

(No Model.)

2 Sheets—Sheet 1.

W. H. ROBERTS.
PORTABLE FIRE ESCAPE.

No. 363,913.

Patented May 31, 1887.

Fig. 1.

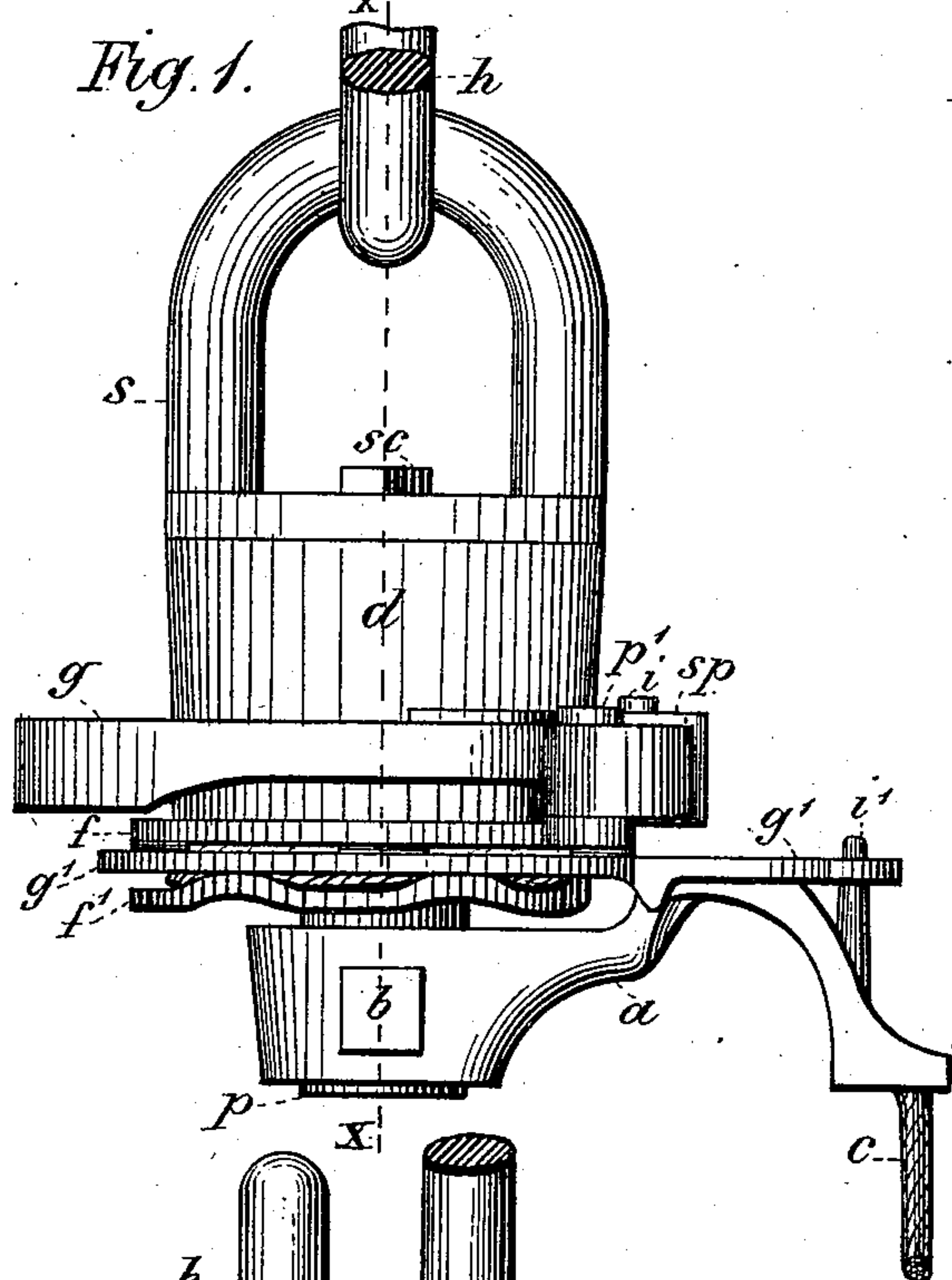


Fig. 2.

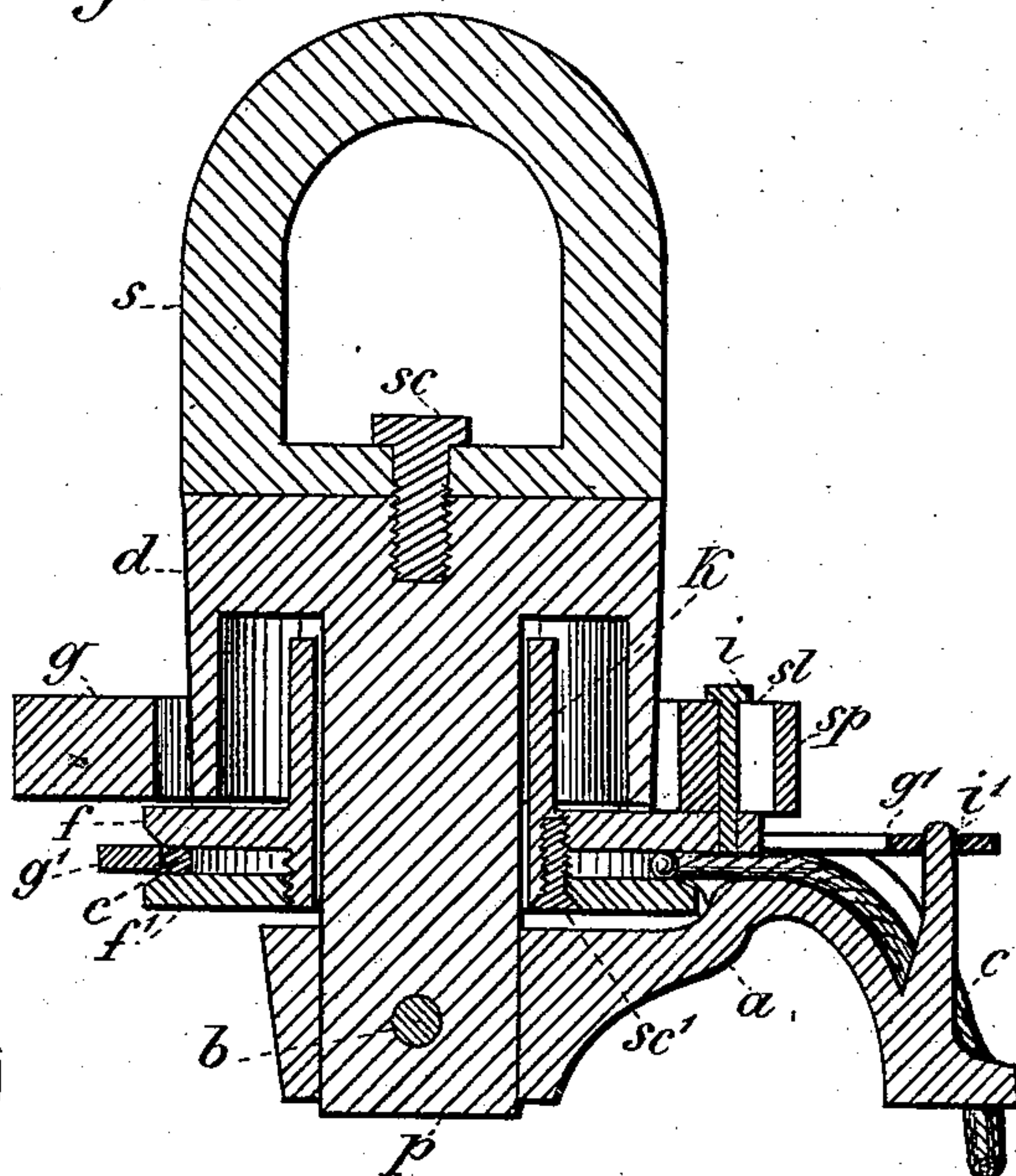


Fig. 3.

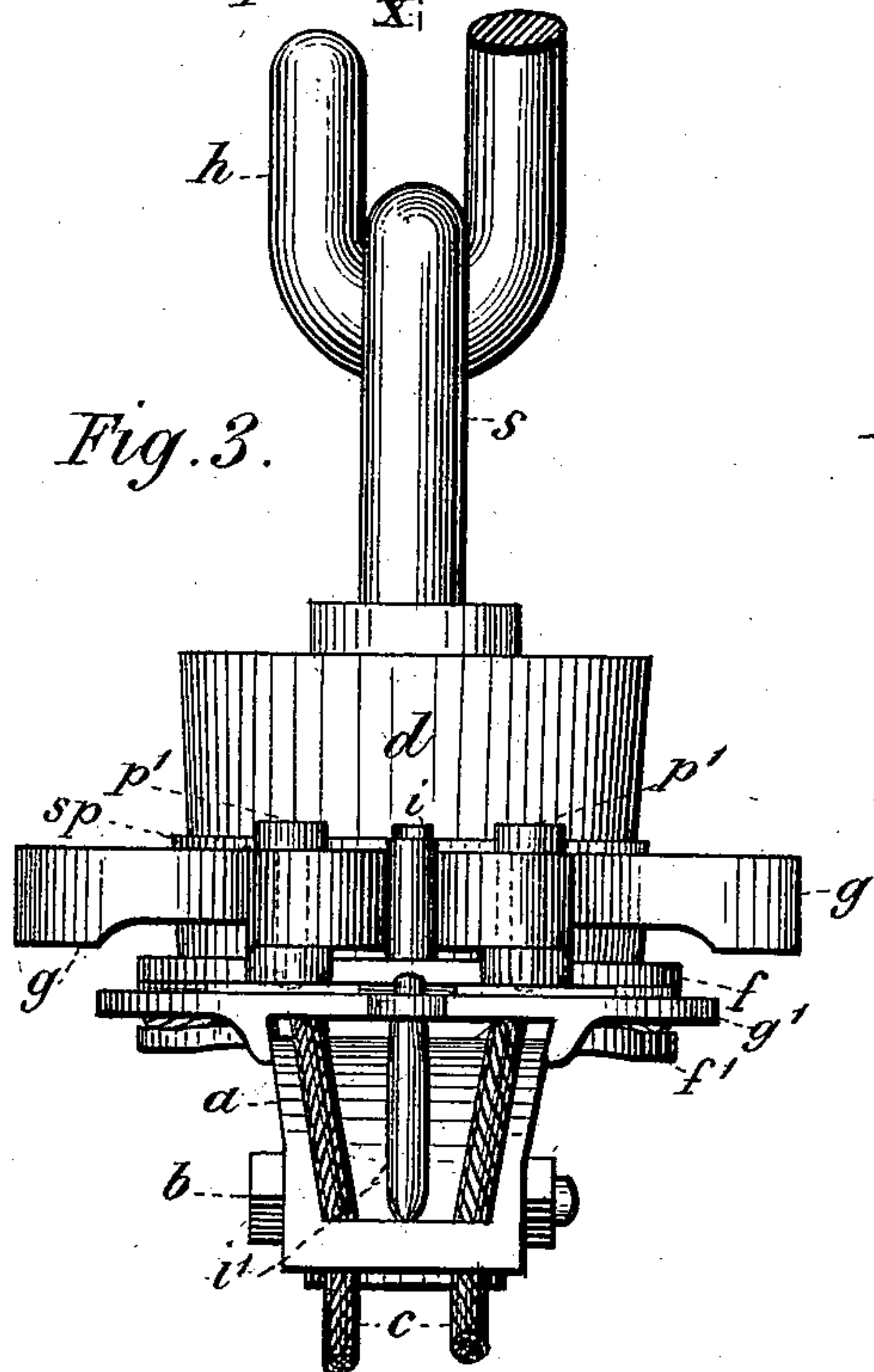
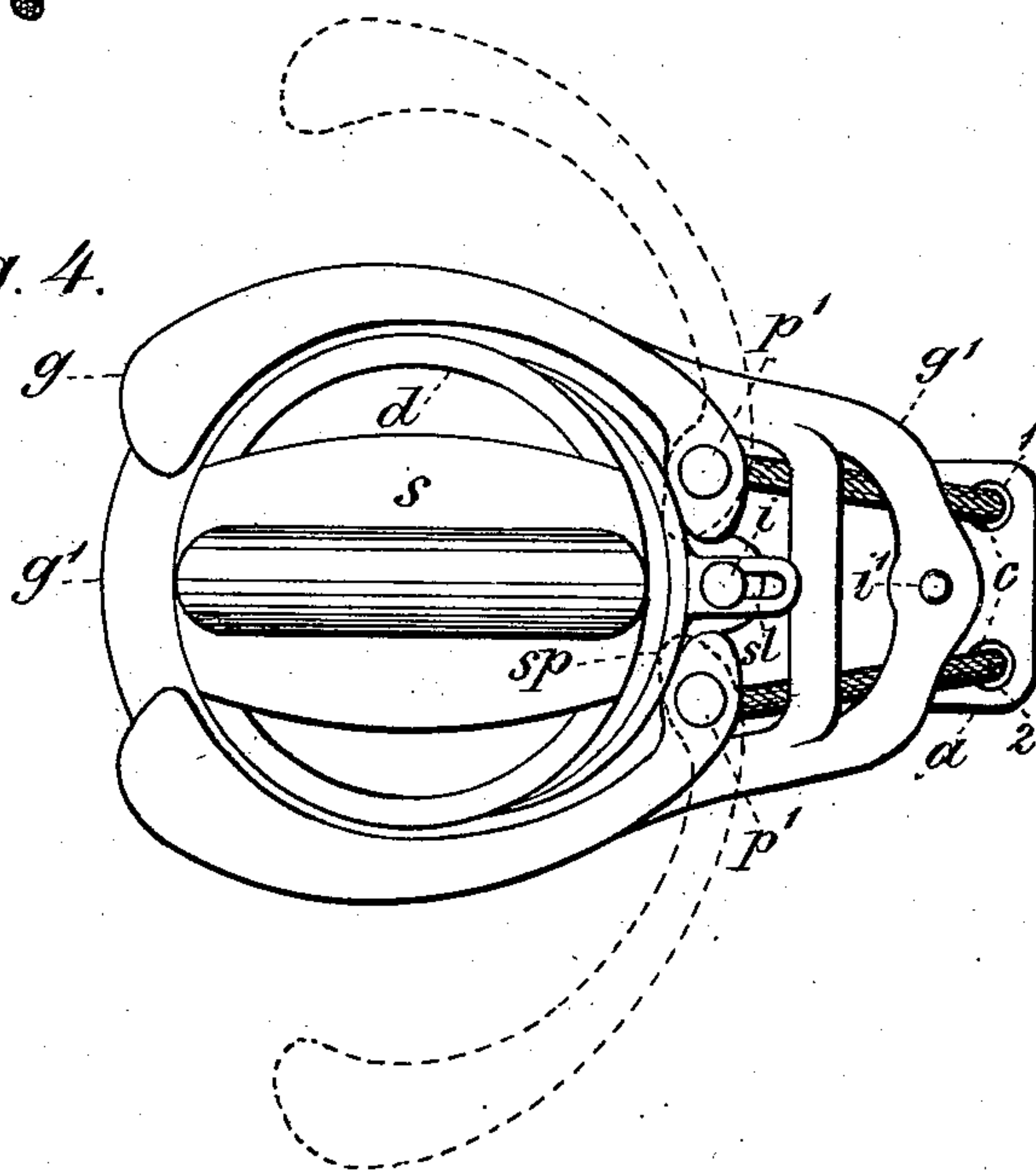


Fig. 4.



Witnesses:
Gustav Böhm
H. B. Gatout

Inventor..
Wm. H. Roberts.
By Wm. S. Smith
Atty.

(No Model.)

2 Sheets—Sheet 2.

W. H. ROBERTS.
PORTABLE FIRE ESCAPE.

No. 363,913.

Patented May 31, 1887.

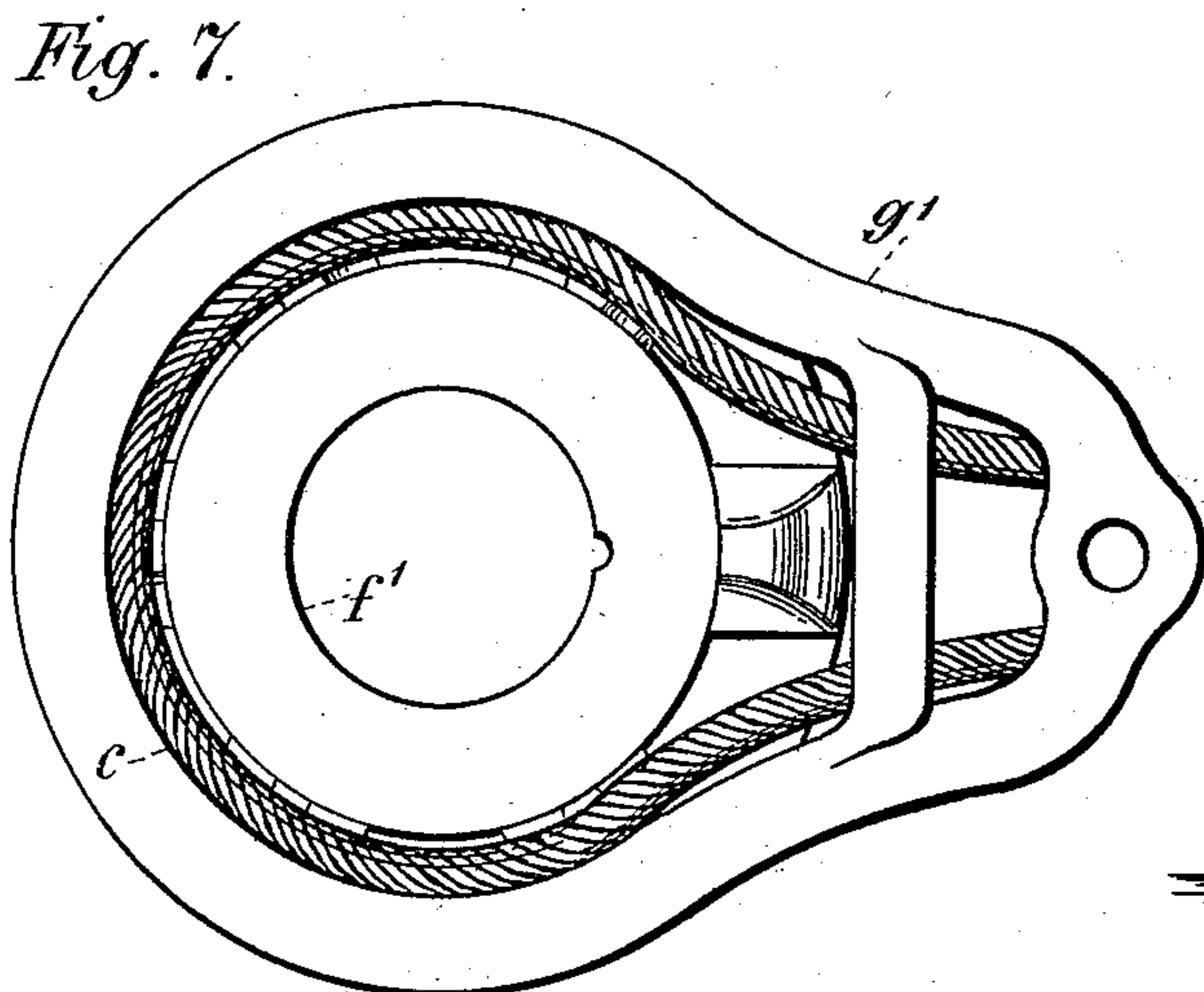
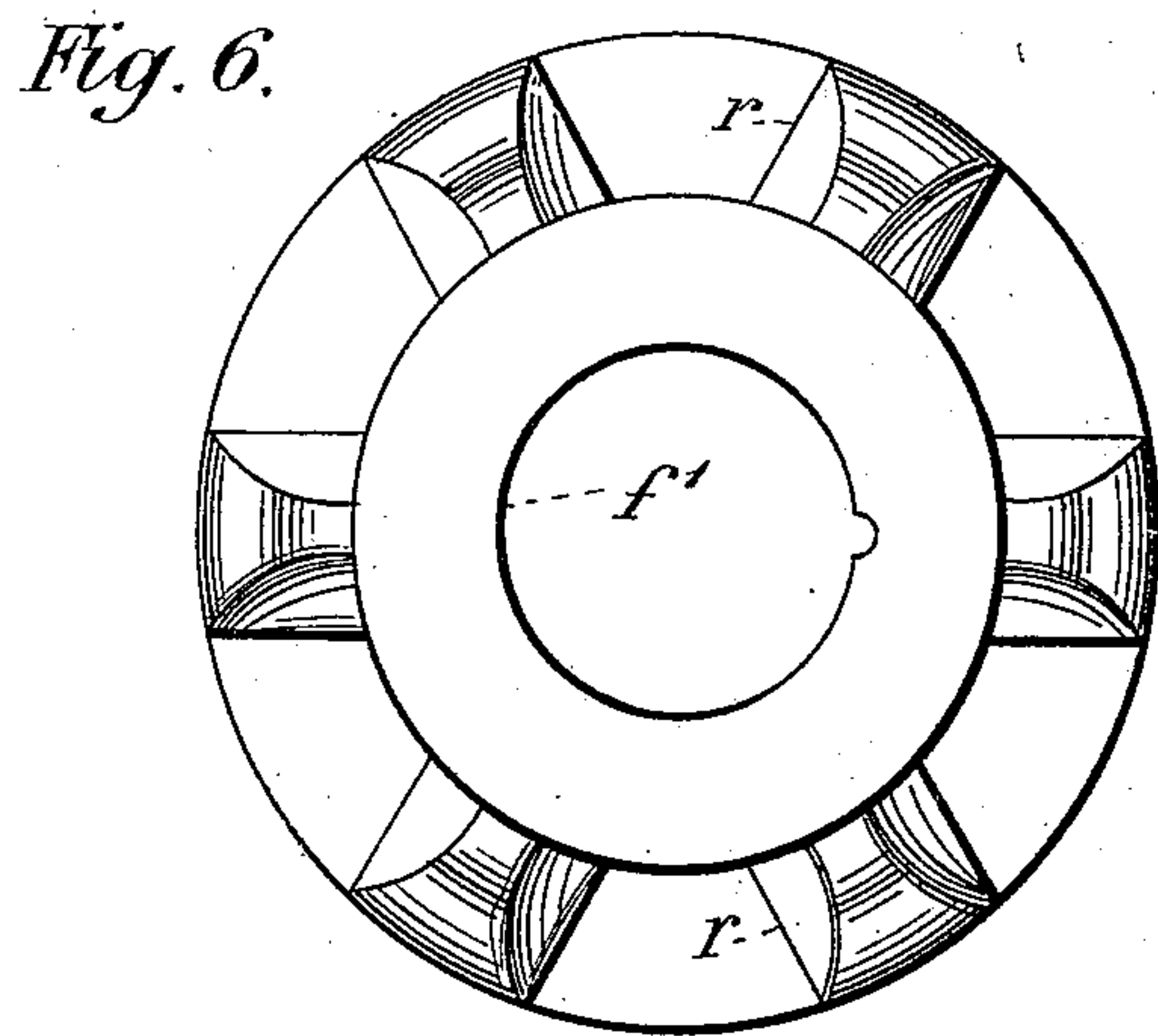
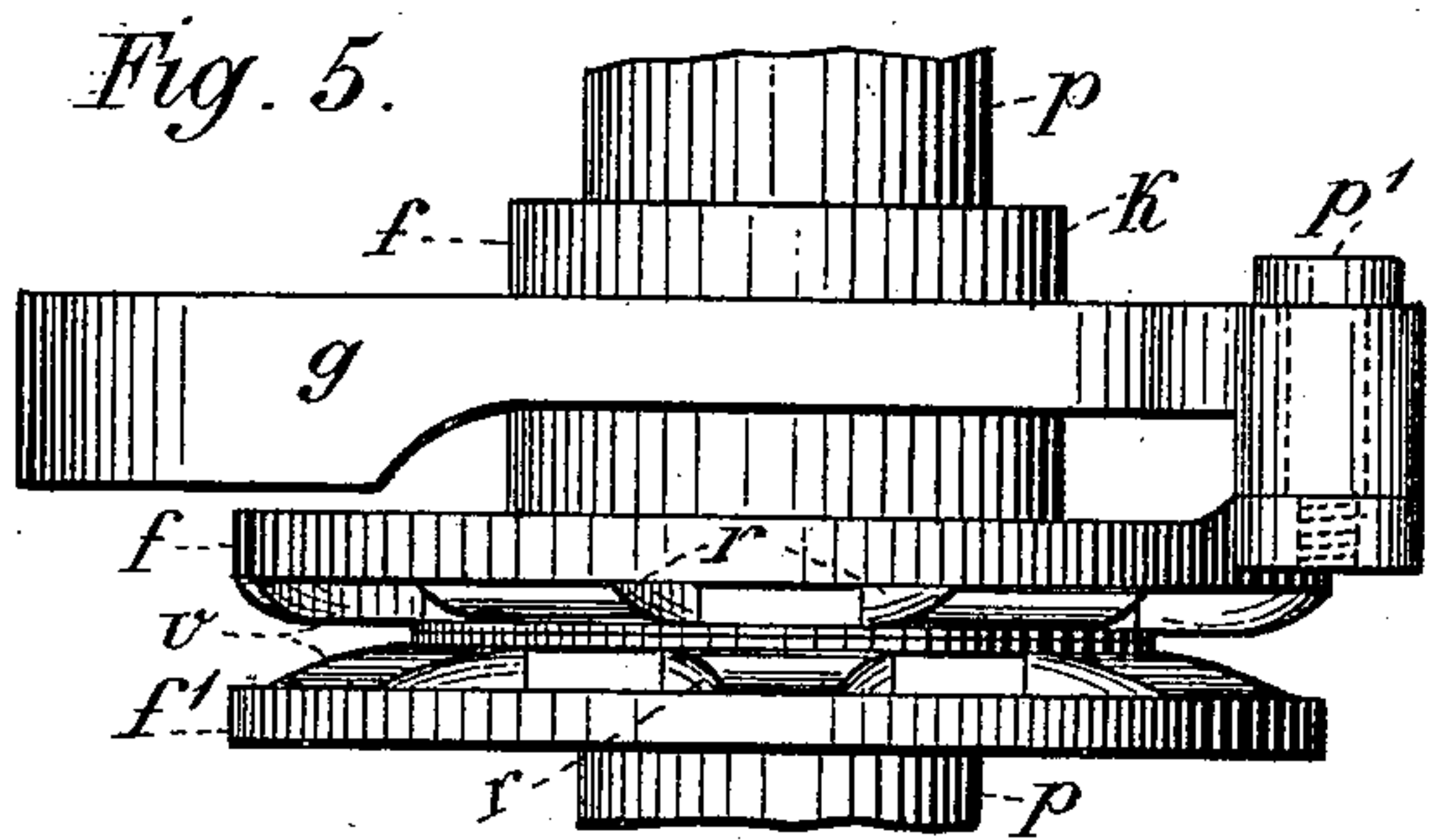
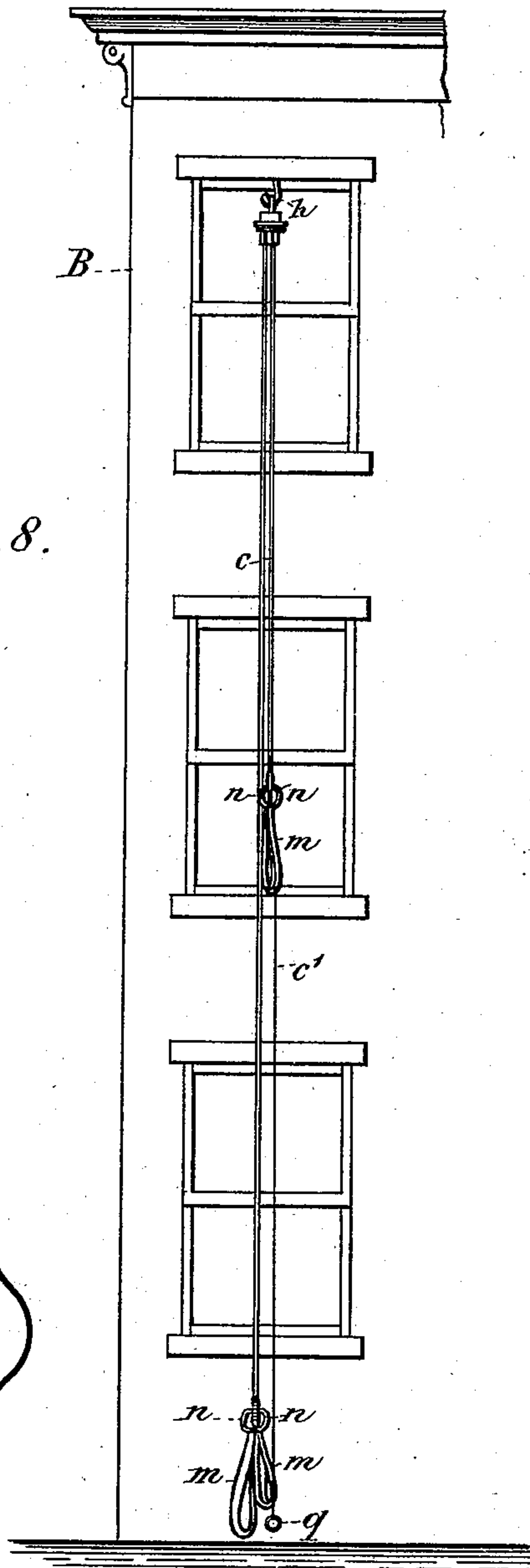


Fig. 8.



Witnesses:
Gustav Bohn.
H. B. Matout

Inventor.
Wm. H. Roberts.
By Wm. P. Smith
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. ROBERTS, OF INDIANAPOLIS, INDIANA.

PORTABLE FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 363,913, dated May 31, 1887.

Application filed July 22, 1886. Serial No. 208,814. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ROBERTS, of the city of Indianapolis, Marion county, and State of Indiana, have invented certain new and useful Improvements in Portable Fire-Escapes, of which the following is a specification.

My invention relates to improvements in portable fire-escapes wherein governors are used to regulate the velocity of descending bodies; and the object of my improvement is to cheapen the cost, simplify the mechanism, and increase the utility of self-regulating or automatic fire-escapes, all of which objects I attain by means of the device described in this specification, and illustrated in the drawings filed herewith and made a part hereof, and in which similar letters of reference relate to similar parts of my invention throughout said drawings, in which—

Figure 1 represents a side view of my fire-escape; Fig. 2, a longitudinal vertical section of my device on the line *xx* of Fig. 1; Fig. 3, a front view; Fig. 4, a top view; Figs. 5, 6, and 7, detail drawings of parts of my invention, and Fig. 8 a building with my invention in position, showing the manner of attaching my device to buildings and the operation of the same.

In Fig. 1, *d* is a metal brake drum, cast with a downwardly-projecting spindle, *p*, to the top of which is fastened, by means of a screw, *sc*, a stirrup, *s*, made to receive the hook *h*, by means of which my device is attached to its support when in use. *a* is a supporting-arm having an aperture to fit over the lower end of spindle *p*, to which it is firmly bolted and held in position by means of bolt *b*, two apertures, 1 and 2, at its outer end, through which the cable *c* freely passes, (see Fig. 4,) and an upwardly-projecting pin, *i*, rigidly attached, to receive and hold in position the metal guard *g'*, which is a metal casting made to fit loosely outside of the cable *c*, resting in the V-shaped groove *v*, formed by the beveled faces of flanges *f* and *f'*, (see Fig. 5,) to hold the cable *c* in position and prevent its disengagement. *g* is a governor-arm, pivoted at *p* to the upper flange, *f*, which is rigidly attached to the sleeve or cylinder *k*. This governor is provided with a ball or weight at its outer end,

and is sufficiently bent to fit snugly around the outside of brake-drum *d*. The inner end of this governor is made to form a projection that operates as the short arm of a lever, with its fulcrum at *p'*. (See Fig. 4.) *f'* is a corrugated flange beveled on its upper side, and provided with a threaded aperture in its center to fit onto the lower end of the sleeve or cylinder *k*, fitting loosely on the spindle *p*, the lower end of which sleeve is threaded to receive it, where it is held in position by means of a screw, *sc*. (See Fig. 2.) The ribs *r*, Figs. 5 and 6, or corrugations of flange *f'*, are so arranged as to rest midway between the ribs or corrugations of flange *f*, the lower side of which is also beveled to form a V-shaped groove, *v*, when flange *f'* is in position. (See Fig. 5.)

In Fig. 4, *sp* is a metal spring, semi-lunar in shape, the outer ends of which are made to rest loosely against the brake-drum *d*, and its middle portion bent outward to form an elongated slot, *sl*, which fits loosely over a pin, *i*, between the short ends of governors *g g*. The outside of this spring near its center rests loosely against the short arms of the governors *g g* and holds them in position, as shown in full lines on Fig. 4, when my device is at rest.

In Fig. 8, B is a building with my fire-escape attached to the casing of the window, showing the cables *c*, harness *m m*, safety-straps *n n n*, cords *c' c'*, and ball *q*, designed for throwing up into the window of a building not otherwise provided with a means of escape for persons in peril.

To prepare my device for use, the necessary cables and mechanism having been provided, I remove bolt *b* from spindle *p*. The supporting-arm *a* is then removed from the spindle *p*, when the sleeve or cylinder *k*, which is held in position on the spindle by said arm, can be removed, the screw *sc* taken out, and flange *f'* unscrewed. I now pass the end of cable *c* up through the aperture 1 in the outer end of arm *a*, carry this end of the cable around the sleeve *k*, allowing it to pass between the guard *g'* and sleeve *k*, and down through aperture 2 in arm *a*. I then fasten the harness *m* and safety-straps *n n* securely to the end of cable *c*, replace the flange *f'* on the sleeve *k*, slip the

sleeve on the spindle *p*, replace arm *a*, and insert bolt *b*, when my device is ready for use.

In case of a fire I have but to attach my device, by means of hook *h*, to a staple in the window-casing provided for that purpose, or over the window-sash, or to any suitable object—such as a chair or table leg—slip the harness over my shoulder, allowing the same to pass under my arms, jump out of the window, and am lowered to the ground without receiving the slightest shock, the cable *c*, to which the weight is suspended, passing around sleeve *k* in the V-shaped groove *v*, the ribs *r*, corrugations of which bring the pressure of the cable first against the upper and then against the lower flanges, causing the sleeve *k* to revolve, carrying with it the governors *g g*, which, by the centrifugal force thus evolved, are caused to extend outward, as indicated in dotted lines on Fig. 4, pressing the short ends of the levers against the spring *sp*, which is thereby pressed against the brake-drum *d*, checking the velocity of the revolutions and regulating the descent of the falling body attached to the cable.

Should parties wish to descend from the second or third story while the device is located in the fourth or fifth story, they have but to grasp the cord *c'* and draw the end of the cable *c* down to their hands, and for this purpose the cord *c'* is made of sufficient length to reach from the ground to the upper story. The ball *q*, attached to the end of cord *c'*, is for convenience in passing the end of this cord to persons in peril on any floor of a building. The importance of this simple device is obvious, as by means of this firemen can supply parties in peril with means of escape.

The advantages I derive from employing my invention are, first, by constructing my device as above described I obtain the desired strength with the least possible weight of metal, thus cheapening the cost of construction and increasing its utility; second, by means of the stirrup *s* and hook *h*, I adapt my escape to any building, as a table or chair leg, window-sash, or bedstead will furnish ample means of support for my fire-escape; third, by means of the safety-straps and harness provided on my cable three persons can escape from a building at one and the same time, and by aid of the ball *q* and cord *c'*, I can pass my escape to persons in any story of a building by simply throwing the ball through the proper window, all of which objects are greatly to be desired.

Having thus described my invention, its purposes, uses, and advantages, what I claim as new, and desire to secure by Letters Patent, as an improvement upon the patent to Powell, dated October 14, 1884, No. 306,520, fire-escape friction, is—

1. The combination, with a brake-drum hav-

ing its top detachably connected with a stirrup, and a downwardly-projecting spindle through its center, of a semi-lunar metal spring the central portion of which is bent outward so as to form an elongated slot, and governors pivoted near their smaller ends and provided at their outer ends with governing balls, and attached to a revolving cylinder, forming, when the cylinder is in motion, a brake, substantially in the manner and for the purpose set forth.

2. The combination, with a cable provided at both ends with harness and safety straps, as illustrated, of a guide-arm having two apertures in its outer end, an upwardly-projecting pin near its outer end, an aperture to fit over a downwardly-projecting spindle rigidly attached to a brake-drum, and a cylinder or sleeve having beveled corrugated flanges and provided with braking-governors, substantially in the manner and for the purpose set forth.

3. The combination of a sleeve or cylinder having rigidly mounted thereon a corrugated flange, with its under side beveled, and its upper side provided with an upwardly-projecting pin, to operate as a fulcrum for governing-levers, said sleeve or cylinder having a portion of its lower end threaded to receive a corrugated flange having in its center a threaded aperture to fit over the end of said cylinder, and its upper side beveled to form when in position with a corresponding flange on said sleeve a V-shaped groove, governors pivoted near their smaller ends to operate as levers, with their fulcrums at their pivoted points, semi-lunar spring, and brake-drum, substantially in the manner and for the purpose set forth.

4. A fire-escape consisting of a stirrup detachably connected with the upper end of a brake-drum, having a downwardly-projecting spindle rigidly and centrally attached thereto to receive and support a loosely-fitting cylinder or sleeve, *k*, provided with a corrugated beveled flange, *f*, having pivoted thereto two governors, *g g*, and an upwardly-projecting pin, *i*, semi-lunar brake spring, *sp*, said sleeve having its lower end threaded to receive flange *f'*, corrugated and flanged to form a V-shaped groove in conjunction with flange *f*, a guide, *g'*, and cable *c* with its attachments, all constructed, combined, and operated substantially in the manner and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Marion county, Indiana, this 19th day of July, A. D. 1886.

WILLIAM H. ROBERTS. [L. S.]

In presence of—

ROY B. SMITH,
GUSTAV BOHN.