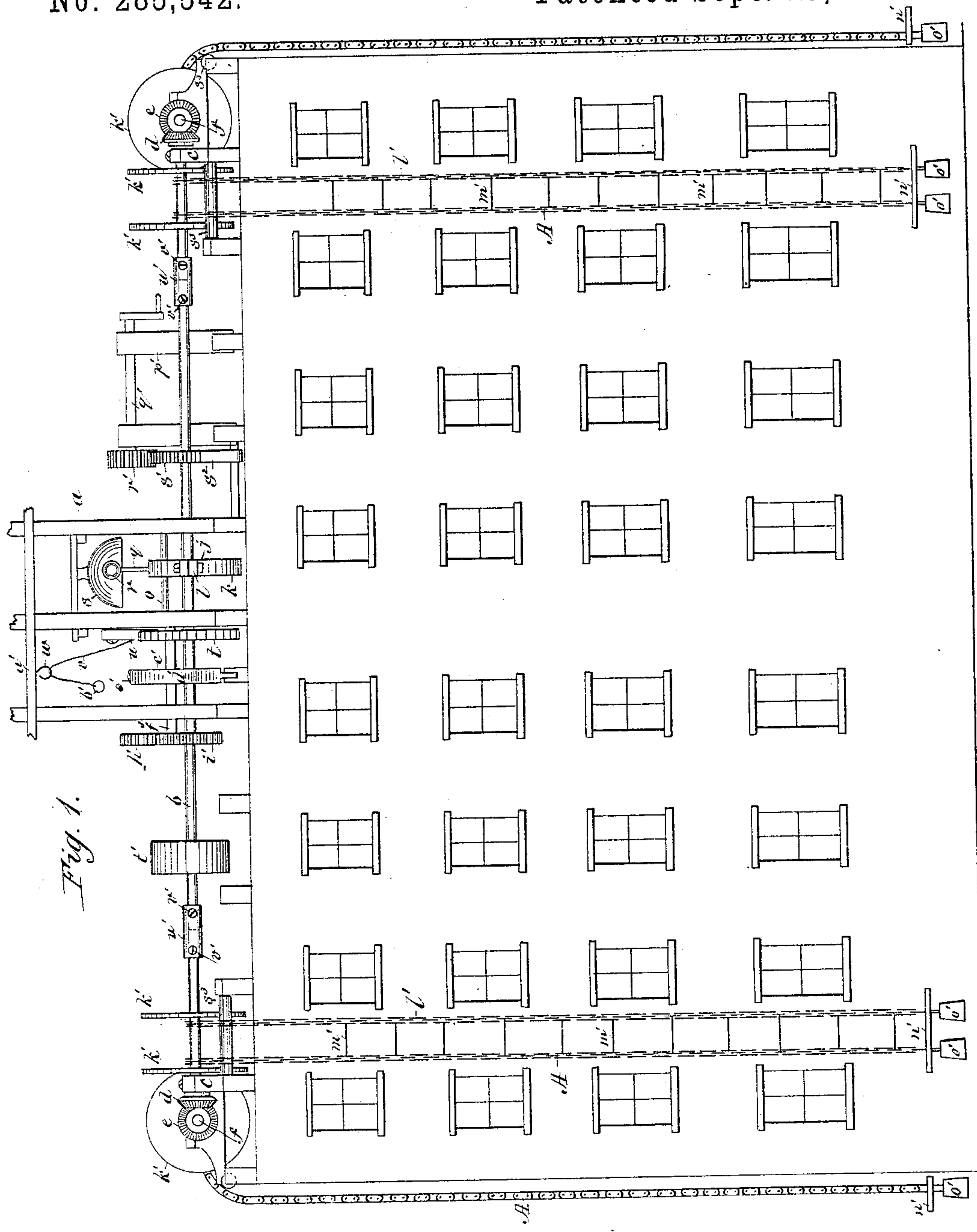


3 Sheets—Sheet 1.

No. 285,542.

Patented Sept. 25, 1883.



John C. Kemmer

W. W. Hollingworth

INVENTOR:
R. E. Andrew

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ATTORNEYS.

(No Model.)

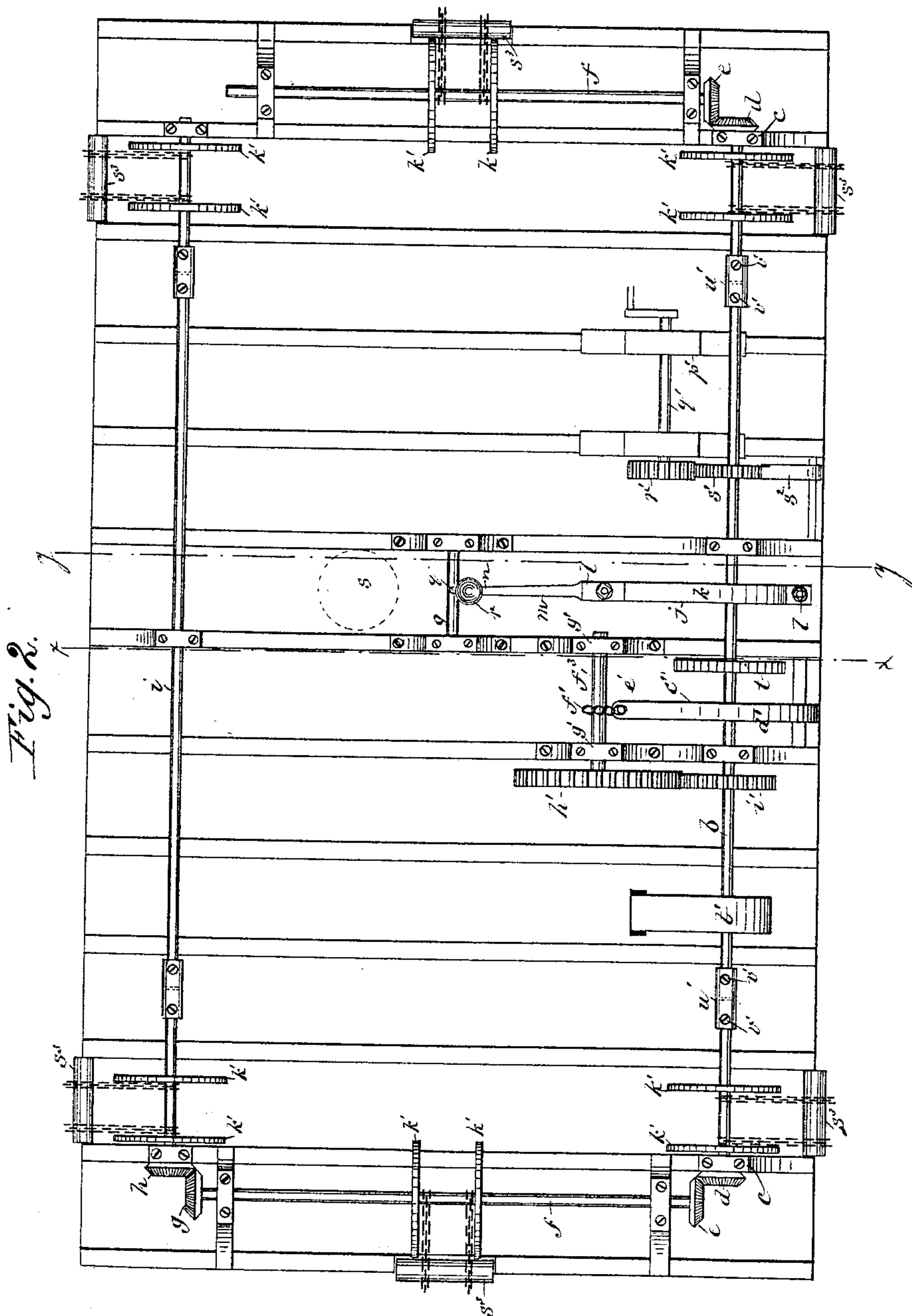
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R. E. ANDREW.

FIRE ESCAPE.

No. 285,542.

Patented Sept. 25, 1883.



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3 Sheets—Sheet 3.

R. E. ANDREW.
FIRE ESCAPE.

No. 285,542.

Patented Sept. 25, 1883.

Fig. 3.

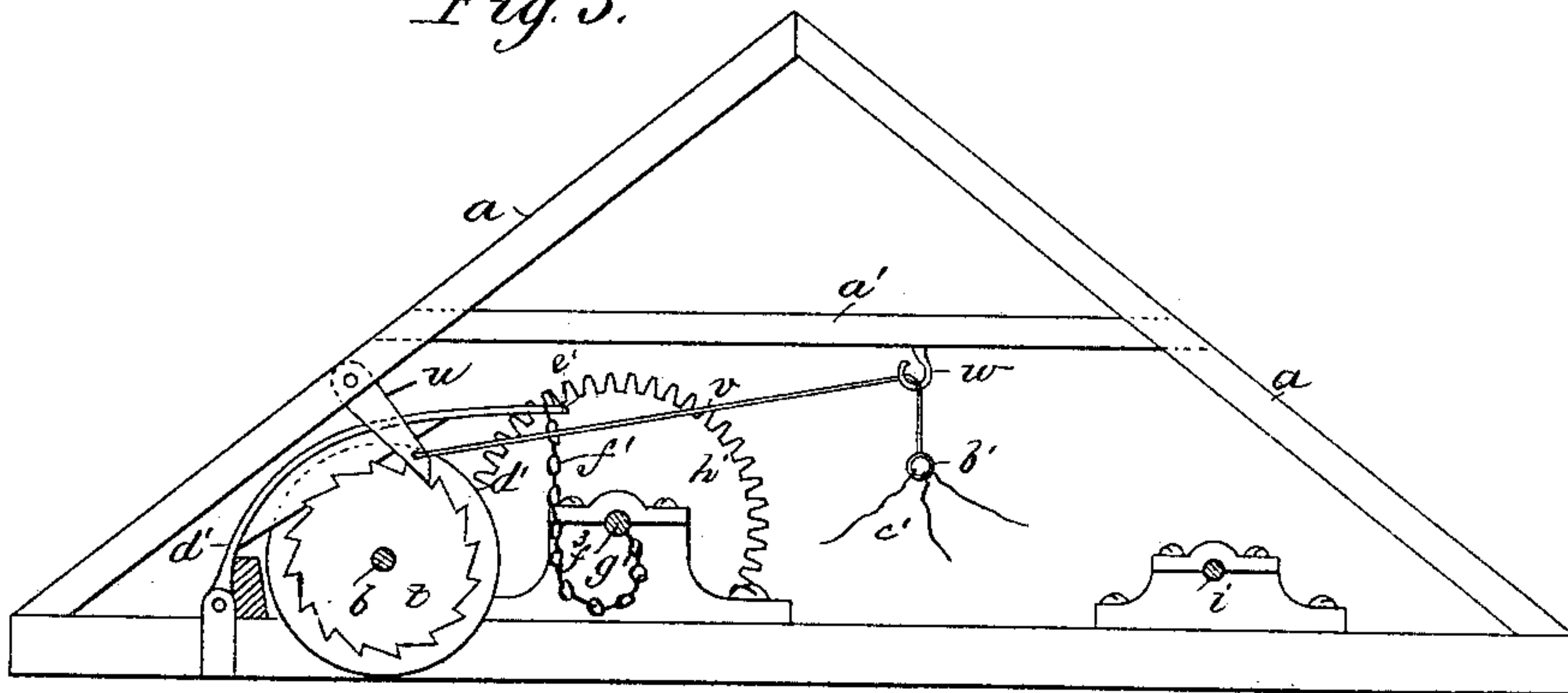


Fig. 4.

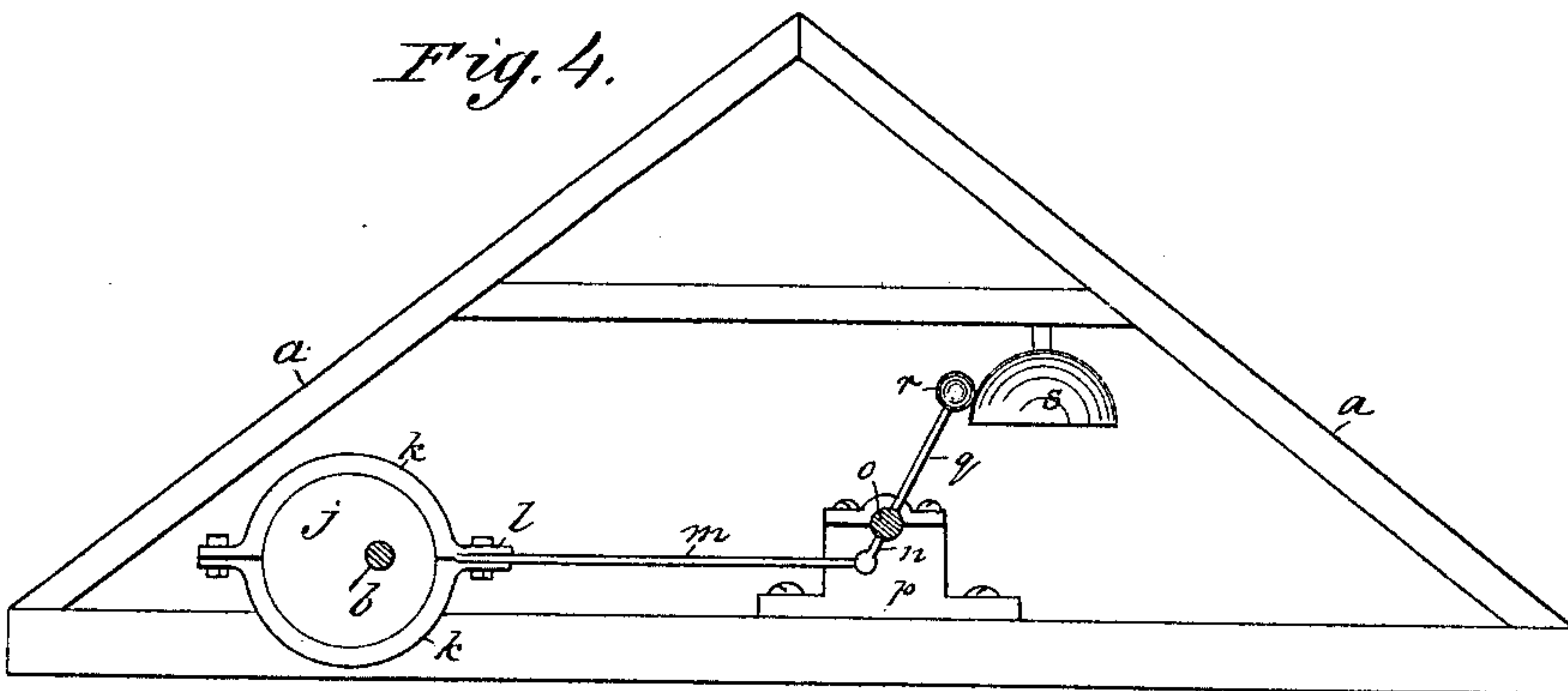
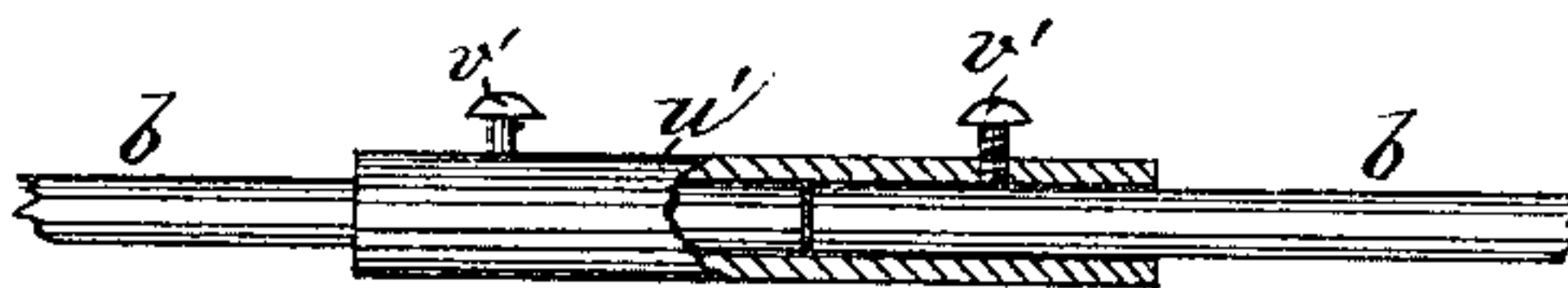


Fig. 5.



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UNITED STATES PATENT OFFICE.

RICHARD E. ANDREW, OF SHEPHERDSTOWN, WEST VIRGINIA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 285,542, dated September 25, 1883.

Application filed May 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, RICHARD E. ANDREW, a citizen of the United States, residing at Shepherdstown, in the county of Jefferson and State of West Virginia, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

Figure 1 is a representation of a house to which my invention is applied. Fig. 2 is a top view of the same. Fig. 3 is a section on line *x x* of Fig. 2. Fig. 4 is a section on line *y y*, Fig. 2. Fig. 5 is a detail view.

My invention relates to improvements in fire-escapes; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, *a* represents the frame to which the fire-escape is applied, the latter being adapted to be attached to any building.

b represents a horizontal longitudinal shaft, having its bearing *c* near the eaves of the front of the house, and provided with beveled pinions *d* on its ends, which gear with beveled pinions *e* on the outer ends of horizontal cross-shafts *f*, near the ends of the house. The inner end of one of the cross-shafts *f* is provided with a beveled pinion, *g*, which gears into a beveled pinion, *h*, on the end of a horizontal longitudinal shaft, *i*, having its bearings near the eaves of the house and parallel with the shaft *b*. By this construction a rotary motion imparted to one of the shafts will impart a similar motion to all the shafts.

j represents an eccentric keyed to the shaft *b* and surrounded by semicircular pieces *k*, having end lugs, *l*, keyed together around the eccentric *j*, the inner lugs, *l*, carrying between them an arm, *m*, connected at its outer end by a rod, *n*, with a rock-shaft, *o*, having its bearings *p* secured to the upper floor or joists of the house.

To the rock-shaft *o* is secured a vertical rod, *q*, carrying a hammer, *r*, at its upper end, adapted in the rotary movement of the shaft *b* to strike and ring a bell, *s*.

t represents a ratchet-wheel keyed to the shaft *b*, and *u* represents a pawl pivoted to one of the rafters of the house, or to any suitable part, and engaging with one of the ratchet-

teeth of the wheel *t*, to hold it and prevent the rotation of the shaft *b*.

To the outer end of the pawl *u* is secured a rod, *v*, which passes thence through a hook, *w*, suspended from a brace, *a'*, of the roof or other suitable point, and is provided at its lower end with a ring, *b'*, from which wires *c'*, secured to the ring *b'*, lead to the different rooms of the house, so that when the ring is pulled in case of a fire the pawl *u* is disengaged from the ratchet-wheel *t* and the shaft *b* is allowed to turn.

c'' represents a brake-wheel keyed to the shaft *b*.

d' represents a brake pivoted to the upper floor or joists of a house, and adapted to press against the brake-wheel *c'*.

e' is a brake-arm projecting inwardly, and *f'* is a chain connecting the inner end of the brake-arm with a shaft, *f''*, having its bearings *g'* secured to the joists or upper floor of the house.

h' represents a pinion on the shaft *f'*, which gears with the pinion *i'* on the shaft *b*.

k' k' represent flanges secured to the shafts *b f i*, opposite the windows of the house, and are intended to guide the ladders *A*, secured to said shafts, in their upward and downward movement.

The longitudinal sides *l* of the ladders *A* are composed of wire rods or flexible material secured at their upper ends to the shafts *b f i*, and passing over rolls *s'*, and adapted to be wound or unwound thereon on the shafts *b f i*, and connected by suitable rungs, *m'*, and provided near their lower ends with cross-pieces *n'*, having weights *o'*. The function of the cross-pieces *n'* is twofold—viz., to carry the weights *o'* and to close the spaces between the joists to prevent the wind from getting under the roof near the eaves and blowing the roof off the house. When the shafts *b f i* are free to move, the weights will unwind different ladders and carry them to the ground, the ladders being wound up and elevated by means of a portable frame, *p'*, secured to the upper joists of the building, and provided with a horizontal shaft, *q'*, having a large pinion, *r*, on one end, which gears with a pinion, *s'*, provided with a pawl, *s''*, on one or all of shafts *b f i*.

In winding up the ladders the chain *f'* is dis-

connected from the brake-arm e' until the ladders are wound up. The chain f' is then secured to the brake-arm e' , and the chain f' is made sufficiently long to allow the ladders to
 5 extend down to near the pavement on the ground, the brake acting on the brake-wheel to prevent too rapid a movement of the ladders.

When the fire-escape is applied to a factory, t' represents a band-wheel secured to the shaft
 10 b and connected by an endless belt with the motive power to be wound up thereby. When applied to hotels or private buildings, each shaft carrying more than one ladder is disconnected
 15 or cut apart for one or more ladders, so that one or more ladders can be wound up at a time by one or more persons. The cut portions of the shafts are joined together by sleeves or
 20 bands u' , provided with screws or bolts v' , passing through the sleeves or bands u' into the shafts on each side of the cut, the bolts or screws on the sides of the cuts to be operated
 are removed; and when said ladder or ladders are wound up by the portable frame p' the
 25 other ladders are similarly wound—one or two at a time—and the pinions s' secured in place by the pawls s^2 .

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. The combination, with the flanged disconnected horizontal longitudinal shafts b i and similarly-formed cross-shafts f , beveled

pinions d e g h , of the sleeves or bands u' , provided with screws v' , and ladders A, having cross-bars n' and weights o' , substantially as
 35 shown and described.

2. The combination, with the flanged disconnected longitudinal shafts b i and similarly-formed cross-shafts f , of the sleeves or bands
 40 u' , provided with screws v' , over the cut portions of the shafts, ladders A, pinion s' , having pawl s^2 , and portable frame p' , provided with a horizontal shaft q' , having a large pinion, r , substantially as described, and for the
 45 purpose set forth.

3. The combination, with the shaft b , provided with ladders A, and eccentric j , keyed to said shaft, semicircular pieces k , keyed
 50 around the eccentric-arm m , and rod n , of the rock-shaft o , hammer r , bell s , ratchet-wheel t , pawl u , rod v , and ring b' , connected by wires to the various rooms of a house, substantially
 as shown and described.

4. The combination, with the flanged disconnected shaft b , provided with the ladders
 55 A, of the brake-wheel e' , keyed to said shaft, the brake-arm e' , chain f' , shaft f^3 , carrying pinion h' and pinion i' , on the shaft b , substantially as described, and for the purpose set forth.

RICHARD E. ANDREW.

Witnesses:

H. W. POTTS,

L. W. POFFENBERGER.