

(No Model.)

W. C. BUSH.

FLEXIBLE FIRE ESCAPE LADDER.

No. 277,222.

Patented May 8, 1883.

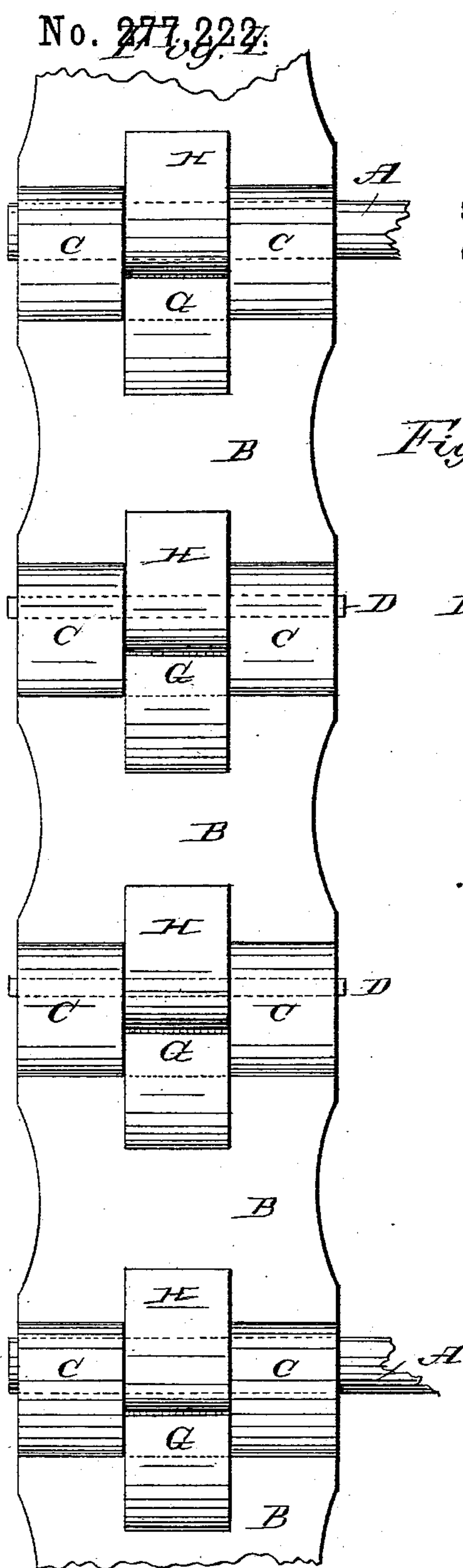


Fig. 1.

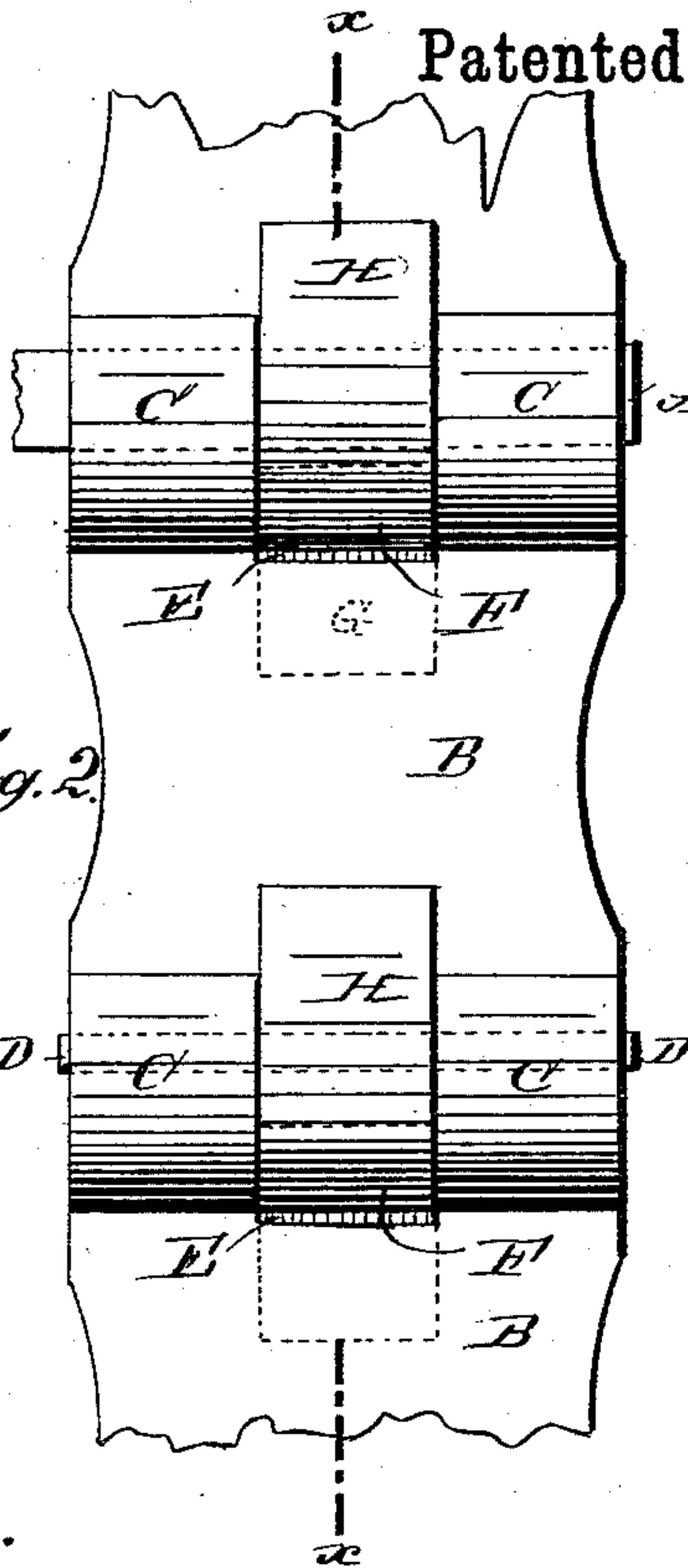


Fig. 2.

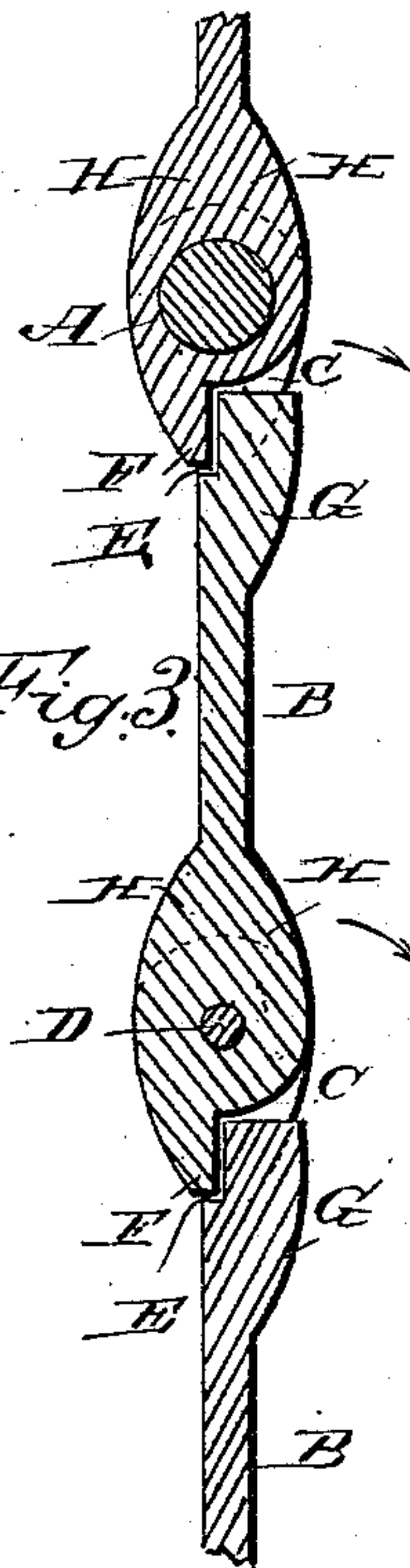
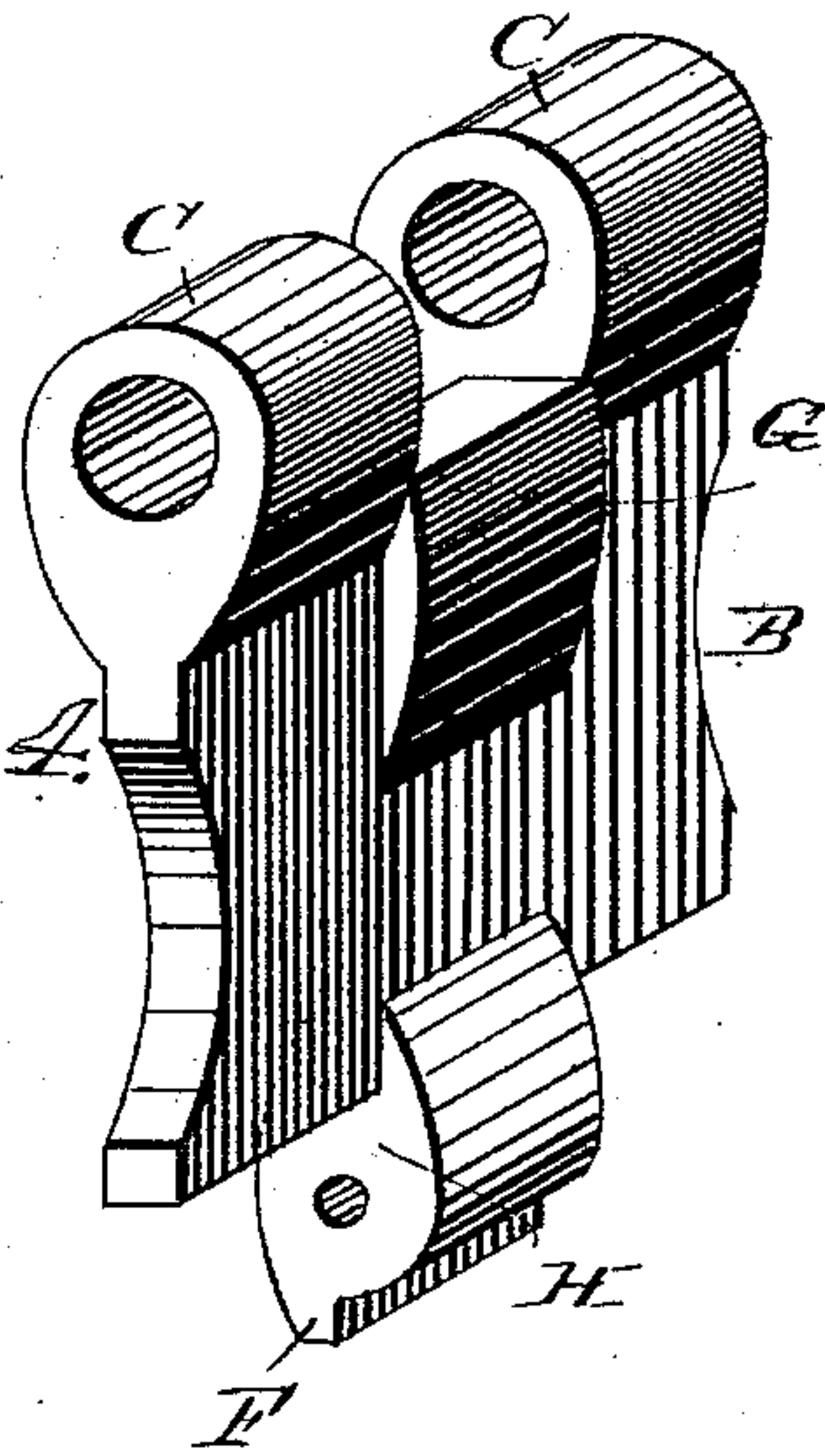


Fig. 3.



WITNESSES:

Chas. Beyer
C. Sedgwick

INVENTOR:

W. C. Bush

BY

munroe

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WESLEY C. BUSH, OF BROOKLYN, NEW YORK.

FLEXIBLE FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 277,222, dated May 8, 1883.

Application filed November 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, WESLEY C. BUSH, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Fire-Escape Ladder, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved link or chain ladder which can be wound on a drum, and which can be bent in one direction only, being stiff in the other direction.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of the inner surface of one of the side bars of my improved folding-ladder. Fig. 2 is a longitudinal view of the outer surface of the same. Fig. 3 is a longitudinal sectional elevation of the same on the line *x x*, Fig. 2. Fig. 4 is a perspective view of one of the links, showing it detached.

The ladder is composed of two side pieces united by rung-bars A, which side pieces are formed of a series of links or castings, B, which are pivoted to each other. The said castings B are provided at the upper ends with two apertured jaws or eyes, C, between which a single jaw or eye projecting from the lower edge of the next higher link fits, and the two links are united by a pin, D, passed through these eyes, or by the rung-bars A, which can also be passed through the eyes, the pins being of less diameter than the rung-bars. On the outer surfaces the links are provided at the upper edges with a rabbet, E, between the eyes C, into which rabbet a tongue, F, projecting from the lower edge of the eye H, fits. The said tongue F permits the links to fold or double over on the inner surfaces of the side pieces of the ladder, as indicated by the arrows in Fig. 3, but prevents the links from being doubled over or folded in the inverse direction of the said arrows, whereby if the strain is in the direction of the said arrows stiff and rigid side bars of the ladder will be formed. As part of the metal of the link has been removed in forming the rabbet E, a strengthening-lug, G, is cast on the inner surface of each link at the upper

edge, which strengthening-lug extends to about half the length of the link and tapers from the end toward the middle of the link. The side edges of the links are preferably recessed, as shown, so as to make the links lighter. I prefer to have three links between the rung-bars; but more or less may be used, as may be desired. The links are to be made of malleable iron, and the rung-bars A and pins D are to be made of the best wrought-iron; but steel, brass, bronze, or any other metal may be used in the construction and manufacture of the above-described ladder.

The special advantages of this ladder are that it can be rapidly rolled on a drum, can be easily unrolled, and stiffens itself automatically in case the lower end of the ladder is a greater distance from the support than the upper end of the ladder—that is, if the ladder is inclined, it will not sag and hang on a curve, as a rope does, but will remain perfectly stiff on account of the tongues F.

The size of the link-pieces can be varied according to the length of the ladder, the width of the same, and the load it is to carry.

This ladder is especially adapted for use as a fire-escape, and particularly for that class of fire-escape in which a flexible ladder is wound on a drum on the roof of the house; but the ladder can be used for all the various purposes for which flexible ladders are apt to be used.

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

1. A chain-link having two edge-eyes, C C, with an intermediate rabbet, E, at one end, and at the other a single eye, H, with a median tongue, F, as and for the purpose set forth.

2. The side pieces for a flexible ladder, composed of a series of links, B, provided with perforated jaws or eyes C at the upper edge, between which jaws a rabbet, E, is formed, and with an eye or jaw, H, at the lower edge, which jaw is provided with a tongue, F, substantially as herein shown and described, and for the purpose set forth.

3. The side pieces for a flexible ladder, formed of a series of links, B, having two perforated jaws or eyes, C, at the upper edge, and a rabbet, E, formed between the said eyes on one

surface, and a lug, G, formed on the opposite surface, and having a jaw, H, at the lower edge, which jaw H is provided with a tongue, F, substantially as herein shown and described, 5 and for the purpose set forth.

4. In a flexible ladder, the combination, with the links B, provided with jaws C at the upper edge, and the rabbet E and lug G between the said jaws, with a jaw, H, at the lower edge, 10 and with a tongue, F, on the said jaw, of the pivots D and the rung-bars A, substantially

as herein shown and described, and for the purpose set forth.

5. In chain-links, the lug G, commencing between the eyes C C on the inner surface of the 15 upper end and tapering gradually on its outer surface to or nearly to the middle of link, as and for the purpose specified.

WESLEY C. BUSH.

Witnesses:

OSCAR F. GUNZ,
C. SEDGWICK.