2 Sheets—Sheet 1.

F. HOLTHAUSEN.

FIRE-ESCAPE.

No. 181,577. Patented Aug. 29, 1876.

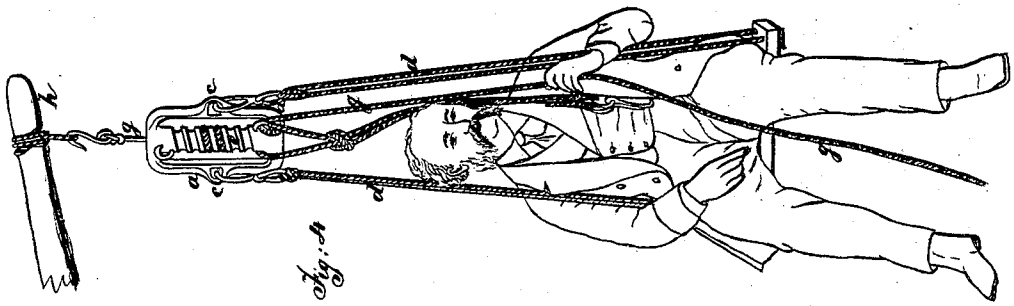

Fig. 4.

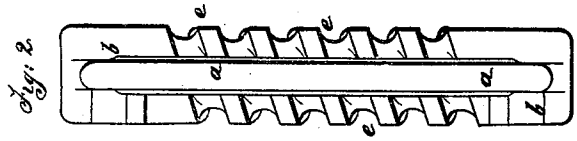

Fig. 2.

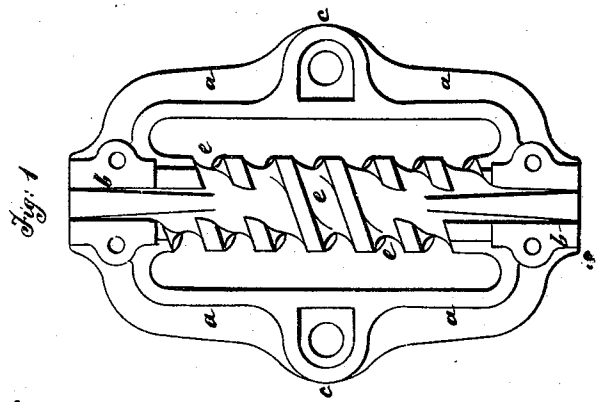

Fig. 1.

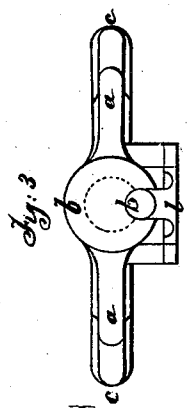

Fig. 3.

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Inventor:

F. Holthausen

by his attorney

D. V. Briesen

2 Sheets—Sheet 2.

F. HOLTHAUSEN.

FIRE-ESCAPE.

No. 181,577. Patented Aug. 29, 1876.

Fig. 9

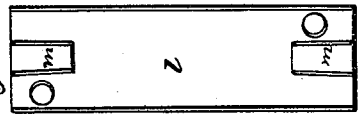


Fig. 8

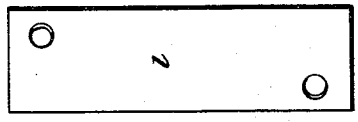


Fig. 10

Fig. 6

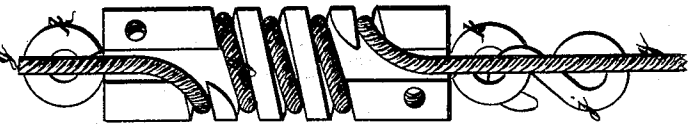


Fig. 5

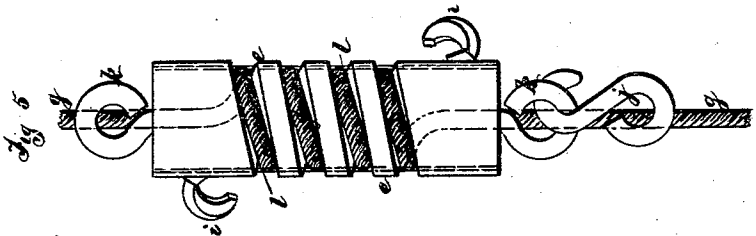
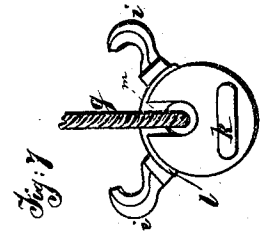


Fig. 7



Witnesses:
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D. Briesen

Inventor:
F. Holthausen
by his attorney
A. V. Briesen

UNITED STATES PATENT OFFICE.

FREDERIC HOLTHAUSEN, OF PARIS, FRANCE.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **181,577**, dated August 29, 1876; application filed August 15, 1876.

To all whom it may concern:

Be it known that I, FREDERIC HOLTHAUSEN, of Paris, France, have invented an Improved Safety Lowering Apparatus, of which the following is a specification:

This invention relates to an improved safety lowering apparatus, which is more particularly intended for use in case of fires in buildings, to enable the occupants of the upper stories to effect a descent with the requisite rapidity, and without any of the inconvenience attending the use of ladders, or similar safety apparatus.

The invention consists of a spirally-grooved block, around which part of a rope, by which the descent is to be effected, is wound, in connection with a guard-plate and suspending devices, and of other details hereinafter described.

In the accompanying drawing, Figure 1 is a front view of my improved apparatus, with the rope removed. Fig. 2 is a side view thereof, showing it without the guard-plate. Fig. 3 is a top view thereof. Fig. 4 shows the apparatus in operation. Figs. 5 and 6 are side views of a modified form of the apparatus. Fig. 7 is a top view of the modification. Figs. 8, 9, and 10 are detail views of the guard-plate.

Similar letters of reference indicate corresponding parts in all the figures.

The letter *e* represents a block of cylindrical or oval form, and made of metal or equivalent material. This block is provided with a spiral groove, which extends around it nearly from one end of the block to the other. The ends of this spiral groove terminate in straight grooves, as is more clearly shown in Fig. 6. *l* is a plate about as long as the block *e*, and concave on the inner side to fit around the block. This plate is attached by screws or otherwise to the block *e*, so as to partly embrace the same. *c c* are eyes or suitable suspending devices applied to arms *a a* at the sides of the block *e*, Figs. 1 to 4. To these eyes are fastened the ends of a rope or chain, *d*, which is to support the person or matter to be lowered. *g* is a rope partly coiled around the block *e*, and placed within the groove of the block, so that it also lies in the two straight portions *b* of such groove. At its upper end the rope *g* is to be fastened to a window-sill, or other secure hold *h* at or above the place from which the descent is to be effected. The lower end of the rope *g* should reach down to the street or yard to which the escape is to be made.

A person who desires to lower himself by means of this apparatus, seats himself in a fold of the rope *d*, Fig. 4, such rope being, if practicable, provided with a suitable seat, as shown. A basket or other receptacle may be substituted for the seat. The block *e* will, by the weight of the person, be caused to slide slowly down along the rope *g*, the friction produced by the coils of the rope around the block *e* preventing a too rapid descent. The person lowering himself may regulate the descent, and even entirely arrest the downward motion by passing the rope *g* around one or more hooks, *i* or *j*, Fig. 5, that are applied to the block *e*. When the apparatus arrives at the bottom of the rope the person dismounts, and it is then simply necessary to reverse the rope *g* if the apparatus is to be used again.

In order to regulate the amount of friction and consequent rapidity of descent, and to adapt the apparatus to the lowering of all objects that differ materially in weight, I prefer to so shape the spiral groove of the block *e* that the rope *g* may be wound around the same a greater or less number of times. This I produce by causing the straight portions *b* of the groove to connect with two or more of the spiral convolutions, so that if the rope is laid within the upper or lowermost convolution, it will wind around the block a greater number of times, and create a greater amount of friction than if not laid within the first one or more upper or lower convolutions.

In place of the arms *a a* and eyes *c c* I may provide the block *e*, at one or both ends, with a link or hook, *k*, for attaching the rope *d* to the apparatus. These links or hooks are shown in Figs. 5, 6, and 7. Instead of making the straight grooves *b* in the block *e* shallow, as in Fig. 3, they may be made deeper, as in Fig. 7, and the guard-plate *l* made with projections *m*, (shown in Fig. 10,) that close such deep grooves, and transform them into cylindrical channels. This construction will facilitate the application of the rope *g* to the

block, the guard-plate *l* being first removed in order to apply the rope.

This apparatus may also be used by painters for painting the fronts of houses, and for similar purposes.

I claim as my invention—

1. The block *e*, grooved spirally on its circumference near its middle portion, and provided with straight grooves *b b* at its ends, substantially as and for the purpose herein shown and described.

2. The combination of the grooved block *e* with the guard-plate *l*, substantially as specified.

3. The combination of the block *e* with the hooks *i*, arms *a*, eyes *c*, and rope *d*, substantially as herein shown and described.

4. The block *e*, made with a spiral groove, and with straight grooves *b b*, the straight grooves extending across several convolutions of the spiral groove, as and for the purpose specified.

FREDERIC HOLTHAUSEN.

Witnesses:
ROBT. M. HOOPER,
FELIX ORETZ.