J. A. SCHULTZ.

FIRE-ESCAPES.

No. 194,471. Patented Aug. 21, 1877.

Fig. 1.

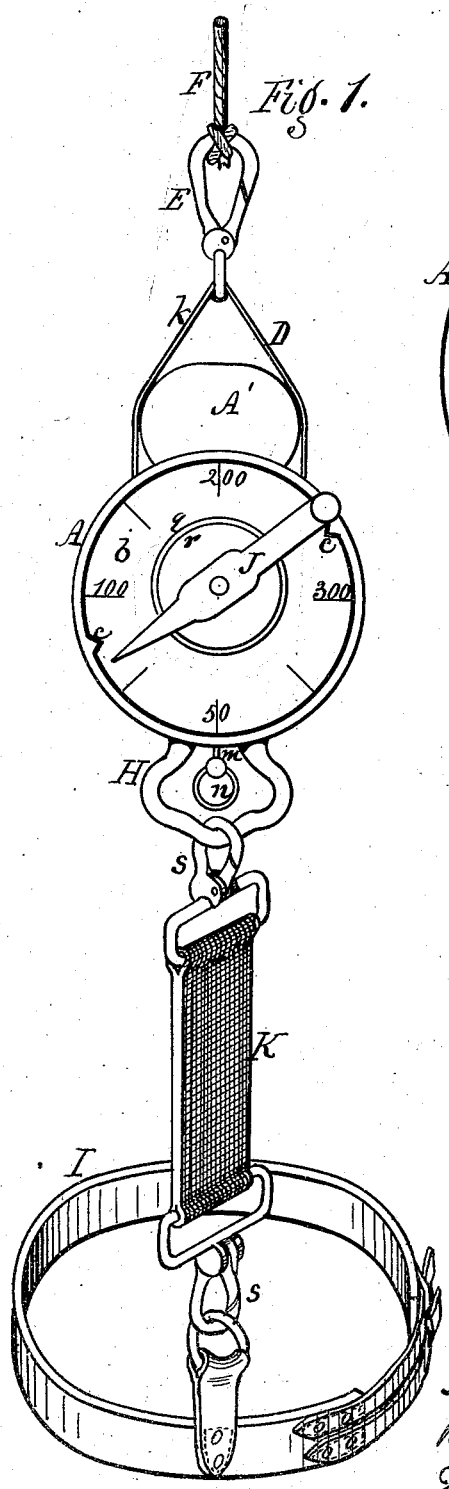


Fig. 2.

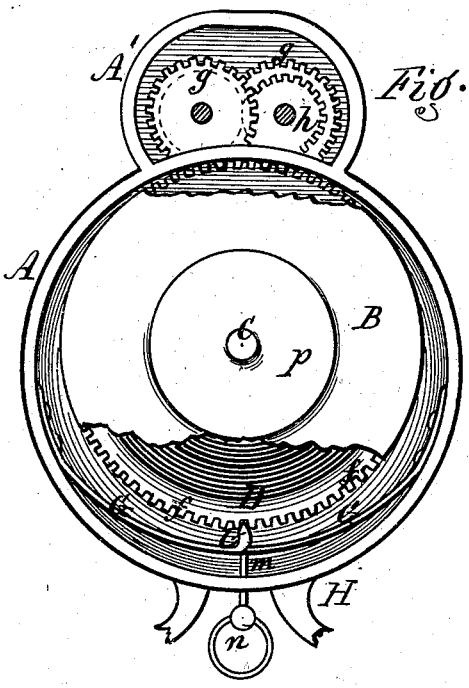
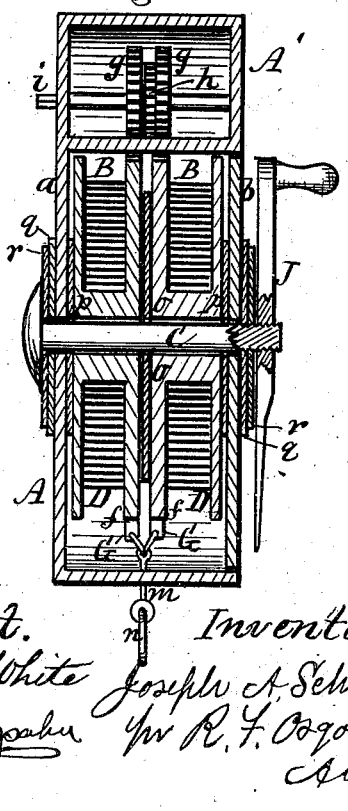


Fig. 3.



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IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **194,471**, dated August 21, 1877; application filed May 18, 1877.

To all whom it may concern:

Be it known that I, JOSEPH A. SCHULTZ, of Batavia, in the county of Genesee and State of New York, have invented a certain new and useful Improvement in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, in which—

Figure 1 is an elevation of the device. Fig. 2 is a similar view on an enlarged scale, but showing the outer plate removed to exhibit the interior arrangement. Fig. 3 is a vertical cross-section.

My improvement relates to a fire-escape, which is attached within the room, and lowered from the window.

The invention consists of a device constructed, arranged, and operating as hereinafter more fully described, and definitely claimed.

A represents a circular case, made of iron, having a solid back, *a*, but a removable front plate, *b*, which fits within the rim of the case, and is kept from turning by means of V-shaped lugs *c c*, which fit in corresponding notches of the rim. B B are two pulleys lying side by side within the case, made of iron, brass, or other suitable metal. They rest and turn upon a headed bolt, C, which passes transversely through the case, the end of the bolt being cut with a thread, upon which screws a lever, J. Each of the pulleys has two flanges inclosing a winding space for the metallic strap, and on the inner rim of each is cut a spur-gear, *f*. *g g* are two spur-pinions engaging, respectively, with the gears *f f*. *h h* are two other spur-pinions on the same shafts as *g g*, and engaging together. By this means motion is transferred from one set of pinions to the other. The shaft of one set of pinions projects out through the case, and is squared to form a bearing, *i*, for a key or wrench, by which the gearing is turned from the outside to wind up the metallic strap. The pinions rest in a compartment, A′, on top of the main case, and this compartment may have a door, by which the gears can be reached.

D is the metallic strap which winds upon the pulleys. It is simply a band of thin metal in a single length, the ends attached to the respective pulleys, while the center loop *k*, which passes up through holes in the opposite sides of the case, is connected with a snap-hook, E, or other device, attached to the cord F, which is suspended from the window. The metallic strap, being very thin and light, can be wound in a great length upon the pulleys without making the case large or cumbersome.

G G are two spring-pawls located in the lower part of the case A, beneath the pulleys B B. They are located one beneath the other, and the points *l l*, which form the pawls proper, engage with the gears *f f*, which prevents said gears from rotating. *m* is a wire connected with both pawls, extending out through the bottom of the case, and having a ring, *n*, attached thereto. By drawing said ring downward the pawls will be drawn from engagement with the gears, and the pulleys can then rotate.

o is a center disk or washer, of copper, placed upon the bolt C, between the two pulleys. *p p* are two washers of lead, located, respectively, between the outsides of the pulleys and the sides of the case. *q q* and *r r* are washers of rubber and iron, located in pairs on opposite sides, resting between the outside of the case and the head of the bolt, and the lever, as clearly shown in Fig. 3.

By means of the elasticity and compressibility of these washers, when the lever J is turned up on the threaded end of bolt C, a clamping or brake action is produced on the two pulleys, by reason of the yielding of the movable head *b* of the case. Therefore, the running down of the strap under strain can be graduated or governed exactly as desired, either under heavy or light weight, by turning the lever J more or less, thereby varying the clamping action.

The head *b* may be provided with a scale of figures, and the lever may be made in the form of a pointer, as shown in Fig. 1, by which the clamping-power may be indicated as compared with the weight it will sustain.

H is a handle or loop made fast to the bottom of the case. I is a strap, provided with buckles, for the purpose of attaching around the body of the person who descends. This

body-strap is connected with the loop H by a spring, K, of any desired kind, attached by snap-hooks *s s*, or equivalent. These parts are so located that the hand of the operator, in descending, will come within reach of the lever J.

The operation is as follows: The person secures the strap I around his waist and lowers himself from the window. With one hand he holds the ring *n*, and with the other the lever J. By drawing upon the ring the pulleys are released and allowed to revolve to let out the metallic strap. By turning the lever more or less, as he descends, the motion can be regulated as desired. If he desires to stop opposite the lower windows, or at any point downward, the motion can be arrested by releasing the ring.

Several persons can go down at once by turning the lever J sufficiently to produce the desired brake-action.

The spring K prevents shock from any sudden stoppage.

Where it is desired to lower one or more persons by an operator, the device is reversed from the position shown in Fig. 1, the handle H being connected with the cord F, and the strap D projecting downward. In that case the device remains stationary while the strap runs downward. In such case the load is attached to the end of the strap, while the operator suspends himself, by the body-strap before described, from the hook E, and controls the descending movement, as before described.

Sick persons, women, and children can be safely lowered from high windows by the use of this apparatus.

Having thus described my invention, what I claim herein as new is—

1. In a fire-escape, the combination of the two pulleys B B, lying side by side in the case A, the gears *g g h h* connecting the said pulleys, and the single strap D, winding upon the pulleys, as shown and described, and for the purpose specified.

2. In a fire-escape, the combination, with the two pulleys B B resting upon the bolt C, of the several washers *o p q r*, the loose head or disk *b* of the case, and the lever J, capable of turning upon the threaded end of the bolt to produce the clamping action, as shown and described, and for the purpose specified.

3. In a fire-escape, the combination, with the geared pulleys B B, of the spring-pawls G G, engaging with the said pulleys, and the connection *m* and ring *n*, extending outside of the case, as shown and described, and for the purpose specified.

4. In a fire-escape, the combination, with the handle or loop H, of the body-strap I, with a spring-connection, K, connecting the strap with the handle, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOS. A. SCHULTZ.

Witnesses:
R. F. OSGOOD,
JACOB SPAHN.