

(No Model.)

A. J. BELL.  
ROPE PULLEY BLOCK.

No. 311,169.

Patented Jan. 27, 1885.

Fig. 1.

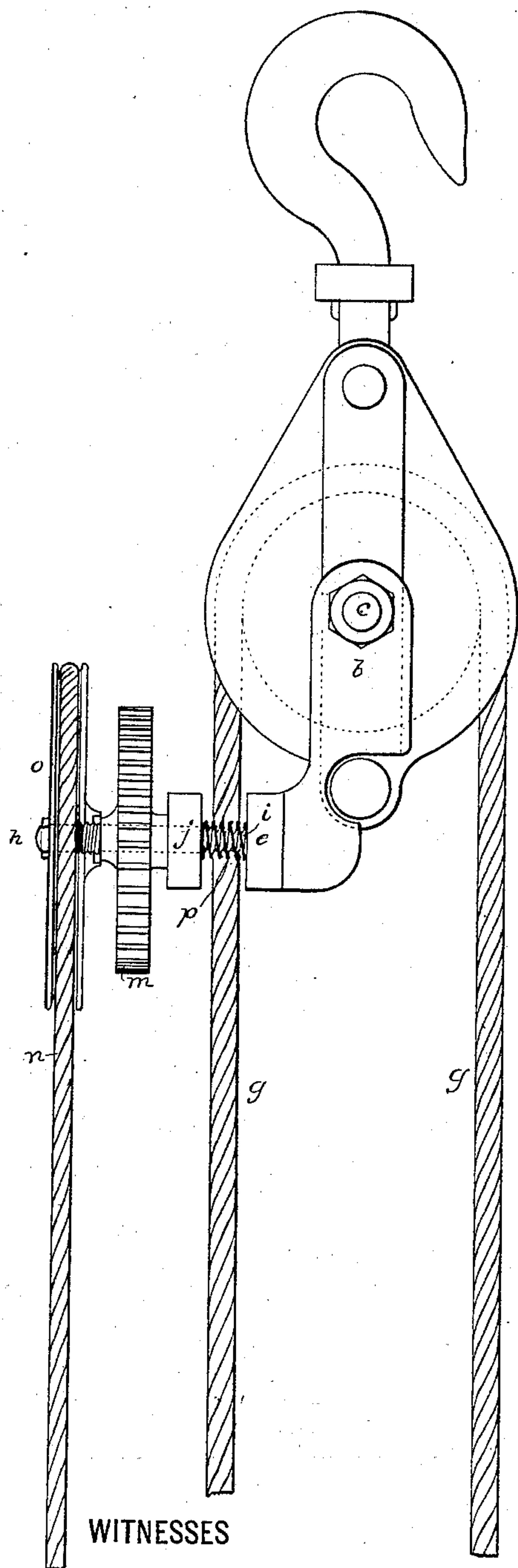


Fig. 2.

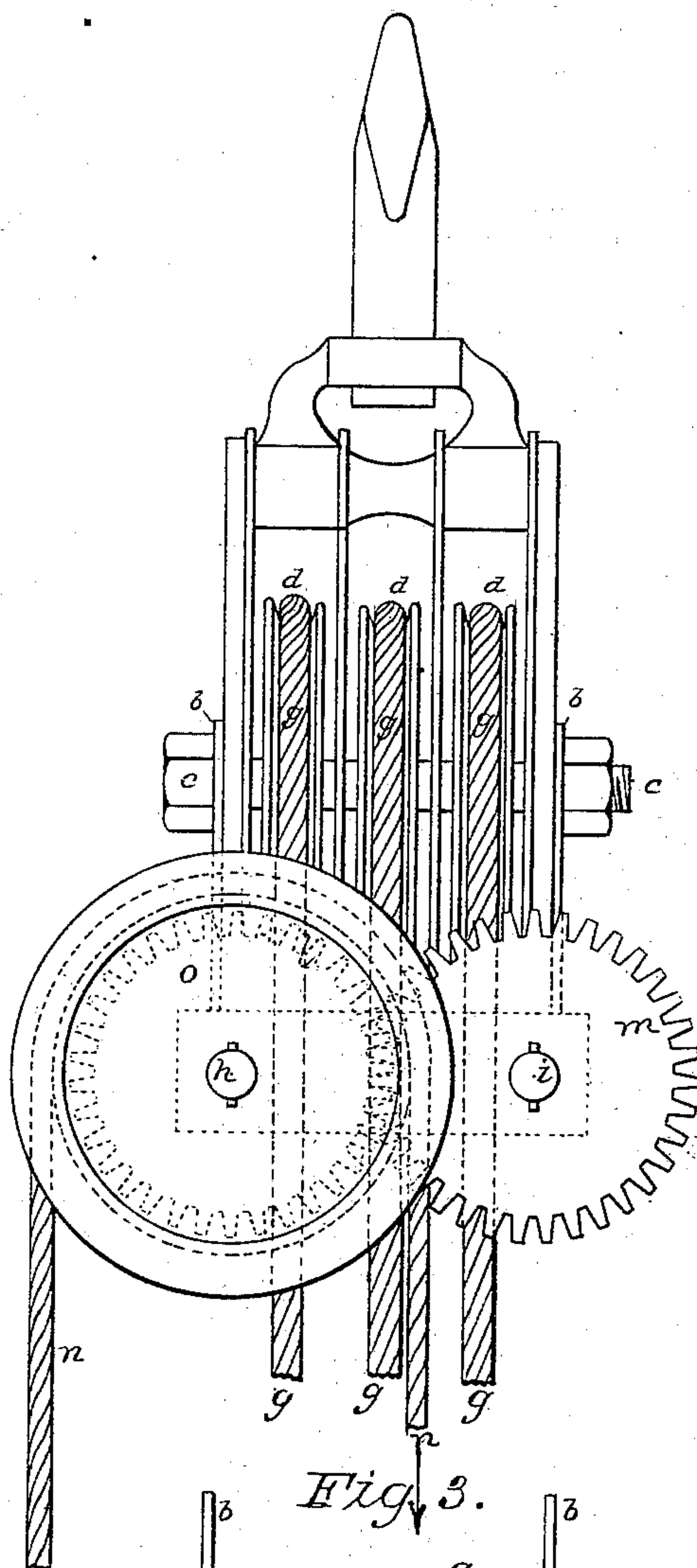
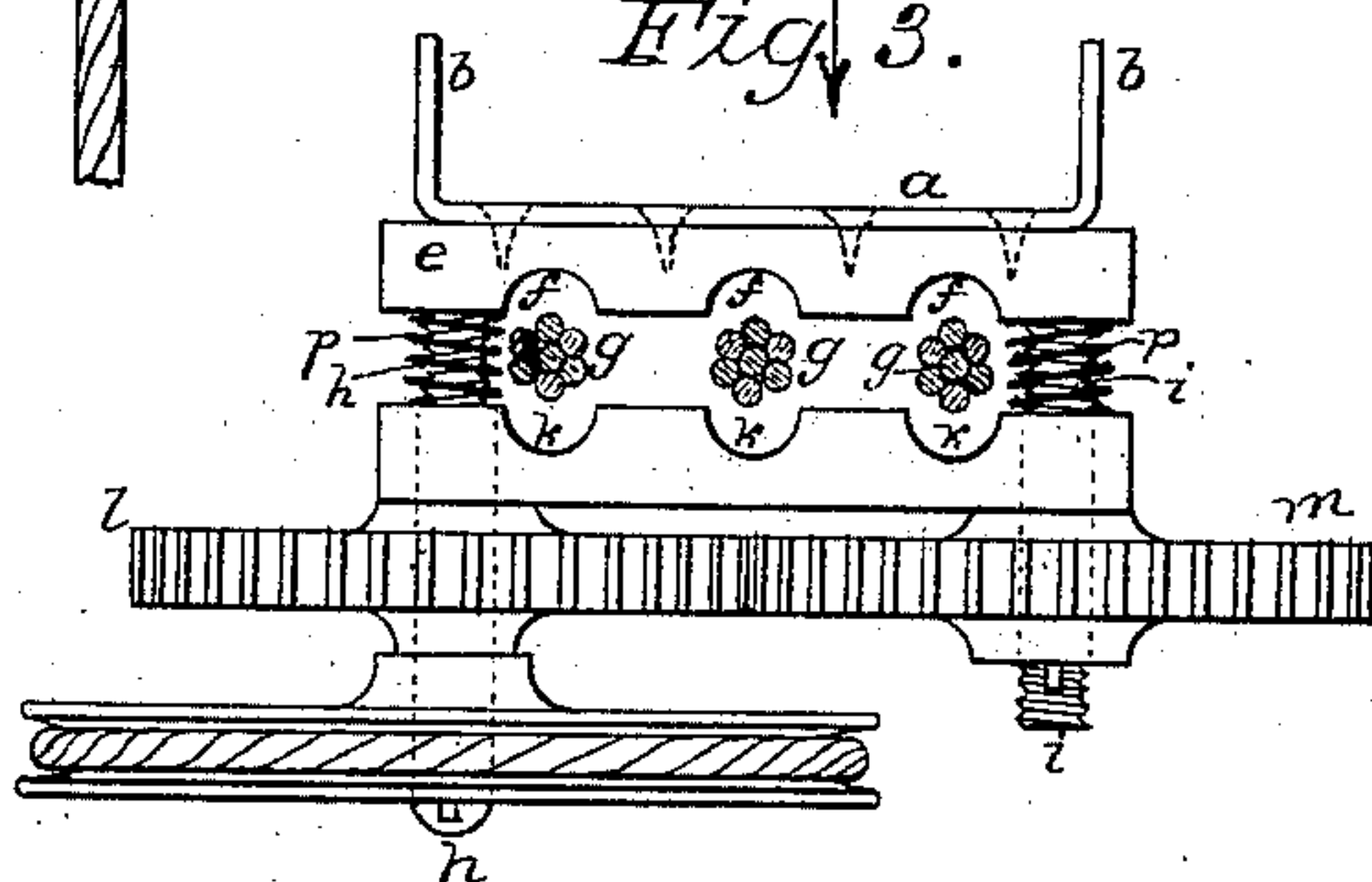


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## ROPE-PULLEY BLOCK.

SPECIFICATION forming part of Letters Patent No. 311,169, dated January 27, 1885.

Application filed September 27, 1884. (No model.) Patented in England May 9, 1884, No. 7,451.

*To all whom it may concern:*

Be it known that I, ANDREW JAMES BELL, a subject of the Queen of Great Britain and Ireland, residing at Manchester, in the county of Lancaster, England, have invented certain Improvements in Rope-Pulley Blocks, (patented in Great Britain and Ireland by Letters Patent No. 7,451, dated May 9, 1884;) and I do hereby declare the following to be a full, clear, and exact description of my said invention, such as will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form part of this specification.

The object of this invention is the application to rope-pulley blocks of a friction clip or brake apparatus, whereby the lifting, carrying, suspending, or lowering of heavy weights can be facilitated and performed with less manual labor than has hitherto been practicable.

Figure 1 of the accompanying drawings illustrates a side view, and Fig. 2 a front view, of an ordinary rope-pulley block having my improvements applied thereto; and Fig. 3 represents a plan of the frictional apparatus detached from the pulley-block.

Although shown as applied to a pulley-block with three rope-pulleys, it will be obvious that the improvements are equally applicable to blocks using more or less than three pulleys.

In carrying out my invention I attach a light metallic frame, *a*, with two projecting cheeks, *b*, by preference to the same central bolt or pin, *c*, which carries the rope-pulleys *d*. In the face of a wooden block, *e*, secured to this frame, are formed three grooves, *f*, in which the pulley-ropes *g* slide, and mounted upon a pair of right and left handed screws, *h* and *i*, projecting from the face of this frame, is a corresponding wooden block, *j*, similarly formed with three grooves, *k*, to receive the pulley-ropes *g*. These grooved blocks are capable of being screwed together so as to firmly grasp all the ropes *g* simultaneously, and thus to act as a brake upon such ropes by means of toothed wheels *l* and *m*, screwed upon the respective right and left handed screws *h* and *i*. The hand-rope *n*, passing round the pulley *o*, serves to impart revolving motion to

the wheels *l* and *m*, which are geared together as illustrated, and thus causes the brake-blocks *e* and *j* to approach toward or recede from each other at the will of the operator. The action of this improved pulley-block will be at once apparent. So long as the brake-blocks *e* and *j* are free from the ropes *g* the latter can be drawn through the block and the weight be raised or lowered or suspended; but immediately the hand-rope *n* is pulled down in the direction of the arrow, revolving motion is imparted to the toothed wheels *l* and *m*, and these, acting as screw-nuts upon the screws *h* and *i*, thus cause the brake-blocks to approach other, and to squeeze the ropes simultaneously between them. In this manner the weight is effectually locked in position, leaving the operator's hands at liberty, and such weight thus remains suspended and cannot be lowered again until the reverse end of the rope *n* is pulled, when, by a reverse action, the brake-blocks are caused to recede again, assisted by the spiral springs *p*, interposed between the blocks, thus loosening their grip upon the ropes. It will be further observed that these brake-blocks also afford facility for regulating the lowering of a weight at any desired speed.

I claim as my invention—

1. A friction-brake for rope-pulley blocks, having a pair of brake-blocks between which the pulley-ropes pass, a pair of right-and-left screws extending through one of said brake-blocks, a pair of toothed wheel-nuts applied to said screws and intermeshing with each other, and a hand-rope pulley attached to one of said nuts, substantially as herein specified, for stopping or retarding the motion of said pulley-ropes at will, in the manner set forth.

2. The within-described brake attachment to an ordinary rope-pulley block, consisting of a supplemental frame, a pair of brake-blocks, a hand rope-pulley, and means, substantially as specified, for transmitting motion to one of said brake-blocks from said pulley, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW JAMES BELL.

Witnesses:

WILLIAM WILLIS THOMSON,  
ANDREW BELL.