

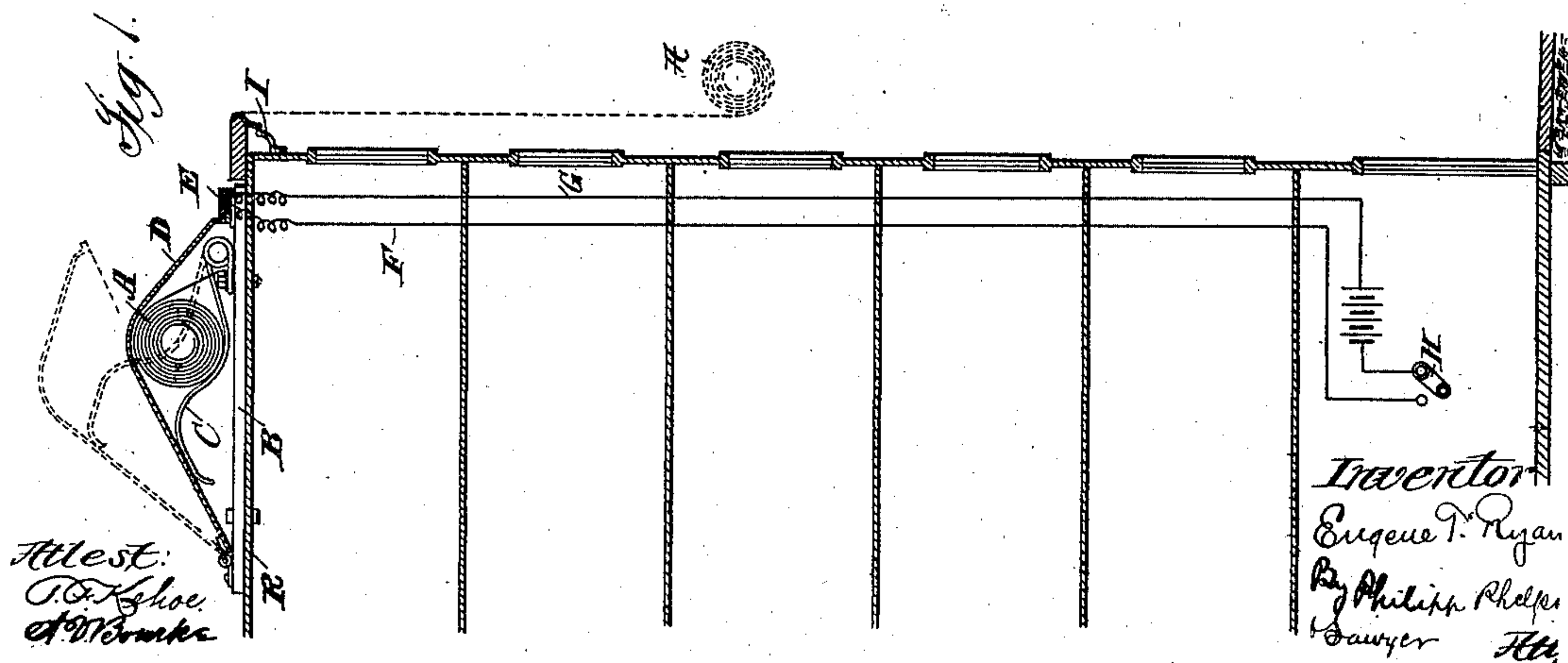
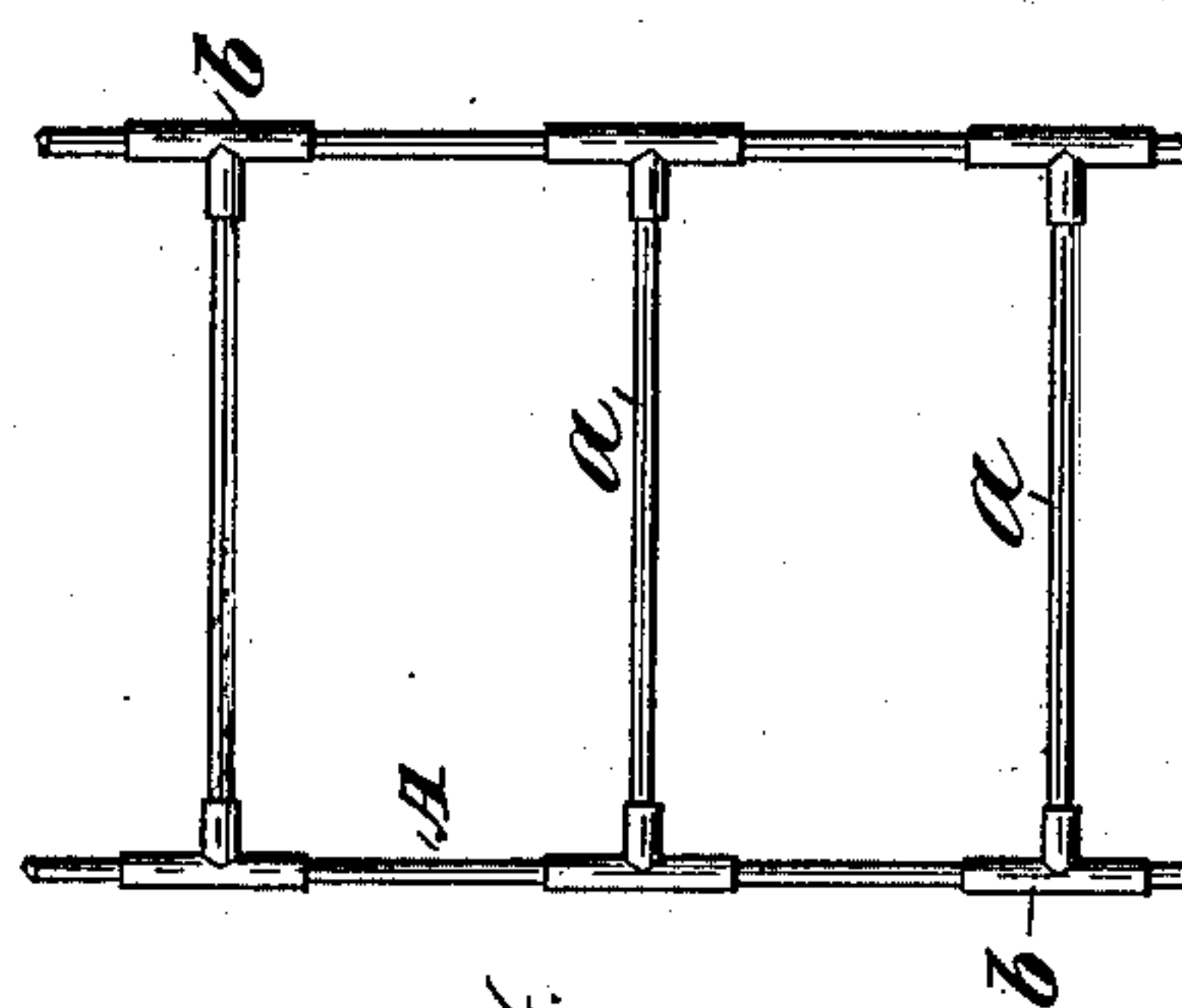
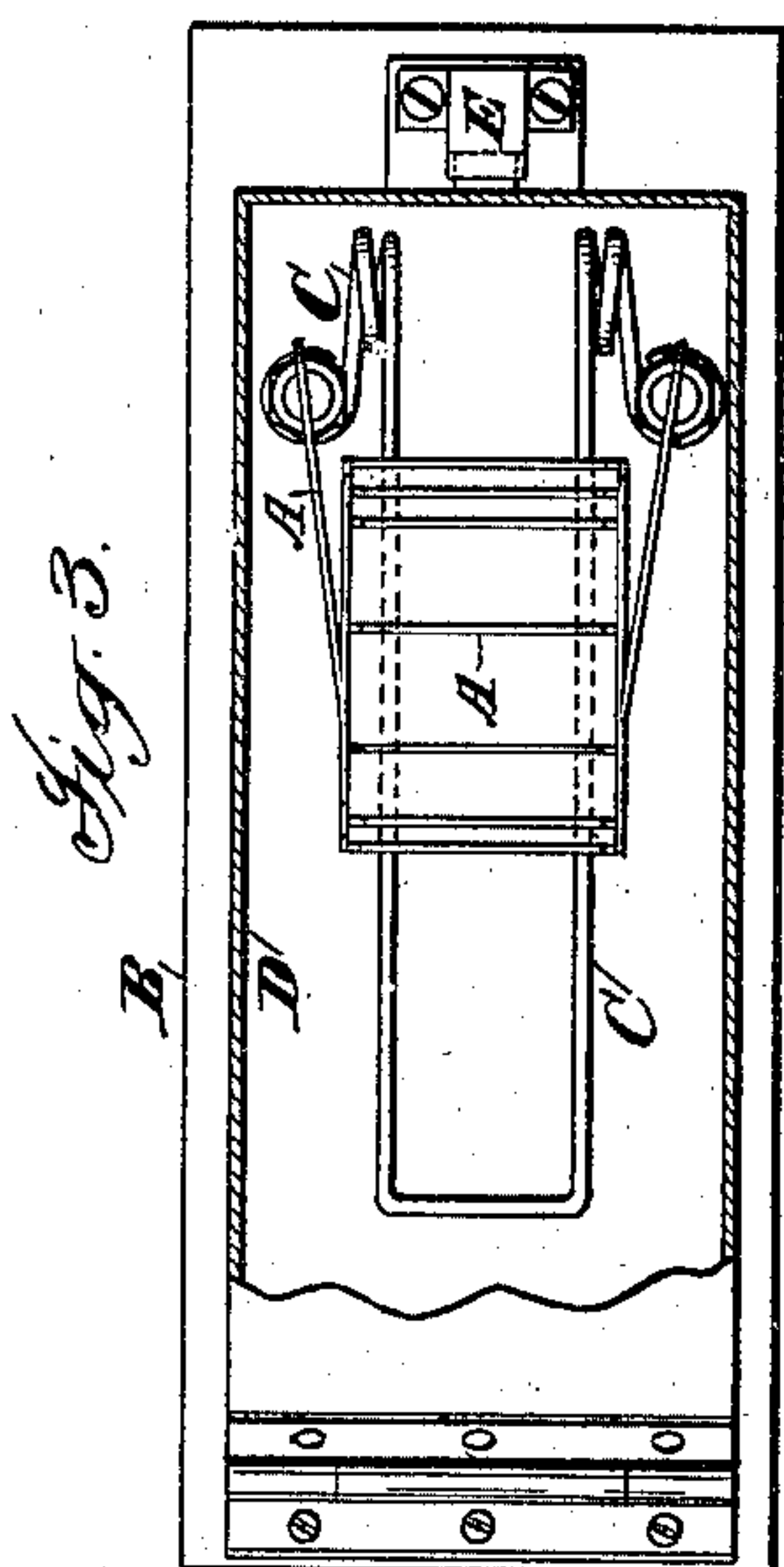
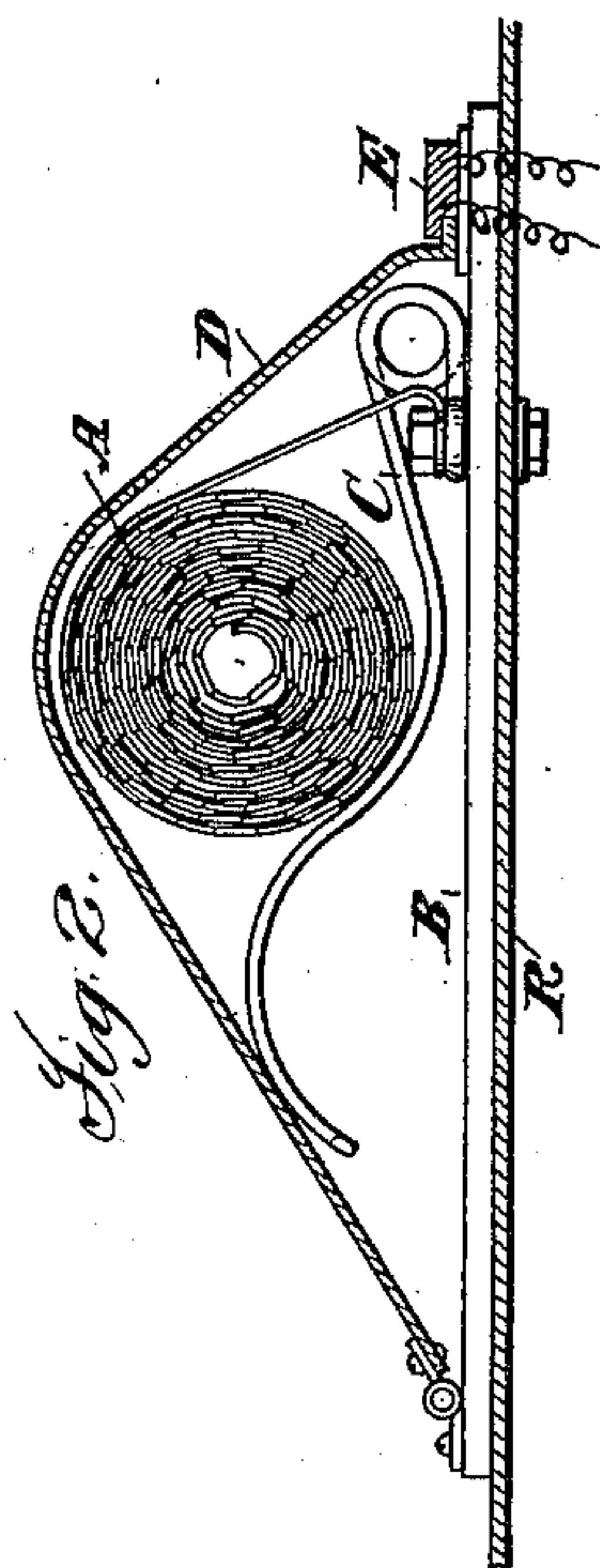
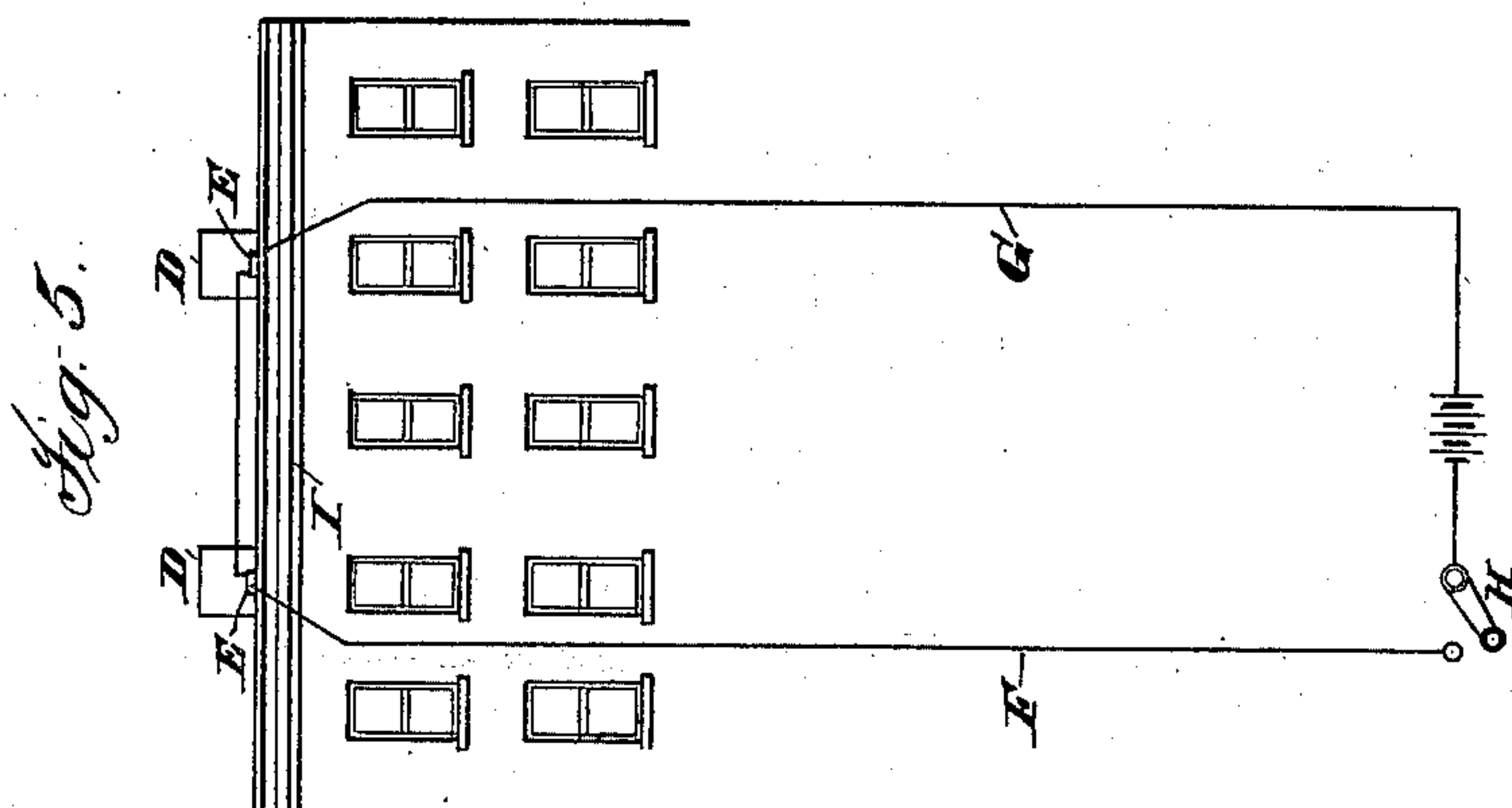
No. 654,359.

Patented July 24, 1900.

E. T. RYAN.  
FIRE ESCAPE.

(Application filed May 17, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 654,359, dated July 24, 1900.

Application filed May 17, 1899. Serial No. 717,130. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE T. RYAN, a citizen of the United States, residing at New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Fire-Escapes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to improvements in fire-escapes, it being the object of the present invention to provide a simple and efficient fire-escape which is controllable from a distant point and operated in such way as to insure the delivery quickly of the fire-escape in proper position for use in case of fire.

15 In the accompanying drawings, Figure 1 is a vertical section of a building the roof of which is equipped with fire-escape apparatus embodying the present invention in its preferred form, such apparatus including a flexible ladder, means for retaining it in its folded or coiled condition, and connections for releasing it. Fig. 2 is a detail in section, on an enlarged scale, of the fire-escape apparatus. Fig. 3 is a plan view of the same. Fig. 4 is a front elevation of a portion of the ladder; and Fig. 5 is a front view of a building equipped with a number of the fire-escapes of the preceding figures, with connections for simultaneously releasing them.

20 Referring to said drawings, A represents the fire-escape proper; B, the base-board on which it is mounted; C, a spring for propelling the fire-escape or ladder A forward to the edge of a roof or wall, over which it falls into position for use, while D represents a movable hood which in its closed position compresses the propelling-spring C and which is held normally in such closed position by a lock E.

25 The fire-escape or ladder A is secured at one end to the forward end of the base-board B and when not in use is coiled or folded up, as shown, and rests upon the propelling-spring C, which is preferably formed, as shown, with side arms for engaging the coiled or folded ladder near its side edges, said side arms being also curved downwardly, as shown, so as to retain the folded or coiled up ladder in proper position longitudinally of the spring C. By reason of this construction and ar-

30 rangement of the side arms of the spring the latter forms in effect a cradle on which the coiled or folded ladder will be evenly balanced and which when released will propel the ladder forward in a straight line. The spring C may act to propel the ladder either by slowly inclining itself, so that the ladder will simply roll down the same, or by abruptly assuming such inclined position, so as to throw or shoot it forward, the ladder in either event being automatically delivered to position for use. The hood D is hinged at the rear end of the base-board B and is provided with a top and sides, so as to completely inclose the ladder and spring, and thus protect them from dust and dirt and from being tampered with by unauthorized persons, and also in case the apparatus be located, as it will preferably be, on the roof R of the building, as shown, protect these parts from the elements. The hood D is held in its closed position, as before stated, and the spring C therefore held under tension by a lock E, which may be of any desired construction capable of control by any suitable mechanism, so as to be released from a distant point, but is preferably a block of fusible metal included in an electric circuit F G, running down through the building and provided at some convenient inside or outside point—as, for example, the office or main hall of a hotel or other building or a suitable signal-box in the street—with a circuit-closer H. Preferably each building will be provided with a number of these apparatus, and in such case a single circuit will be provided for simultaneously releasing all, as shown in Fig. 5.

35 As before stated, the fire-escape apparatus of the present invention will preferably be located on the roof of the building in rear of the projecting cornice I, as shown, so as to be out of view when not in use and so that the fire-escape or ladder A when extended will be supported by the cornice and thus held away from the face of the wall a suitable distance to enable the user to secure a good hold on the ladder with his hands and feet and to descend rapidly and without injury from the wall, the ladder at the same time being held sufficiently close to the wall to be within convenient reach of the occupants of the building standing upon the window-sills. Each



fire-escape apparatus, moreover, will preferably be arranged in line with a tier of windows, so that it will fall directly in front of such windows.

5 The ladder A is preferably of the construction shown in Fig. 4—that is to say, with side rods or bars of wire rope and steps *a* of suitable rigid metal, preferably tubular, which are connected to the side bars or rods by  
10 means of T-shaped tubes *b*, provided with threaded openings for receiving the correspondingly-threaded ends of the steps *a*, the rigid steps being employed so as to keep the side bars separated under the weight of the  
15 person descending the ladder.

The manner of using the apparatus is as follows: As the parts are shown by full lines in the several figures they are in their normal positions, each ladder being coiled or folded  
20 up within its hood D, which is held closed by lock E, the spring C being in turn held under tension by the hood D. In case of fire all that is necessary to be done to bring the fire-escape, or fire-escapes if there be more than  
25 one, into position is to close the circuit through F G by closing the circuit-closer H at the office or other point inside or outside of the building. With the circuit thus closed the lock or locks E will speedily melt, thus  
30 releasing the hood D, which in turn releases the spring C, which throws the hood backward and assumes an inclined position, thus causing the coiled or folded ladder A to move or be thrown over the edge of the cornice I  
35 and then to extend itself and descend, all as shown by dotted lines in Fig. 1. The ladder A will of course be of such length that its free end will approach the sidewalk closely, so that it may be seized, if necessary, by fire-  
40 men or others for the purpose of steadying it while the occupants of the building are descending or firemen or others are ascending to the assistance of the occupants or for any other purpose.

45 The construction shown and described illustrates the several features of the present invention in their preferred forms, and modifications or changes may be made therein, if desired, without departing from the invention.  
50

What is claimed is—

1. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or  
55 coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, releasable means for retaining it in its position of non-use, and a propelling-spring for initiating its movement to position for use, substantially as described.  
60

2. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or  
65 coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, electric-

ally-controllable means for retaining it in its position of non-use, and a propelling-spring for initiating its movement to position for  
70 use, substantially as described.

3. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatic-  
75 ally delivered into position for use, in combination with means comprising a lock of fusible metal for retaining it in its position of non-use, electrically controllable from a distant point for its release, substantially as de-  
80 scribed.

4. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or  
85 coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, releasable means for retaining it in its position of non-use, and a spring-support for the folded or coiled fire-escape also adapted to initiate  
90 its movement to position for use, substantially as described.

5. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or  
95 coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, electrically-controllable means for retaining it in its position of non-use, and a spring-support for  
100 the folded or coiled fire-escape also adapted to initiate its movement to position for use, substantially as described.

6. A flexible fire-escape for attachment to the upper part of a building, adapted to be  
105 folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with means comprising a lock of fusible metal electrically controllable from a  
110 distant point for its release, and a spring for propelling it when released toward its position for use, substantially as described.

7. The combination with a fixed support, of a flexible fire-escape secured at one end to  
115 said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a movable hood extending over the fire-escape and  
120 adapted when closed to retain it in its position of non-use, releasable means for retaining the hood in such position, and a spring for moving the hood from retaining position when thus released, substantially as described.  
125

8. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or  
130 coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, electrically-controllable means for



retaining the hood in such position, and a spring for moving the hood from retaining position when thus released, substantially as described.

5 9. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with a movable hood extending over and adapted when closed to retain the fire-escape in its position of non-use, means comprising a lock of fusible metal for retaining the hood in such position, electrically controllable from a distant point for its release, and a spring for moving the hood from retaining position when thus released, substantially as described.

10. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a rearwardly-movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, releasable means for retaining the hood in such position, and a forwardly-moving spring put under tension by the hood and adapted to throw the latter open and to initiate the movement of the fire-escape, substantially as described.

11. The combination with a fixed support, of a flexible fire-escape secured at one end to said support and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a rearwardly-movable hood extending over the fire-escape and adapted when closed to retain it in its position of non-use, electrically-controllable means for retaining the hood in such position, and a forwardly-moving spring put under tension by the hood and adapted to throw the latter open and to initiate the movement of the fire-escape, substantially as described.

12. A flexible fire-escape for attachment to the upper part of a building, adapted to be folded or coiled up and held in a position of non-use and when released to be automatically delivered into position for use, in combination with a spring for propelling it toward the latter position, a movable hood extending over the fire-escape and spring and adapted when closed to retain the former in its position of non-use and the latter under tension, and means comprising a lock of fusible metal for retaining the hood in its closed position, electrically controllable from a distant point for its release, substantially as described.

13. A fire-escape apparatus comprising a suitable support, a flexible ladder A, fast at one end and coiled or folded upon itself at the other, forwardly-moving propelling-spring C, rearwardly-moving hinged hood D, and a

lock engaging the cover, substantially as described.

14. A fire-escape apparatus comprising a suitable support, a flexible ladder A, propelling-spring C, hinged hood D, and a lock E of fusible metal for engaging the hood, substantially as described.

15. A fire-escape apparatus comprising a support, a flexible ladder A, fast at one end and coiled or folded upon itself at the other, a spring for propelling the ladder forward, a hinged hood D adapted to be thrown in the opposite direction by the propelling-spring, and a lock engaging the hood, substantially as described.

16. A fire-escape apparatus comprising a support, a flexible ladder A, a spring for propelling the ladder forward, a hinged hood D adapted to be thrown backward by the propelling-spring, and a lock E of fusible metal for engaging the hood, substantially as described.

17. In a building, the combination of a flexible fire-escape secured at one end to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at its other end and held in a position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, and means for propelling the fire-escape toward the cornice or the like.

18. In a building, the combination of a flexible fire-escape secured to the upper part thereof and adapted to be coiled or folded up thereon and held in a position of non-use and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, and a lock of fusible metal for retaining the fire-escape in its position of non-use, controlled by said circuit to release the fire-escape, substantially as described.

19. In a building, the combination of a flexible fire-escape secured at one end to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at its other end and held in position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, and a spring for propelling the fire-escape toward the cornice or the like.

20. In a building, the combination of a plurality of flexible fire-escapes secured to the upper part thereof and each adapted to be coiled or folded up thereon and held in position of non-use and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, and a lock of fusible metal for each fire-escape for retaining it in its position of non-use, the several locks being controlled by said circuit to simultaneously release the several fire-escapes, substantially as described.



21. In a building, the combination of a flexible fire-escape secured at one end to the upper part thereof in rear of a cornice or the like and adapted to be folded or coiled up at  
5 its other end and held in position of non-use and when released to unfold or uncoil itself into position for use, a lock for retaining the fire-escape in its position of non-use, an electric circuit leading from a distant point controlling the lock, a spring for propelling the  
10 fire-escape toward the cornice or the like, and a hood extending over the fire-escape and spring and retained in closed position by the lock and opened by said spring when released.
22. In a building, the combination of a flexible fire-escape secured to the upper part  
15 thereof and adapted to be coiled or folded up thereon and held in a position of non-use

and when released to be automatically delivered to position for use, an electric circuit leading to the lower part of the building, a lock of fusible metal for retaining the fire-escape in its position of non-use, controlled by said circuit to release the fire-escape, a propelling-spring for the fire-escape, and a hood extending over the fire-escape  
25 and spring and retained in closed position by said lock and opened by said spring when released, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EUGENE T. RYAN.

Witnesses:

A. A. V. BOURKE,  
T. F. KEHOE.