(No Model.)

F. WHITE.

STEP LADDER.

No. 538,570. Patented Apr. 30, 1895.

Fig. 1.

Fig. 2

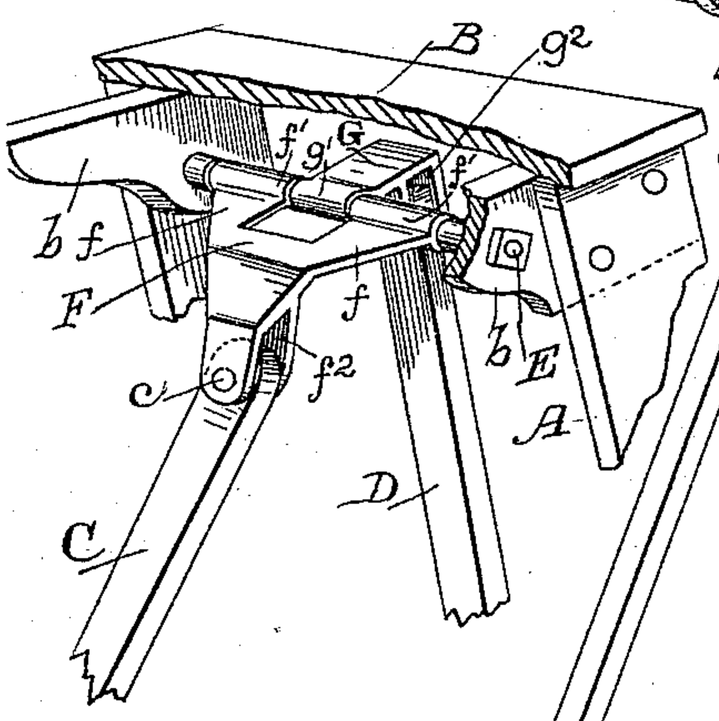
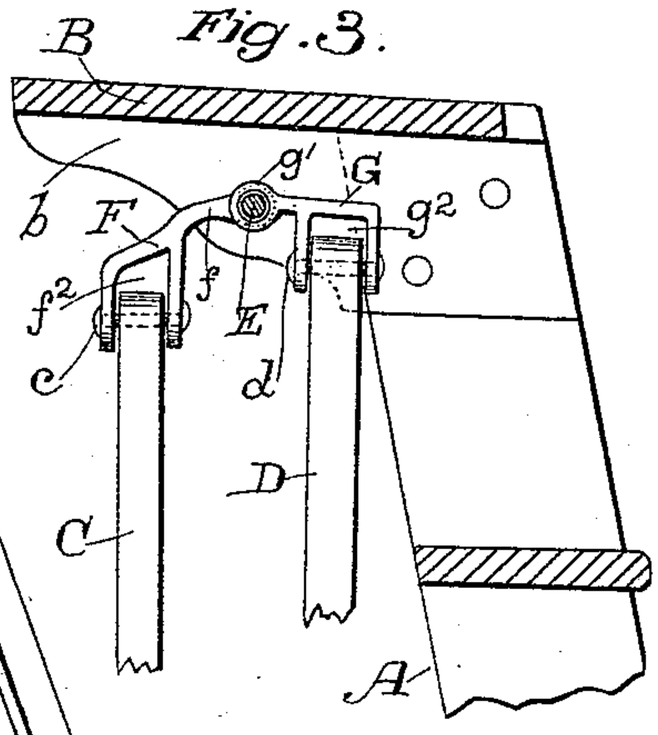


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK WHITE, OF POMONA, CALIFORNIA.

STEP-LADDER.

SPECIFICATION forming part of Letters Patent No. 538,570, dated April 30, 1895.

Application filed December 15, 1894. Serial No. 531,945. (No model.)

To all whom it may concern:

Be it known that I, FRANK WHITE, a citizen of the United States, residing at Pomona, county of Los Angeles, State of California, have invented an Improvement in Step-Ladders; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of step-ladders, in which the legs are connected at their upper ends to the ladder by means of a freely playing joint, or such a combination of hinges as will enable them to be moved independently of one another and in every direction with respect to the plane of the ladder.

My invention consists in the connection of the upper ends of the independently movable legs, one behind the other, in the central transverse plane of the ladder; and it also consists in the novel construction of the head plates by which said legs are connected to the ladder.

The general object of my invention is to provide, by reason of this novel location and connection of the upper ends of the legs with the ladder, for the greatest safety, durability and strength, combined with perfect adjustability under all circumstances and automatic action in fitting itself to whatever surface it may be upon.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my step-ladder. Fig. 2 is a perspective view of the top, the shelf B being broken away to show the connection of the legs. Fig. 3 is a section in the transverse plane of the ladder.

A is the ladder, of which B is the top shelf resting upon suitable brackets *b* secured to the top of the ladder.

C is the outer leg, and D the inner leg of the ladder. The upper ends of these legs, which are entirely independent of one another, are connected with the ladder by means of a suitable joint or hinge, or combination thereof, which will permit them to be independently moved in any direction with relation to the ladder, both sidewise and forward and back, said connection having, however, an essential feature in that the upper ends of both legs lie in the central transverse plane of the ladder, so that one of the legs is farther back than the other. As far as this peculiar location of the two legs is concerned, and the advantages which flow from this location, it is immaterial what form of connection may be used, but the form which I deem best is the one here shown and which is constructed as follows: In the brackets *b* is fitted a cross shaft E. A head plate F having arms *f* with eyes *f'* is pivoted upon this shaft, said head-plate having a depending socket f^2 in which the upper end of the leg C is pivoted by means of a horizontal bolt *c*. A head-plate G having an eye *g'* is pivoted upon the center of the shaft E between the eyes *f'*, and said plate G has a depending socket g^2 in which is pivoted the upper end of the leg D by a horizontal bolt *d*. Thus, by means of the pivotal connection of the eyes of the head-plates with the shaft, and by means of the pivotal connection of the legs C and D with the depending sockets of said head-plates, said legs may be moved in any direction with respect to the ladder and independently of one another.

It will be observed that the depending socket f^2 of the head-plate F lies in a lower plane than that of the depending socket g^2 of the head-plate G, so that the rearmost leg C in being moved out at right angles from the ladder will not cause its head-plate to strike the shelf above and interfere with its free action.

The advantages of placing one of the legs behind the other and directly in the transverse central plane of the ladder, are that it is immaterial to which side either leg is thrown or placed, as the altitude of the top of the ladder is not affected, because the pivot on which the legs swing is under the center of the top shelf. The height of the top of the ladder would, however, be affected if the legs were placed side by side, as is customary, provided the attempt were then made to throw the legs to the wrong side. Besides, by being placed as I have shown them, one in front of the other, their sidewise motion is freer than would be the case if they were placed side by side, as in the latter case they are liable to interfere with one another. Again, this position of the legs which I have here shown, namely, one in front of the other, reduces to a minimum the liability of the ladder to creep or walk which is a common fault and is due

to the weight being placed on one side or the other of the top shelf, thereby tilting the ladder so that one of its legs, when they are placed side by side, as is usual, leaves its position on the ground and automatically takes a new position, and when the weight is placed on the other side, the other leg does the same thing; but with my arrangement, no matter where the weight is placed upon the ladder which may cause it to tilt or pivot slightly, its movement being on the central transverse line, its legs never change their base position, and, therefore, do not creep or walk; nor is there any strain on the head or head bolt.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A step ladder having independently movable legs connected at their upper ends to the ladder, one behind the other, in the central transverse plane of the ladder.

2. A step ladder having legs, the upper ends of which lie one behind the other in the central transverse plane of the ladder, and a connection for said upper ends with the ladder, whereby the legs are independently and freely movable in all directions.

3. A step-ladder having legs, the upper ends of which lie one behind the other in the central transverse plane of the ladder, and a connection for said upper ends with the ladder, whereby the legs are independently and freely movable in all directions, consisting of the horizontal cross shaft, and the head-plates having eyes pivoted upon said horizontal cross-shaft, and depending sockets in which the upper ends of the legs are pivoted by horizontal bolts, said sockets lying one behind the other in the central transverse plane of the ladder.

In witness whereof I have hereunto set my hand.

FRANK WHITE.

Witnesses:
C. E. DUDLEY,
IRA F. WHITE.