(No Model.)

G. F. BAUER & D. WILLIAMS.

FIRE ESCAPE.

No. 304,898. Patented Sept. 9, 1884.

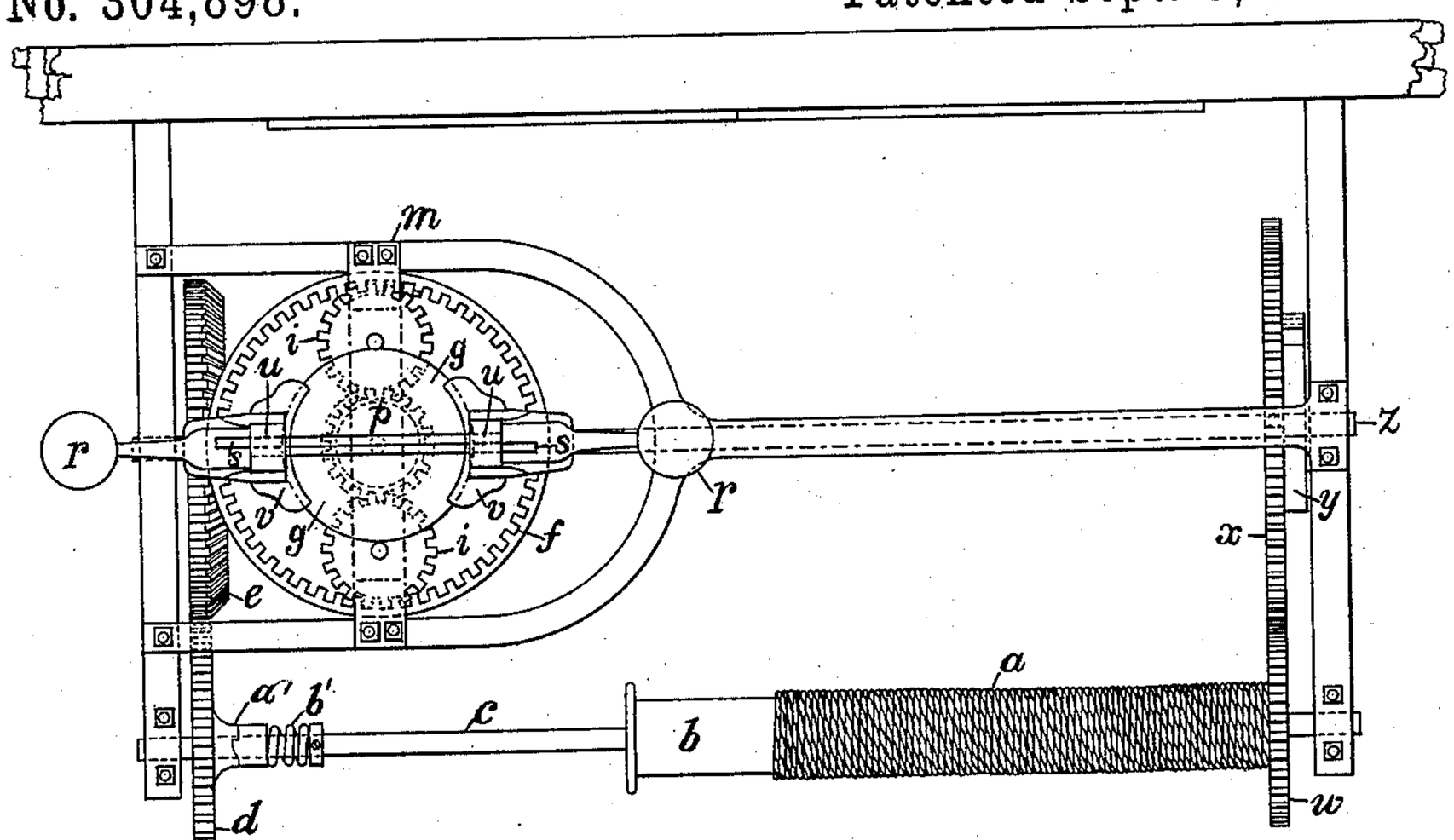

Fig. 1.

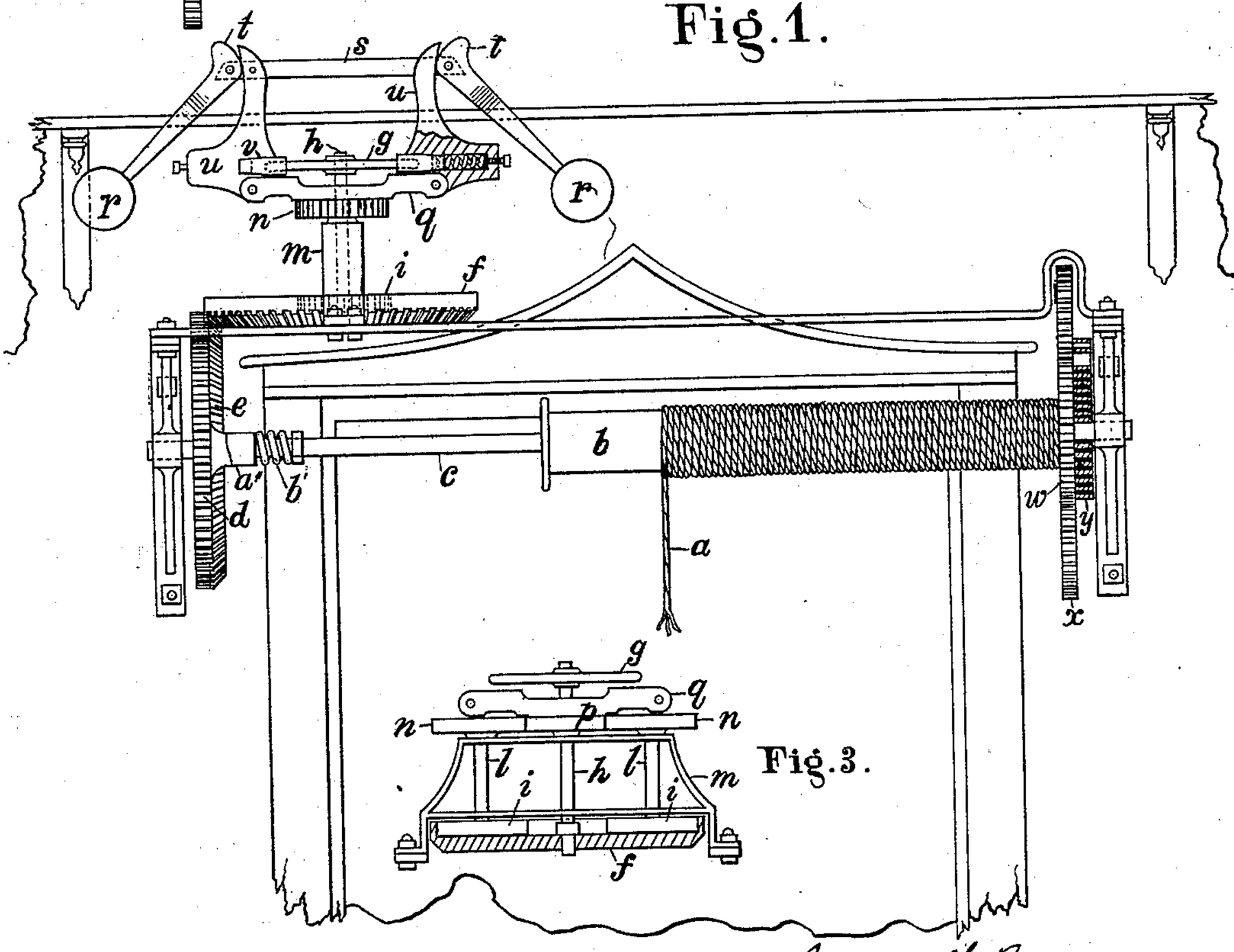

Fig. 2.

Fig. 3.

Attest:
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UNITED STATES PATENT OFFICE.

GOTTLIEB F. BAUER AND DOLPH WILLIAMS, OF SPRINGFIELD, OHIO.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 304,898, dated September 9, 1884.

Application filed April 5, 1883. (No model.)

To all whom it may concern:

Be it known that we, GOTTLIEB F. BAUER and DOLPH WILLIAMS, of Springfield, county of Clark, State of Ohio, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

In the accompanying drawings, Figure 1 is a plan view representing a machine used as a means of escape from fire in elevated rooms. Fig. 2 is an elevation of the same, and Fig. 3 is a detail view.

In these drawings letters of like character indicate corresponding parts in each of the figures.

The object of the present invention is chiefly to govern the rate of speed at which the passenger-cage shall descend when occupied and in use for the purpose specified; and the invention consists in a train of gear-wheels actuated by a drum to which the cage is attached, said gearing in its turn actuating a governor that, when expanded by centrifugal force, will cause friction-pieces to bear upon a disk, and thereby retard the speed of said gearing and attached winding-drums.

It further consists in the construction and arrangement of parts as will be hereinafter fully specified, and pointed out in claims.

In order that others skilled in the art to which our invention belongs may make and use our improvement, we will proceed to describe its construction and operation.

The passenger-cage is suspended to a rope, *a*, and may be made of any light material. Upon a passenger entering said cage the rope *a* will unwind, and in doing so turn the drum *b*, around which it is coiled.

Upon the shaft *c*, to which the drum *d* is rigidly secured, we attach a spur-wheel, *e*, which in turning actuates a compound bevel and internal gear wheel, *f*. The wheel *f* actuates the friction-disk *g*, through the agency of a shaft, *h*, to which it is rigidly secured. The twin pinions *i i* are driven by the internal gear of wheel *f*, and are secured to spindles *l l*, supported by a bracket, *m*.

Near the top of the shafts *l l* are secured twin pinions *n n*, (for which see Fig. 3,) that mesh into and actuate a pinion, *p*, that is secured to or forms a part of the bracket *q*. that carries the governor.

The construction of the governor may be briefly described as follows: The balls *r r* are pivoted to the longitudinal levers *s s* in the manner shown by the drawings, and they are provided with cams *t t*, that bear against the friction-pieces *u u*, which are pivoted to the bracket *q*. These friction-pieces are provided with spring-slides *v v*, for the purpose of preventing a dead stop being made through the agency of the aforesaid brake mechanism.

To wind the rope *a* around the drum *b* after it has been uncoiled by the descent of the cage, we employ a pinion, *w*, that actuates a spur-wheel, *x*, which winds up a spring, *y*, during the unwinding of the rope. The spring *y* is secured at one end to the aforesaid spur-wheel and at the other end to the stationary shaft *z*, upon which the spur-wheel *x* and compound spur and bevel wheel *e* revolve.

Any of the well-known methods can be employed to stop the cage at any altitude, such as a pull dropping into any of the gear-wheels and actuated by a rope or rod from the ground, or by an auxiliary friction-brake.

From the foregoing description it will be easily understood that the governor will be revolved faster as the speed of the cage increases, and will therefore cause the cams *t t* to impinge with greater force upon the pivoted friction-pieces *u u*, and these friction-pieces in their turn to act with greater force upon the revolving friction-disk *g*, thereby checking the speed of the train of gears and the drum. The clutch *a'* turns the train of gears through the agency of the drum *b*, and it is held to its work by a spring, *b'*. When the drum *b* is reversed by the action of the spring *y*, this clutch will revolve without disturbing the train of gears.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A drum rotated by a rope and weighted cage, which in turning actuates a revolving disk and a revolving governor, said governor actuating the spring friction-slides that impinge upon the aforesaid disk, substantially as and for the purpose specified.

2. A cable or rope, *a*, actuating a drum, *b*, a train of gears, substantially such as specified, a disk, *h*, and governor *r s t*, in combination with the spring friction-pieces *u u*, for the purpose specified.

3. A cable or rope, *a*, actuating a drum, *b*, a train of gears, substantially as specified, a disk, *h*, governor *r s t*, and spring friction-pieces *u u*, in combination with the clutch *a' b'*, substantially as described, and for the purposes set forth.

4. The combination, with the revolving disk, of a centrifugal governor adapted to actuate friction-pieces which impinge said disk, said governor and friction-pieces being adapted to revolve about said disk in an opposite direction thereto, substantially as specified.

5. The combination, with the internal gear, *f*, and the revolving disk secured on the same shaft therewith, of a centrifugal governor adapted to actuate friction-pieces which impinge said disk, and the vertical shafts *l l*, provided at each end with pinions, which engage respectively with said internal gear, *f*, and a pinion, *p*, on said governor, substantially as set forth.

In testimony whereof we have hereunto set our hands this 2d day of April, 1883.

GOTTLIEB F. BAUER.
DOLPH WILLIAMS.

Witnesses:
HENRY MILLWARD,
E. S. WALLACE.