is preferably constructed of malleable iron or other suitable metal.

I claim as my invention—

1. The combination, with the body A and platform B of a ladder, of brackets D, secured to the body A, and provided with lugs or ears

*d*, adapted to be bent over the top of the platform, substantially as set forth.

2. The combination, with the body of the ladder and standard C, provided with a socket, 5 F, having an extension, *f*<sup>2</sup>, of the metallic bracket D, secured to the body and provided with a pin, *g*, over which the socket F engages, and a hood or cap, G, adapted to engage over the extension *f*<sup>2</sup>, substantially as set forth.

Witness my hand this 16th day of April, 1884.

HENRY P. SPENCER.

Witnesses:

C. F. GEYER,

JNO. J. BONNER.