

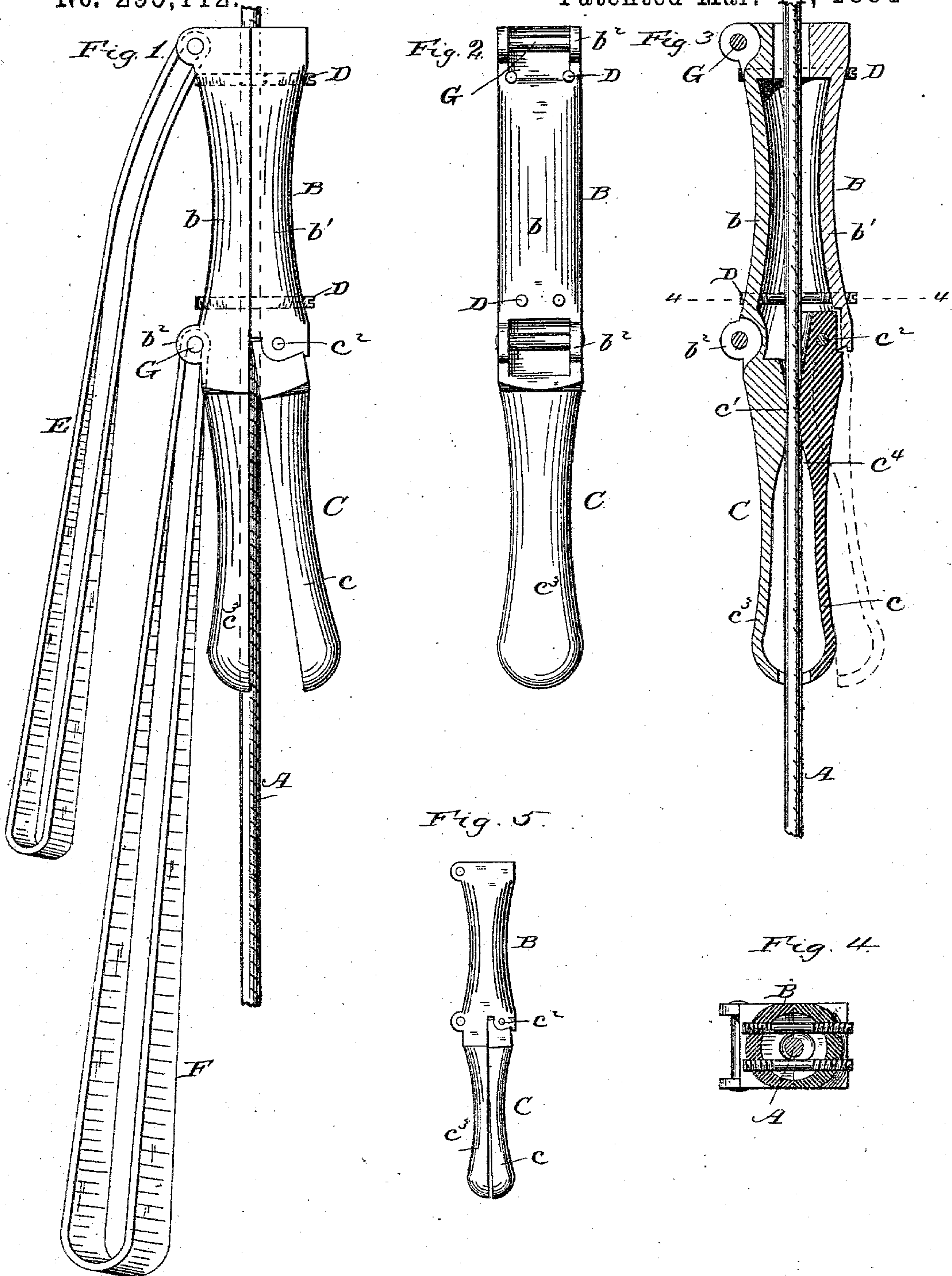
(No Model.)

J. M. CHESNUT.

FIRE ESCAPE.

No. 295,112.

Patented Mar. 11, 1884.



Witnesses:
Henry Calver
W. B. Chaffee

Inventor:
James M. Chesnut.
by H. N. Lewis,
attor.

UNITED STATES PATENT OFFICE.

JAMES M. CHESNUT, OF MUNCY, PENNSYLVANIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 295,112, dated March 11, 1884.

Application filed November 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. CHESNUT, a citizen of the United States, residing at Muncy, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to an improvement in that class of fire-escapes which comprises those that are used to effect a descent from an elevated portion of a building or other height by means of a rope secured at its upper end and reaching to the ground, and a device surrounding the rope and adapted to support the weight of the person and to slide upon the rope, or to be clamped thereto by friction, at the will of the operator. These general features are old, and I do not claim them as my invention; but by that construction of the sliding device which I have invented it may be grasped in such manner by the hands of the operator that it may be securely held, and at the same time the brake for checking the descent used with convenience and certainty.

In the use of this class of fire-escapes it is often necessary to make a rapid descent through a sheet of flame, or to avoid other dangers; and to this end the sliding device should be capable of such disconnection from the rope, though still surrounding it, that it may fall with the full speed of gravity. Under such circumstances there should be no inconvenience or uncertainty in grasping the device firmly, or in the operation of the brake. Objections to devices of this character previously used have been obviated by my invention. The form in which, for the purpose of illustration, I have embodied it I will now describe, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the device, showing a portion of the rope and the supporting-straps. Fig. 2 is a front elevation of the same, the straps being removed. Fig. 3 is a vertical section. Fig. 4 is a horizontal section. Fig. 5 is a view of a modified form.

The device, which may be made of metal or any other suitable substance, consists of two handles—one above the other—and both surrounding the rope A, so as to slide thereon. One of these handles, B, is rigid and incompressible, so that it may be seized and held

firmly with the full strength of the operator without thereby causing any friction between said handle and the rope. The other, C, preferably the lower, is composed in part of a piece, *c*, which is constructed to move toward the rope under the grasp of the operator, and thereby decrease the size of the aperture *c'* in said handle C, through which aperture the rope passes, and by friction decrease the rapidity of or entirely stop the descent.

The mobility of a portion of the handle C may be effected in various ways. The particular construction in this respect that I have adopted is old and not the invention claimed herein. As shown in the drawings, the piece *c* extends longitudinally of the rope, and is pivoted to the handle B at *c''* on a line at right angles to the rope, so that an oscillation of said piece *c* will cause a portion of it to approach the rope and compress the same against the immovable portion *c''* of the handle C. Certain advantages, however, result from the manner in which I have constructed the pivoted piece *c* and combined it with the opposing piece *c''*. Preferably each of these pieces constitutes substantially a half of the handle C. They are each hollowed out on the inner surface to receive the rope. At the point, however, where it is intended they shall compress the rope and act as a brake, the hollow is slight, and the inner surfaces approach one another to such a degree that when a rope of the size it is desired to use is introduced within the handles, and the part *c* is in the position indicated by dotted lines in Fig. 3, the rope shall barely pass through without friction. In such case a small movement of the part *c* toward the part *c''* will cause a frictional contact with the rope, and by a further movement the rope may be securely held and the descent stopped. At *c''* the gradual approach of the inner surfaces of the parts of the handle C makes a cone-shaped funnel, into which the rope passes. This causes the friction to increase more gradually and the strain to be imparted less abruptly to the rope, and also reduces the wear upon the surface of the rope. The power that can be exerted by the brake depends upon the distance of the grasping-surfaces from the pivot, which may be properly regulated in constructing the parts *c* *c''*.

When the handle B is made in two parts

connected by screws D, as shown, their distance apart may be regulated according to the size of the rope. If desired, right-and-left hand screws may engage at one end with the part *b* with a right-hand thread, and at their other ends with the part *b'* with a left-hand thread. In such case turning the screws in the proper direction would forcibly separate the parts *b b'* and hold them in a fixed position. In the construction shown, loosening the screws will permit the rope to hold the pieces apart practically without friction. It may, however, be desirable, on account of greater cheapness of manufacture—as, for instance, where the device is of cast metal—to make the portions *b b' c* integral with one another, and pivot the part *c* thereto, as shown in Fig. 5.

I do not consider it material to my invention whether but one of the parts of the compressible or brake handle is pivoted to the incompressible handle, or both parts are so pivoted.

Preferably straps are attached to the device to assist in supporting the body of the operator. I have shown in Fig. 1 two straps—one, E, to pass beneath the arms and around the body of the user, and the other, F, to pass beneath the thighs.

The handle B is provided with ears *b²*, in which are inserted pins G, for the attachment of the straps; but other preferred means may be employed.

The above-described device is from its construction very light, conveniently packed, and portable, and with the small rope which I have found sufficient (five-sixteenths of an inch) may be carried in the valise of any traveler.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The herein-described device for descending a fixed rope, consisting of the combination of two handles, both constructed to surround the rope, and having a straight passage-way from end to end for the same, one of said handles being incompressible and of a form adapting it to be firmly grasped without arresting the passage of the rope, and the other made in part of a movable portion adapted to compress

the rope under the grasp of the operator and act as a brake, substantially as set forth.

2. The herein-described device, consisting of the combination of the incompressible hollow handle B, adapted to surround the rope, the part *c³*, rigid therewith, and the part *c*, movably connected therewith, said parts *c³* and *c* forming the compressible handle C, also adapted to surround the rope, substantially as set forth.

3. The herein-described device, consisting of the combination of the two metallic castings B *c³* and *c*, pivoted together, and forming the hollow incompressible handle B and the hollow compressible handle C, substantially as set forth.

4. The herein-described device, consisting of the combination of the three metallic castings *b c³*, *b'*, and *c*, connected by bolts or rivets D and pivot *c²*, and forming the handles B and C, substantially as set forth.

5. The herein-described device, consisting of the combination of the hollow handle B, made in two parts, *b b'*, adjustably connected with one another, and the hollow handle C, having one portion attached to the part *b* and the other portion movably connected with the part *b'*, whereby it may act as a brake to hold the rope, substantially as set forth.

6. The herein-described device, consisting of the combination of the incompressible handle B, the brake-handle C, made in two parts, between which the rope is adapted to be held, one part being rigid with the handle B and the other pivoted thereto, and means for adjusting the said pivot of one part toward or from the other part, substantially as set forth.

7. The herein-described device, consisting of the combination, with the part B, surrounding the rope, and adapted to support the weight of the operator, of the brake *c c³*, having the cone-shaped throat *c⁴*, for grasping the rope, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. CHESNUT.

Witnesses:

J. CLINTON HILL,
E. M. HILL.