No. 608,419. Patented Aug. 2, 1898.

S. P. BUCK & C. L. MEAKER.

FIRE ESCAPE.

(Application filed Mar. 23, 1896.)

(No Model.)

Fig. 1.

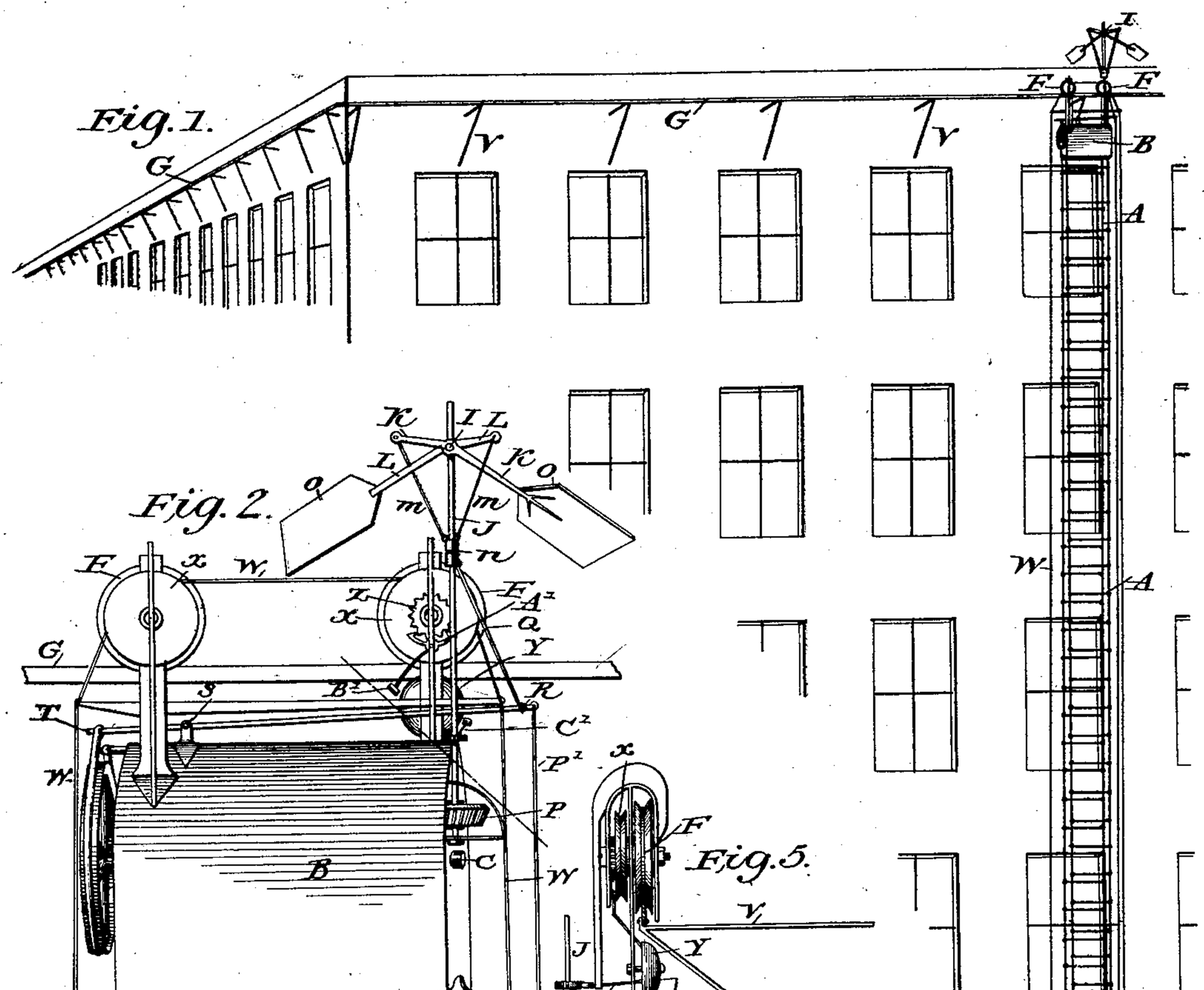


Fig. 2.

Fig. 5.

Fig. 3.

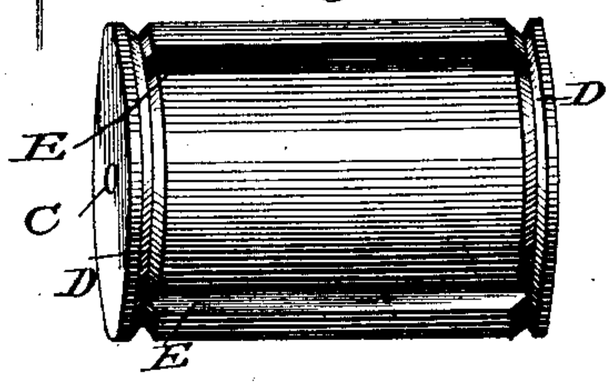


Fig. 6.

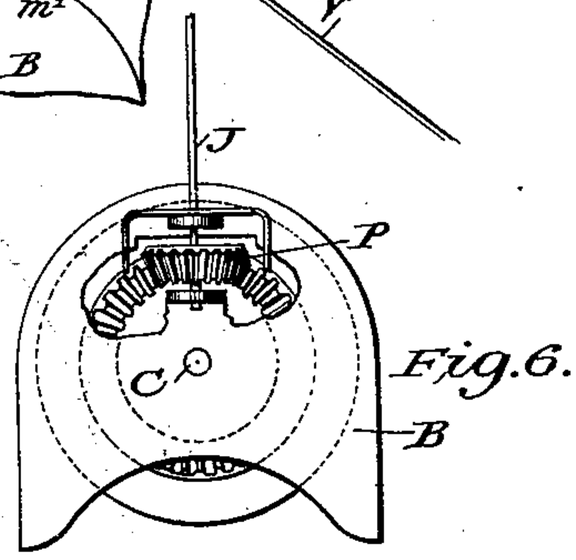


Fig. 4.

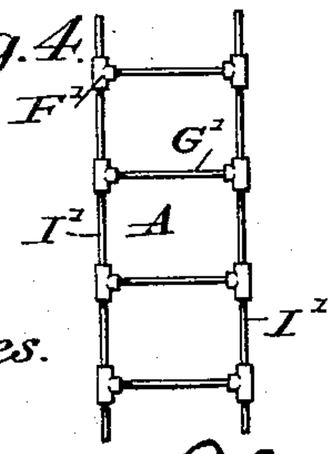
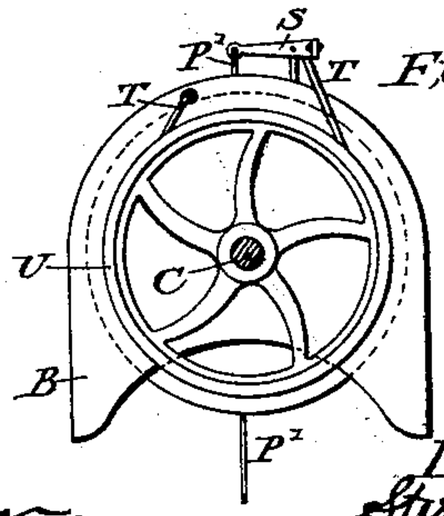


Fig. 7.



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UNITED STATES PATENT OFFICE.

STERLING P. BUCK AND CHARLES L. MEAKER, OF ABILENE, TEXAS; SAID MEAKER ASSIGNOR TO WILLIAM R. BUCK, OF FRONT ROYAL, VIRGINIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 608,419, dated August 2, 1898.

Application filed March 23, 1896. Serial No. 584,575. (No model.)

To all whom it may concern:

Be it known that we, STERLING P. BUCK and CHARLES L. MEAKER, citizens of the United States, residing at Abilene, in the county of Taylor and State of Texas, have invented a new and useful Fire-Escape, of which the following is a specification.

Our invention relates to improvements in fire-escapes for saving the lives of persons who are endangered by burning buildings; and the objects of our improvements are to provide, first, a means of rapid descent from tall buildings; second, a means of descent not sufficiently rapid to endanger life or limbs; third, an appliance that is always in readiness; fourth, that is applicable to every floor of a building at the same time; fifth, that may be transferred from any side, end, or corner of a building to any other side, end, or corner; sixth, the transportation of which may be done by one person in a very short space of duration; seventh, on which from one to twenty (or more) persons may descend at once with equal safety; eighth, a fire-escape which is also a fire-alarm; ninth, a fire-escape which is also a scaling-ladder for firemen; tenth, which is also a hose-hoist for firemen; eleventh, which is fireproof and weatherproof; twelfth, which is simple, economical, and ornamental. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a building with a complete fire-escape attached and ready for service. Fig. 2 is an enlarged view of the part designated by B in Fig. 1. Fig. 3 is a hollow drum or cylinder which revolves inside of B in Fig. 2; Fig. 4, a section of endless ladder *a* in Fig. 1; Fig. 5, a detail view taken from the extreme right-hand corner of B, above the line *x w*, in Fig. 2. Fig. 6 is a view of right-hand end of B; Fig. 7, a left-hand end view of B.

Similar letters refer to similar parts throughout the several views.

In Fig. 1, *a* represents an endless ladder, the sides or parallels of which are of two wire ropes or cables of equal length and diameter, the rungs or rounds being of iron piping firmly secured at both ends to said cables by T-shaped clamps or couplings. (See Fig. 4, in which I' are cables, G' rungs, and F' couplings.) Having first fitted the cables I' of the ladder to the grooves D D in Fig. 3 so that the rungs G' shall lie in the grooves *e e*, Fig. 3, and having next suspended Fig. 3 within B by a shaft through its center at *c*, Fig. 3, the whole is then suspended from a track G, (see Fig. 1,) so that its weight shall rest on trolley-wheels F F. The cylinder H with wide flanges is then to be placed within the hanging ladder at the bottom for the double purpose of steadying the hanging structure and to obviate any collision of the ascending and descending sides of the ladder. Having thus been suspended, it is ready for service, and those wishing to descend may reach from windows and, laying hold of one rung and standing on another, may descend to the ground, their weight being the motive power. To prevent the speed of descent from becoming too great, a governor I is provided, the same being fitted to governor-rod J, on the lower end of which is fitted a bevel-pinion P, gearing into the teeth of bevel-gear on one end of drum, Fig. 3. (See also Fig. 6.) At the top of the rod J is attached the governor I, comprising the two arms K L, pivoted at I, the two rods M M, attached to K L at the upper end and to a sleeve N at the lower, and two fans *o o* on the ends of K L. As a person or persons descend the cylinder, Fig. 3, revolves, causing the bevel-pinion P to also revolve, carrying with it the governor I. The fans *o o* being inclined at an angle to the radius of the rod J, and hence at an angle to the wind as they revolve, they are forced upward by their action against the wind, aided by centrifugal force. Thus as the speed increases the fans rise higher and force the rods M M downward, imparting to N and hence to R a downward pressure, thus giving a downward pressure by means of a connecting-rod Q to the lever R, which, having S as a fulcrum, imparts an upward lift to the end of a band T, which passes around a wheel U, which is made fast to the cylinder, Fig. 3, by the shaft at *c*, thus connecting the governor with brake-wheel U for regulating the speed of descent.

To provide a means of quick transportation from window to window or from one side or part of a building to another, a track G is at-

tached to the wall of the building near the top, being supported by brackets V, Fig. 1, which are anchored into the wall and hold said track firmly at a suitable distance from the wall. On this track the trolley-wheels are to rest and travel, being propelled by an endless wire rope *w*, which passes over the grooved pulleys *x x*, which are made fast with the wheels F F, so that by pulling down on the right or left side of the rope *w* the hanging structure is moved, respectively, to the right or left.

For use as a scaling-ladder a wire P′ is attached to the end of the brake-lever R, so that it may be reached and governed by firemen or others on the ground. By pulling down on said wire P′ the brake is drawn on wheel W, thus rendering the ladder stationary so long as the brake is drawn. Persons may then climb to the top, using it as an ordinary ladder.

For use as a hose-hoist the hose is attached to one side of ladder, say the ascending side, and the other side pulled down; or, what is better, let several persons climb to top of descending side and, the hose being attached to the ascending side, then turn loose the brake, and the weight of the persons will cause their side to desend and the other to ascend, carrying with it the hose, where others may be waiting to receive it.

For service as a fire-alarm a bell Y is used. A notched wheel Z forms part of *x*. Into the notches of Z an escapement A′ oscillates, falling alternately into the notches in Z, causing a clapper B′ to vibrate and strike the bell Y, so that as the wheels F F traverse the track G the alarm is given. A similar arrangement is employed to sound an alarm by descending on the ladder, as follows: A notched wheel C′ is centered on the shaft J, causing a clapper *m′* to vibrate by the same mechanism described for B′ and both clappers striking the same bell, so that any manipulation of the structure produces an alarm.

We are aware that previous to our invention fire-escapes have been made having an endless ladder revolving over a wheel or wheels and suspended from a track supported by the outer wall of a building. We do not, therefore, broadly claim such a combination as our invention; but

What we do claim, and desire to secure by Letters Patent, is—

In a fire-escape the combination with an endless ladder of an upper cylinder supporting said ladder, a lower cylinder being supported by said ladder, a hanger supporting said upper cylinder, (said hanger also being a weather-shield) two grooved track-wheels supporting said hanger and weather-shield, a track attached to the wall of a building by connecting arms or brackets and arranged for said grooved track-wheels to travel thereon, an endless cable and two grooved pulleys combined for conveying the said track-wheels along the said track, of a large bevel-gear on one end of said top cylinder, a small bevel-gear actuated by said large bevel-gear, a governor-rod through the center of said small bevel-gear, a governor arranged at the top of said governor-rod said governor having fans set at an angle to the axis of said governor-rod, of a brake-wheel on the shaft of upper cylinder opposite to said large bevel-gear, a brake-band encircling said brake-wheel, a brake-lever (one end of which is attached to said brake-band and the other connected to the said governor), of a bell attached to one of the arms of said hanger, a clapper actuated by the escapement-wheel on said governor-rod to strike said bell, another clapper actuated by the escapement-wheel on one of the said grooved track-wheels to strike said bell, all substantially as specified for the purposes stated.

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