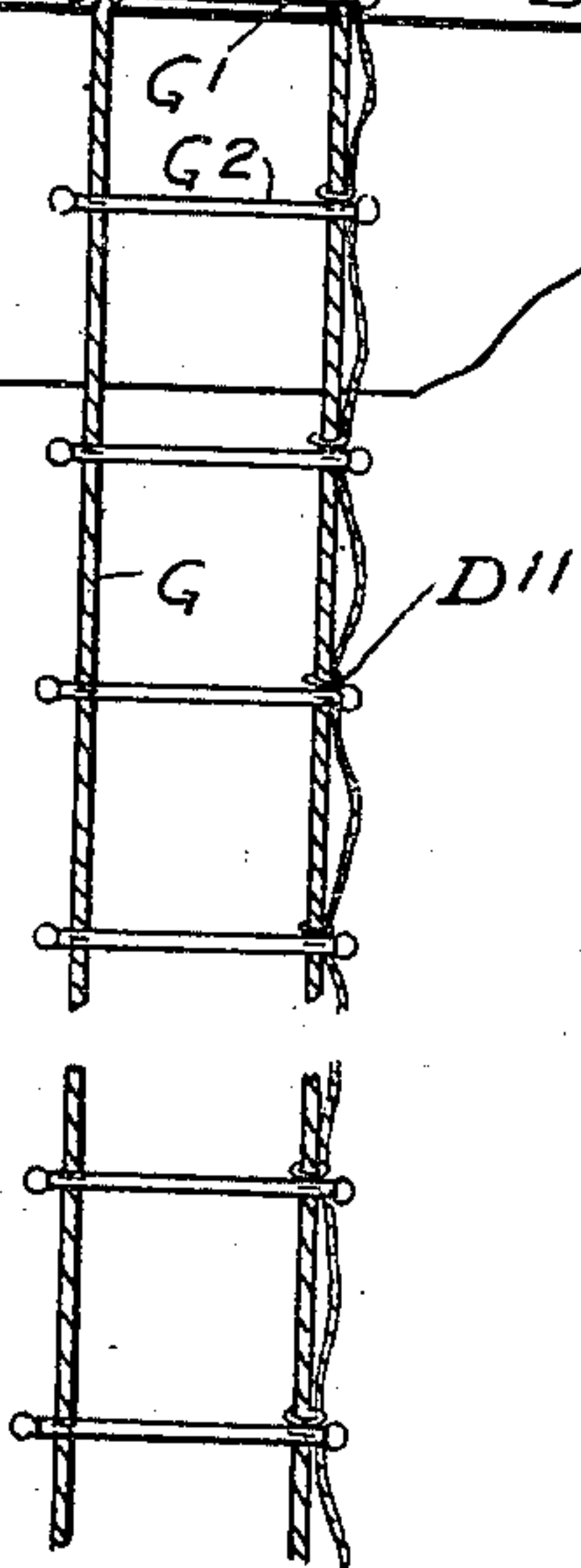


FIRE ESCAPE.

APPLICATION FILED AUG. 26, 1908.

Patented Aug. 9, 1910.

2 SHEETS--SHEET 1.



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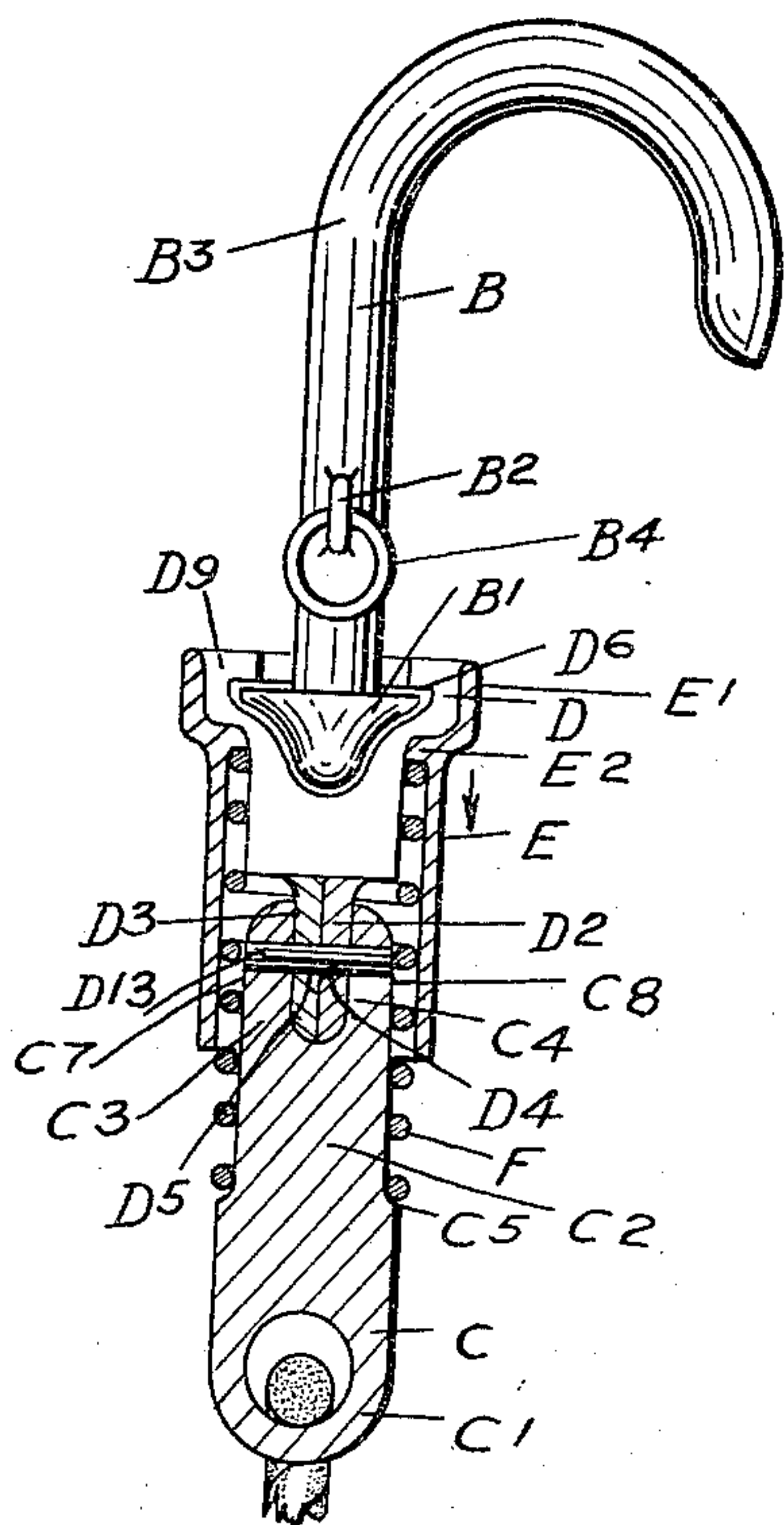


FIG. 3.

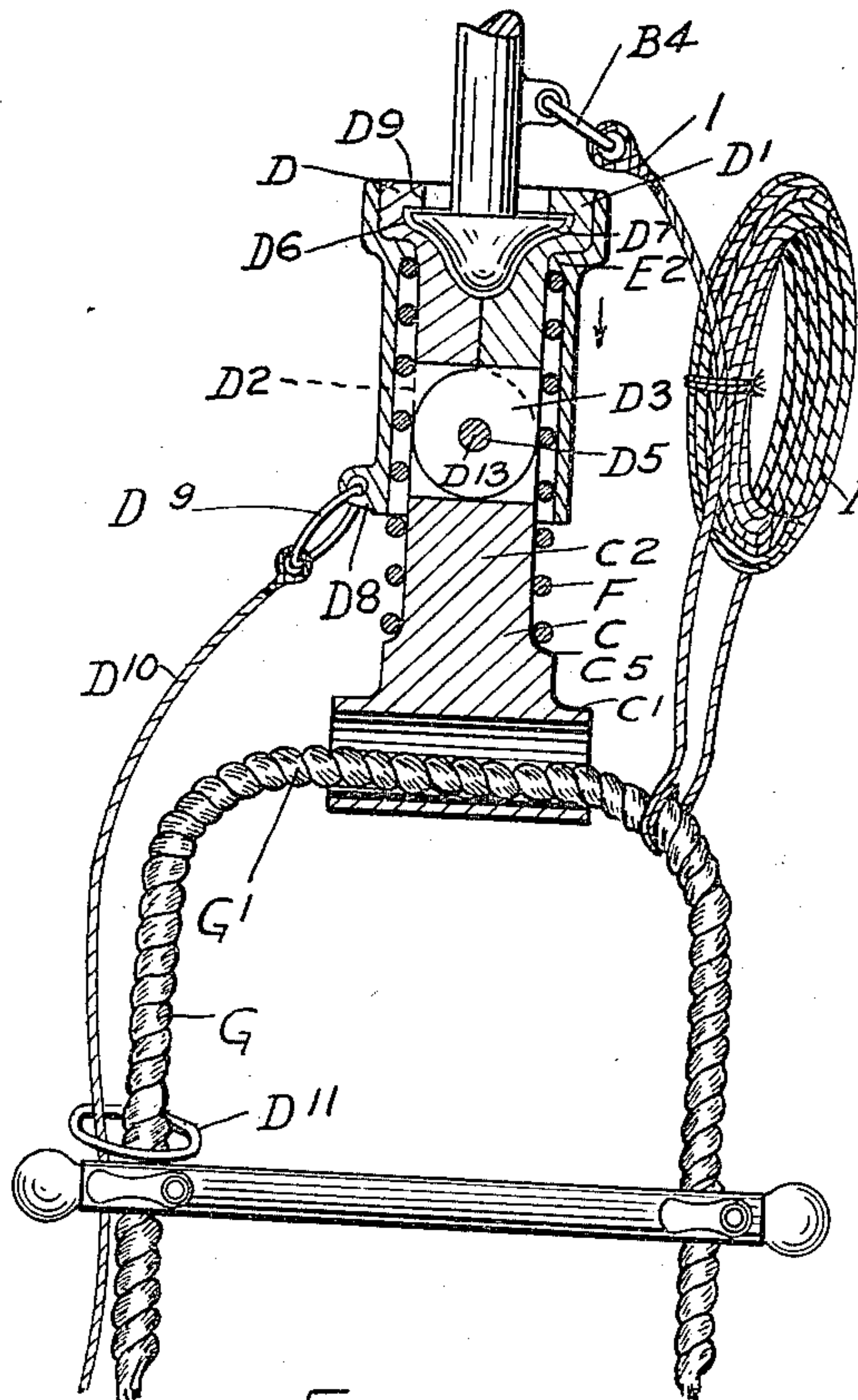


FIG. 2.

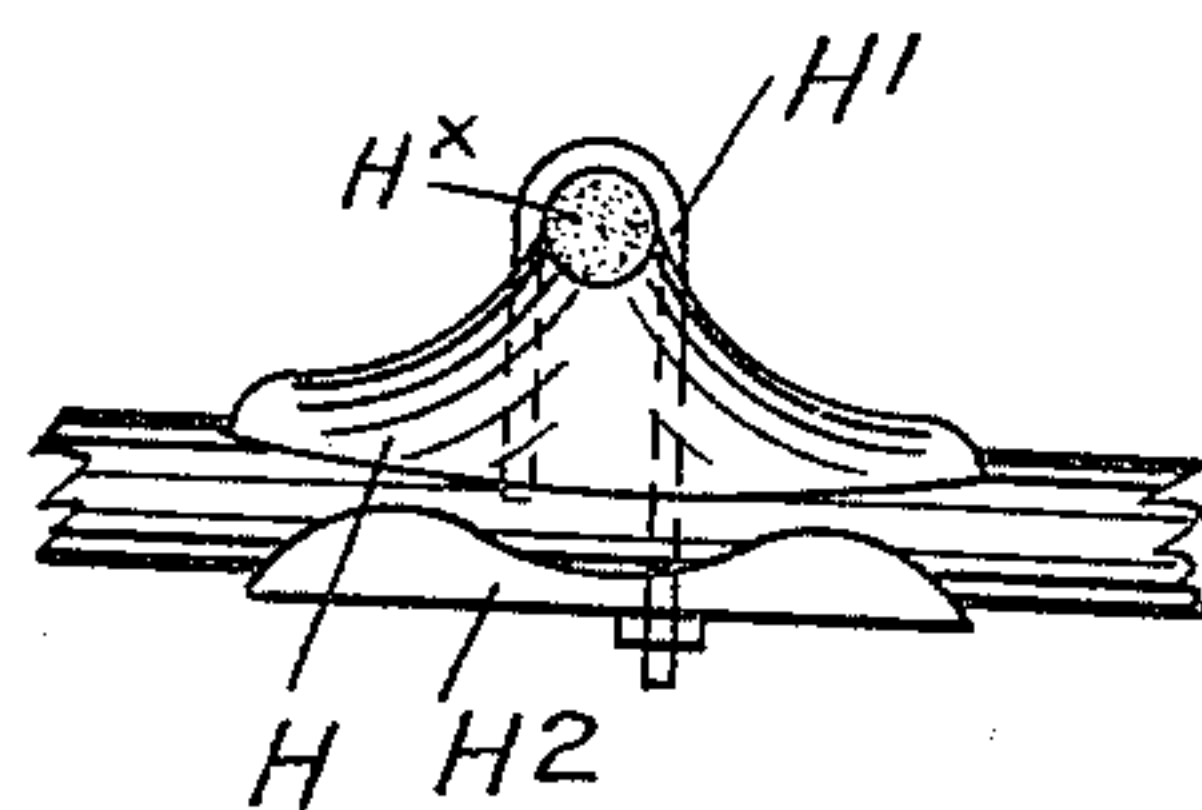


FIG. 6.

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FIRE-ESCAPE.

966,447.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed August 26, 1908. Serial No. 450,393.

To all whom it may concern:

Be it known that I, WILLIAM JOHN HUFF, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Fire-Escapes, of which the following is the specification.

My invention relates to improvements in fire escapes, and the object of the invention is to devise a simple, cheap, strong and durable fire escape which may be readily moved from window to window as desired and may be detached from the window by the descending person on reaching the ground and if desired raised again to the window by any person within the building and it consists essentially of a hook designed to hook over the inside edge of the window-sill provided with stem, a socket also provided with a stem and a rope ladder secured to such socket member, a detachable clutch connection between the stem of the socket member and the stem of the hook, an operating rope designed to operate the clutch and to pass downwardly at the side of the ladder through guiding rings or loops secured on the side of the ladder and a rope secured to the stem of the hook member at one end and to the ladder at the opposite end as hereafter more particularly explained by the following specification.

Figure 1, is a general perspective view showing my ladder in position and connected to the window-sill. Fig. 2, is an enlarged sectional detail showing the detachable connection between the ladder and hook member. Fig. 3, is a similar view to Fig. 2 taken at right angles thereto. Fig. 4, is a sectional perspective detail of the clutch device. Fig. 5, is a perspective detail of the clutch members. Fig. 6, is a plan sectional detail showing the manner of connecting the rungs to the ropes of the ladder.

In the drawings like letters of reference indicate corresponding parts in each figure.

Referring to Fig. 1, A represents a window and A' the window sill thereof.

B is a hook member provided with a head B' and a lug B² formed at one end of the stem B³ of the hook.

B⁴ is a ring secured within the lug B².

C is a member formed by the tubular portion C' and central solid stem C² provided at its upper end with side lugs C³ and C⁴. It will be noticed on referring particularly

to Fig. 4 that the stem C² is formed with a shoulder C⁵ intermediately of its length.

D and D' are jaw clutch members provided with lugs D² and D³ at their lower ends designed to enter the notch formed between the side lugs C³ and C⁴ of the stem C².

D¹³ is a journal screw extending through holes C⁷ and C⁸ formed in the lugs C³ and C⁴ and also through holes D⁴ and D⁵ in the lugs.

D⁶ and D⁷ are recesses corresponding to the form of the head B' of the hook B. The upper portion of the recess is formed with an annular internal flange D⁹ beneath which fits the head B' when the clutch is in its locked position.

E is an annular sleeve provided with an enlarged upper end E' and an annular flange E². The stem E when it is in its normal position encircles the upper portion of the stem C² of the socket C' and also the jaw members D and D'. It will be noticed on referring to Figs. 2 and 3 that the jaw members are provided with enlarged upper ends designed to fit within the enlarged end of the sleeve E.

F is a spiral spring designed to fit within the sleeve E and to extend between the annular flange E² of the sleeve E and the annular shoulder C⁵ of the stem C.

D⁸ is a lug formed on the side of the sleeve E and provided with a hole in which fits a ring D⁹. To the ring D⁹ is secured a cord D¹⁰ which passes downwardly parallel with the side of the ladder being connected thereto by rings D¹¹ which encircle such cord and one of the side cords of the ladder.

G is a ladder which is formed by the rope G' extending through the tubular portion of the socket member C. The rope G' depends downwardly on each side of such socket member and is provided with rungs G² extending between the depending member of the rope. The rungs G² are connected to the rope by means of any suitable device but preferably such as shown in Fig. 6. This device is formed by a chair H designed to fit on one end of the rung and provided with a semi-circular recess H^x into which the rope G' fits. The chair H is also provided with holes extending through the chair at each end of the recess H^x.

H² is a plate designed to fit the opposite side of the rung to the chair H, and H' is a hook bolt the ring member of which extends

through one of the holes in the chair H through the rung and through the hole in the plate H². The short member of the hook merely extends into the hole in the chair
5 on the opposite side of the rope.

I is a rope which is connected at one end to the ring B⁴ and at the opposite end to a suitable portion of the rope G' forming the ladder. This rope I is normally rolled into
10 a coil as shown in Figs. 1 and 2 such coil being secured together by a light string which may be easily broken.

Having described the principal parts involved in my invention I will briefly describe the operation of the same. When it
15 is necessary for an occupant of the building to descend from one of the windows thereof all that it is necessary to do is to throw the ladder through the window and attach the
20 hook B over the inner edge of the window sill. The person then descends by the rope ladder and if he desires to detach the same from the window he pulls upon a cord D¹⁰ which draws the sleeve E longitudinally into
25 the direction indicated by arrow in Figs. 2 and 3 against the compression spring. By this movement of the sleeve the jaws D' and D² are relieved and are allowed to swing outwardly thereby releasing the head B' of
30 the hook B. The ladder then drops to the ground and by its weight severs the string connecting the coil I allowing the lower end of such rope to drop with the ladder. If by oversight there should be any person left in
35 the building after the ladder has been detached such person by pulling upon the rope I raises the ladder again to the window sill and by drawing the sleeve E longitudinally over the jaw D and D' releases them and
40 allows the head B' of the hook B to pass between the same and be secured. He can then descend in his turn. It will be seen when the ladder is not in use it may be rolled up into a compact coil and fastened by any
45 suitable fastening bands and kept ready for use in any desired place.

From this description it will be seen that I have devised a very simple ladder which may be quickly brought into use at any desired window in the building.
50

What I claim as my invention is:

1. In a fire escape, the combination with the rope ladder, of a hook member designed to extend over the inner edge of the window
55 sill and provided with a stem having a headed end, jaw members connected to the ladder, means for releasing the members of the jaw so as to detach the headed stem therefrom as and for the purpose specified.

2. In a fire escape, the combination with the rope ladder, of hook members designed to extend over the inner edge of the window
60 sill provided with a stem and having a headed end, a member secured to the rope ladder having a stem, jaw members pivot-

ally secured within the end of the stem designed to grip the aforesaid head of the hook member a sleeve provided with a shoulder and held upon the stem of the member
70 connected to the ladder and the jaw members and a compression spring designed to extend between the sleeve and the member secured to the ladder as and for the purpose specified.

3. In a fire escape, the combination with
75 the rope ladder, of a member connected to the ladder provided with a suitable stem and an annular shoulder, a hook member designed to extend over the inner edge of the window sill provided with a headed stem,
80 jaw members pivotally connected to the stem of the member secured to the ladder, such jaw members having enlarged outer ends, a sleeve secured to such jaw, members having an enlarged upper end into which
85 the enlarged ends of the jaws are designed to fit, an internally annular shoulder provided within the sleeve and a compression spring extending between such shoulder and the shoulder formed on the stem of the mem-
90 ber connected to the rope ladder as and for the purpose specified.

4. The combination with the rope ladder, of a member secured to the inner side of
95 such ladder provided with a central stem having lugs, jaw members pivoted between such lugs having gripping recesses formed therein, a headed member designed to fit within such recess and designed to be detachably secured to the window sill, a spring
100 held sleeve surrounding such stem and jaw members, and designed to hold the jaw members normally together as and for the purpose specified.

5. In a fire escape, the combination with
105 the rope ladder, of a member having a stem having end gripping lugs and a shoulder, gripping jaws pivotally secured between such lugs having enlarged ends, a sleeve surrounding such jaw members and having an
110 enlarged outer end into which the enlarged outer end of the jaw members are designed to fit, an annular internal flange located within the sleeve and a compression spring located between the annular flange on the
115 sleeve and the shoulder on the stem, a headed member, the head of which is designed to fit within the jaw members and to be detachably secured on the window, and a rope secured to the said sleeve de-
120 signed to extend downwardly parallel with the ladder as and for the purpose specified.

6. In a fire escape, the combination with the rope ladder, of the member secured on
125 the upper end of the ladder, and a member designed to be secured to the window, a detachable clutch connecting the member secured on the window to the member secured to the ladder and a rope connecting the member connected to the window to the rope
130

ladder and intermediate portions of the rope being designed to form a coil secured together by readily breakable string as and for the purpose specified.

5 7. In a fire-escape, the combination with a T-shaped member having a tubular horizontal portion and a stem provided with end lugs, of jaws pivoted between such lugs provided with gripping recesses in the end
10 thereof, a sleeve designed to encircle the said stem and provided with an internal flange, a spring extending between such annular shoulder and the tubular end of the T-shaped members a hook adapted to be engaged by said gripping recesses and a ladder
15 secured to the tubular portion of the T-shaped member, as and for the purpose specified.

20 8. In a fire-escape, the combination with the T-shaped member having a tubular end

and a stem having end lugs and an annular shoulder intermediately of its length, of gripping jaws pivoted between the end lugs having enlarged outer ends, a hook adapted to be gripped by said ends, and a ladder carried by the tubular end of the T-shaped member, a sleeve surrounding the upper end of the stem and jaw members in which the enlarged outer ends are designed to fit, an annular flange located within the sleeve, a
25 spiral spring surrounding the said stem and jaw members and extending between the annular flange of the sleeve and the annular shoulder formed on the stem of the T-shaped member as and for the purpose
30 specified.

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Witnesses:

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