

(No Model)

G. H. CLIFF.  
STEP LADDER.

No. 583,139.

Patented May 25, 1897.

Fig. 2.

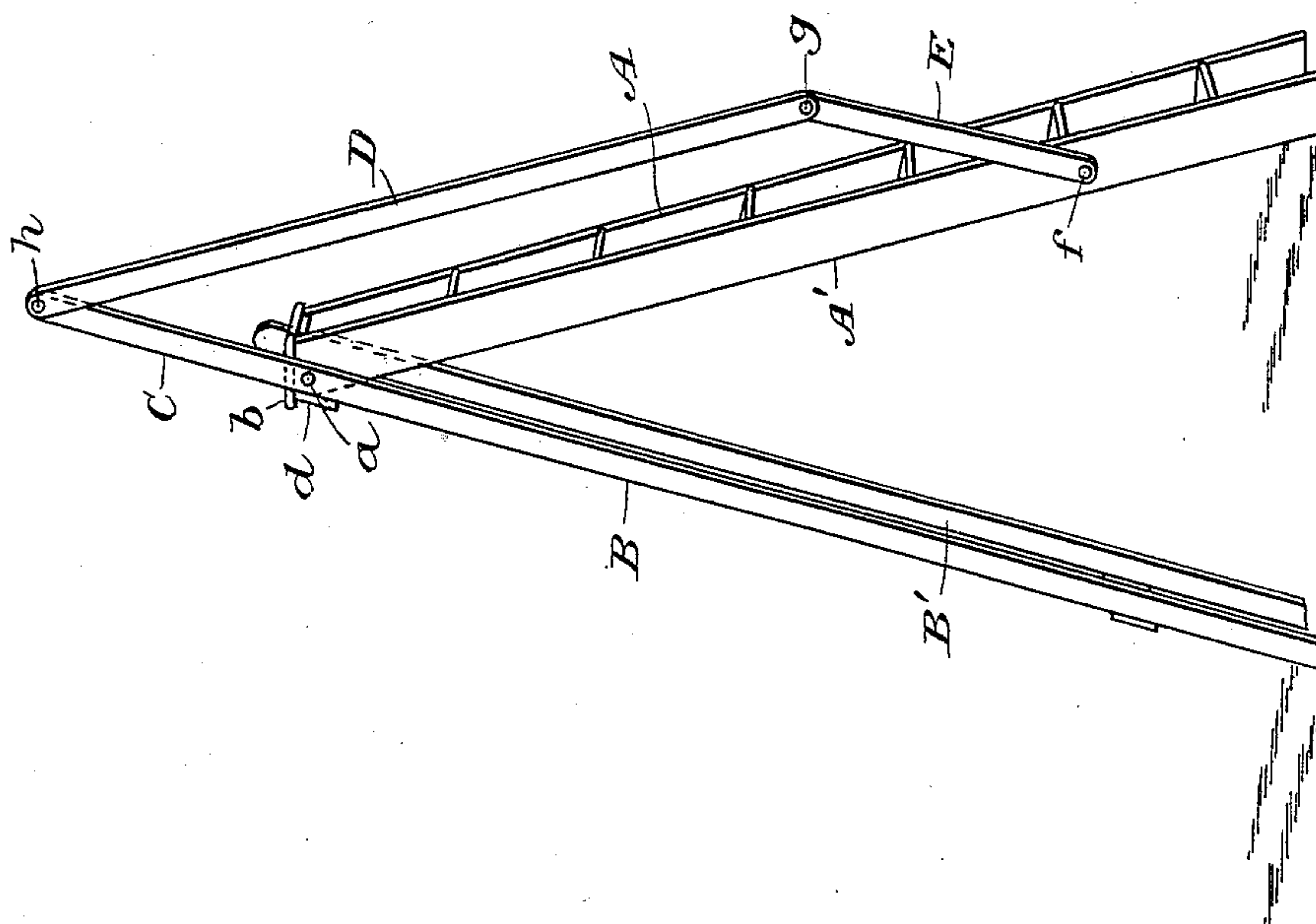
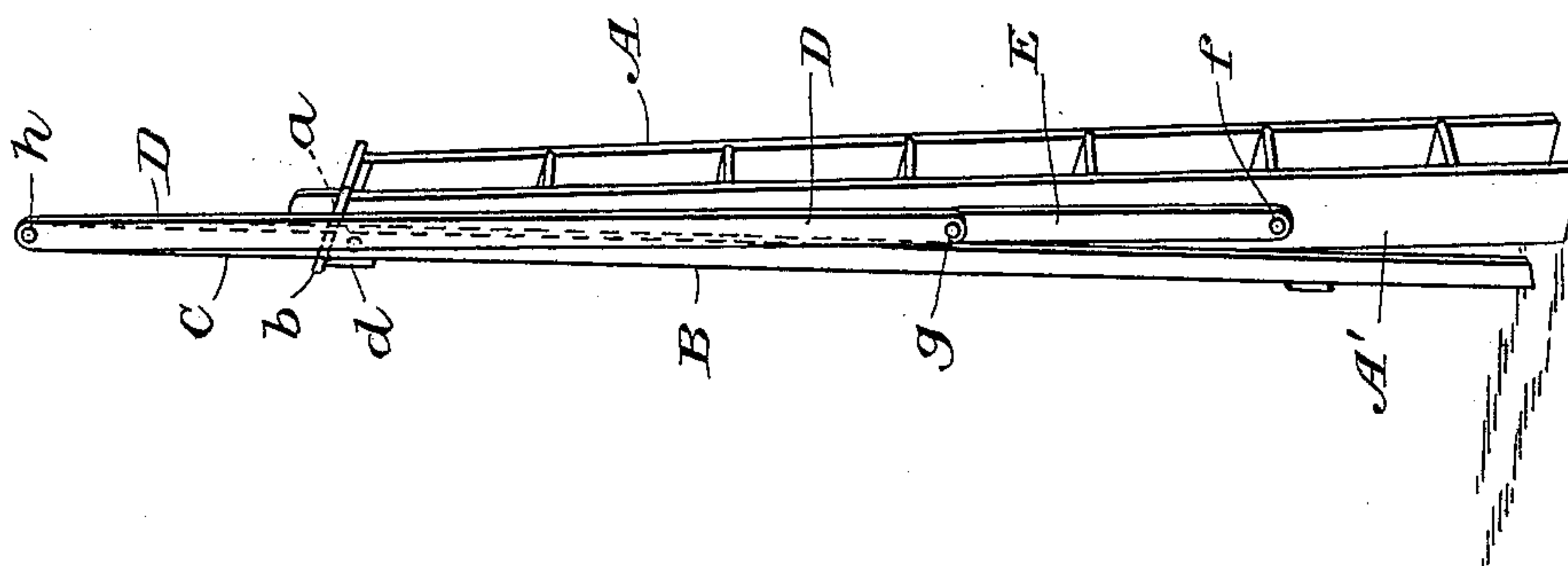


Fig. 1.



WITNESSES:

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ATTORNEYS

# UNITED STATES PATENT OFFICE.

GEORGE HENRY CLIFF, OF JOHANNESBURG, SOUTH AFRICAN REPUBLIC,  
ASSIGNOR TO WILLIAM MORRIS PEARSE AND THOMAS LAWRENCE  
MORECROFT, OF SAME PLACE.

## STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 583,139, dated May 25, 1897.

Application filed January 14, 1897. Serial No. 619,235. (No model.) Patented in South African Republic August 3, 1896,  
No. 1,176.

*To all whom it may concern:*

Be it known that I, GEORGE HENRY CLIFF, a subject of the Queen of Great Britain, residing at Johannesburg, in the South African Republic, have invented certain new and useful Improvements in Step-Ladders, (for which I have obtained Letters Patent in the South African Republic, No. 1,176, bearing date August 3, 1896,) of which the following is a specification.

This invention relates to step-ladders, and is designed with the object of providing same with a hand-rail for purposes of safety, which will be automatically extended or placed in position when the step-ladder is opened or brought into position for use.

The invention consists in the special arrangement of the parts hereinafter fully described, and pointed out in the claim.

Figure 1 is a perspective view of the step-ladder closed. Fig. 2 is a perspective view of same extended or ready for use.

The step-ladder A is constructed with the back struts B B', pivoted to the top of the front portion of the step-ladder by means of the clamping-bolt *a*, preferably passing just under the top step. The top step may be made somewhat broader than the others, so as to project backward, say, about an inch beyond the inner edge of the side pieces of the front portion of the step-ladder, as shown at *b*. The top cross bar or brace *d* of the struts comes against the projecting ledge *b* of the top step and thereby prevents the struts being opened out from the steps or front portion of the step-ladder farther than is necessary for maintaining the latter at the proper inclination for use. By this construction all necessity for the use of ropes or cross-stays between the struts and the steps proper is dispensed with and their attendant risks thereby avoided.

Preferably the left leg B of the struts is continued or produced for from, say, eighteen inches to two feet above and beyond the top of the ladder, as shown at C. To the top of

this extension-piece or continuation C of the strut B a light hand-rail D is pivoted at *h*, which rail is extended downward to, say, about the level of the third step, where its lower end is pivoted at *g* to an arm or support E, the lower end of which support is in turn pinned or pivoted to the side A' of the steps by means of the clamping-bolt *f*, which passes through, preferably, just under the second step.

When the steps are closed, as shown in Fig. 1, the hand-rail D lies flat alongside the side piece A' of the front portion of the steps, and as the steps are opened the extension-piece C acts as a lever to automatically raise and extend the hand-rail D and to support it in its extended position, as shown in Fig. 2.

It will be evident that the step-ladder might, if desired, be provided with a rail at either side instead of at one side only, as described and shown in the drawings.

Having now particularly described and ascertained the nature of my invention, I declare that what I claim, and desire to protect by Letters Patent, is—

In combination, the front part of the ladder consisting of the sides A and the steps with the upper step extended to the rear and the rear part consisting of the back struts B extending up on the outside of the front sides A and pivoted thereto on the outer faces thereof, the brace-bar *d* extending between and secured to the back struts and having its upper edge arranged to bear on the under side of the rear edge of the upper step, one of said back struts being extended upwardly above and outside the upper step, the hand-rail connected to said extension and the support E connected with the hand-rail and the side A, substantially as described.

In witness whereof I have hereunto set my hand, in presence of two witnesses, this 5th day of December, 1896.

GEO. HENRY CLIFF.

Witnesses:

WILLIAM JOHN ROBSON,  
CHAS. ODENDALE.