

Patented Mar. 30, 1886.

Fig. 1.

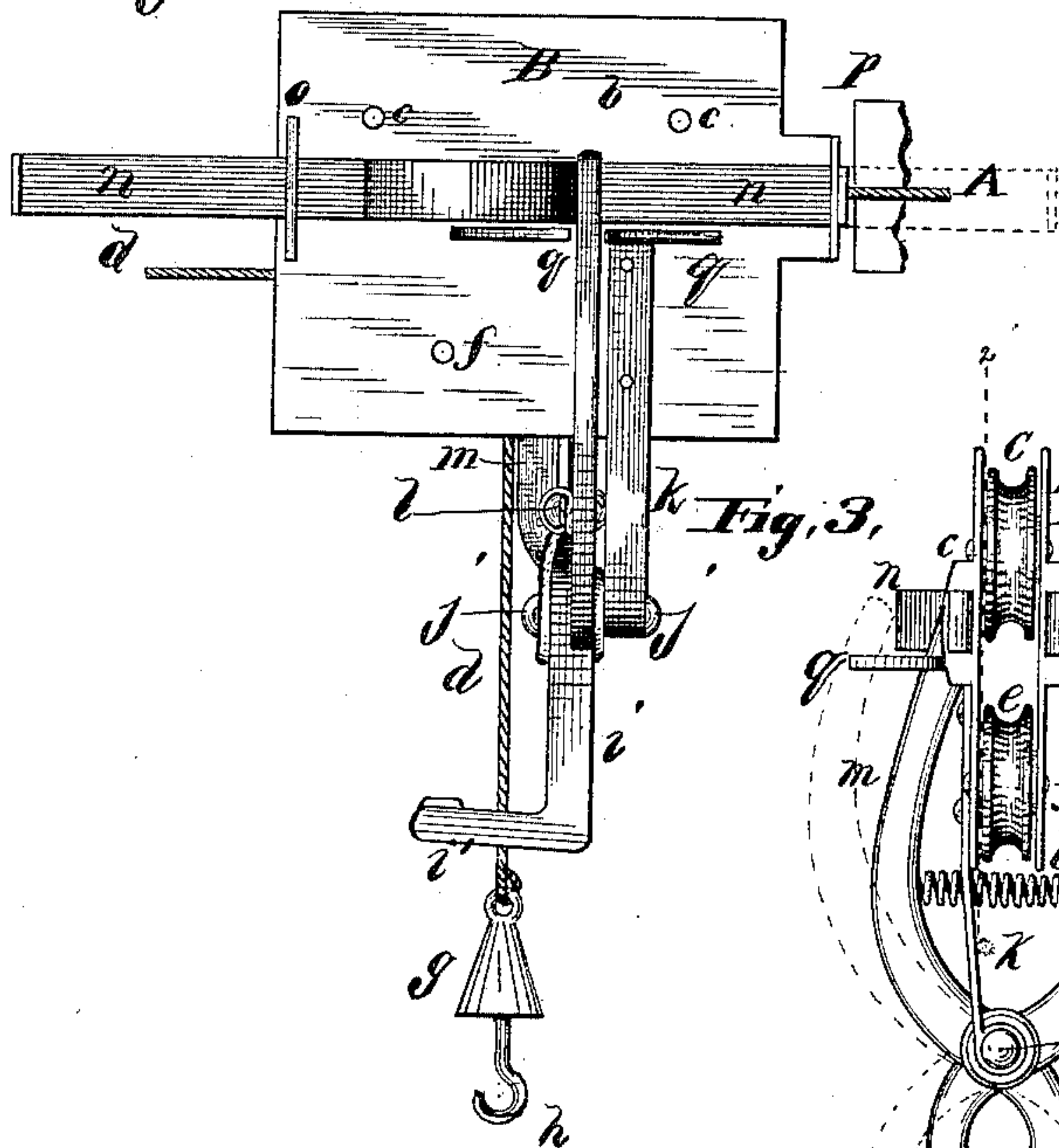


Fig. 2.

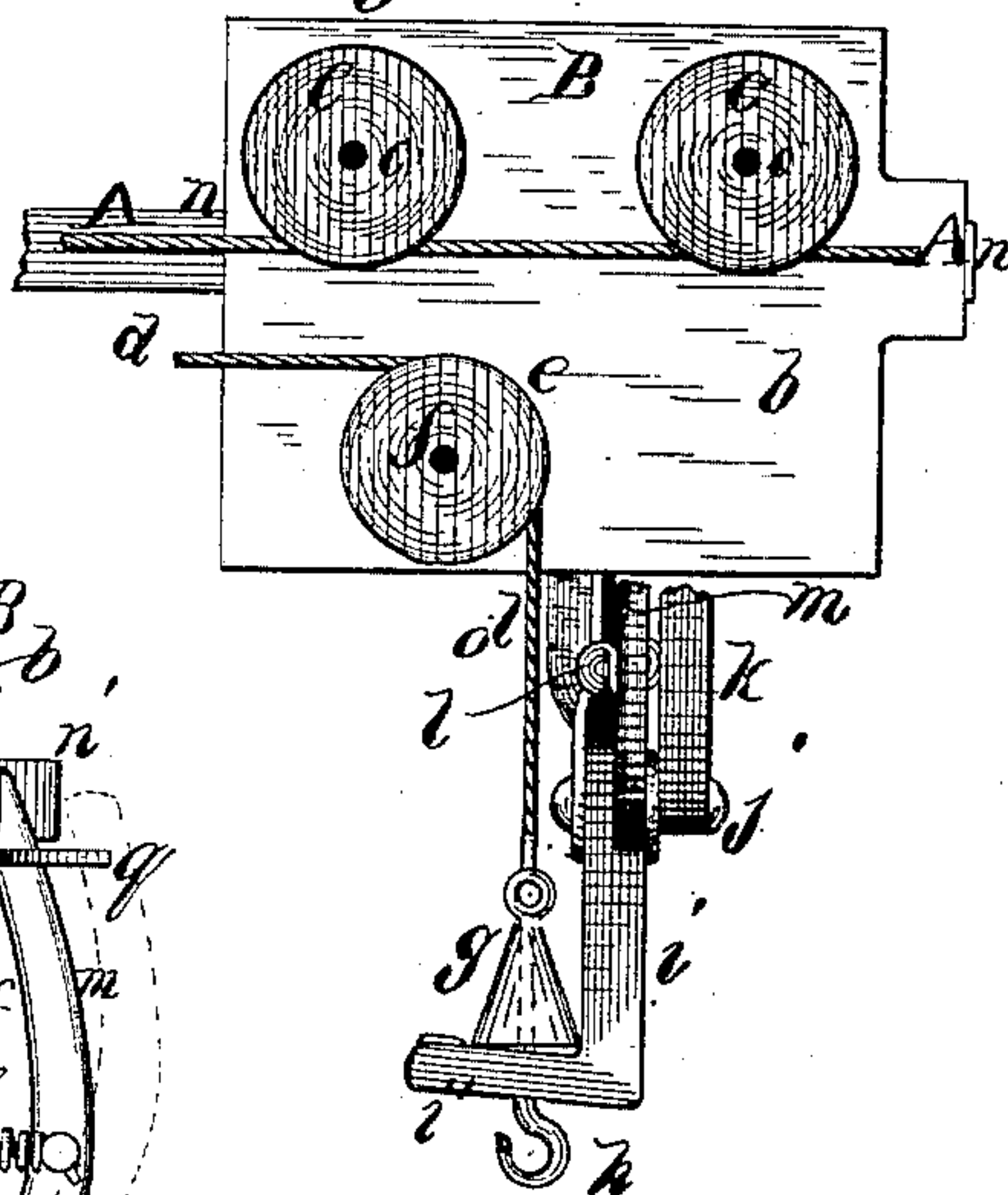


Fig. 3,

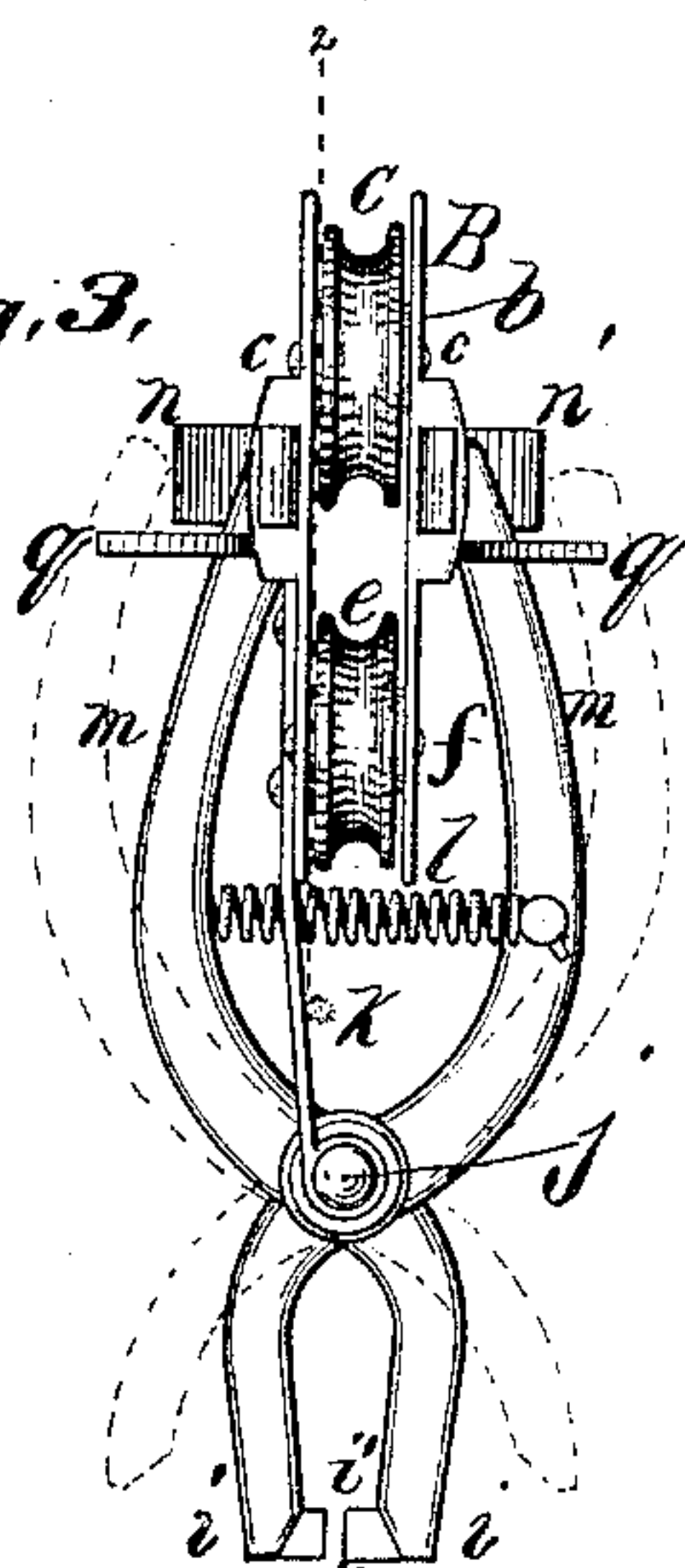


Fig. 4.

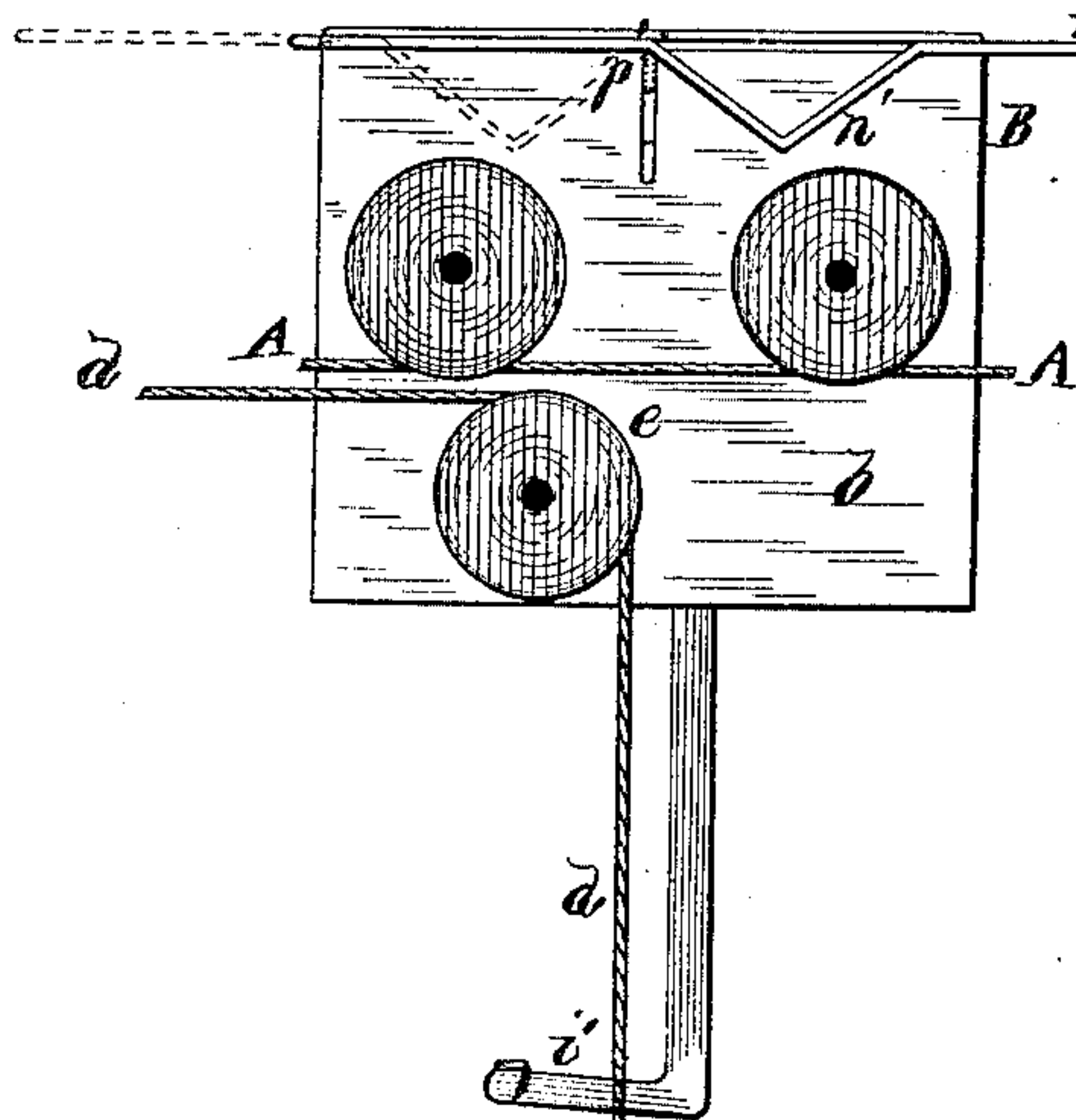
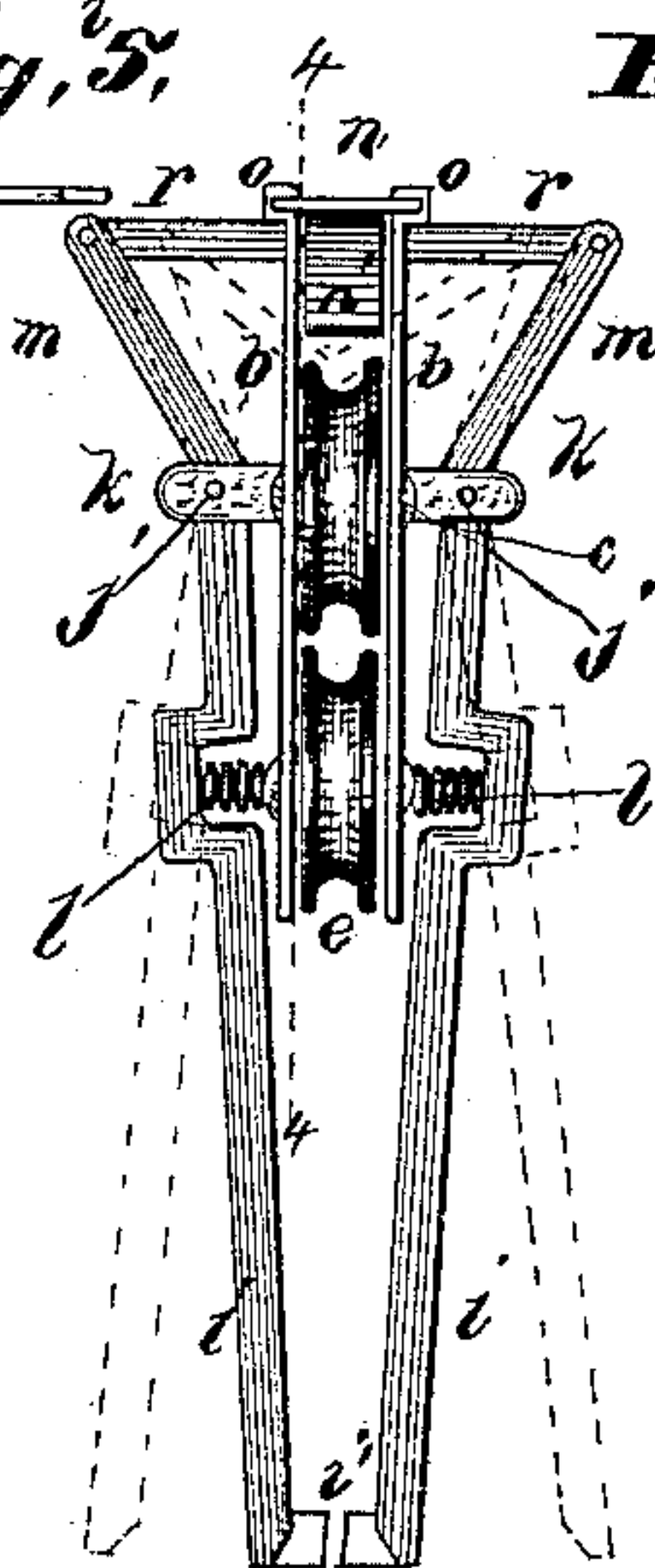
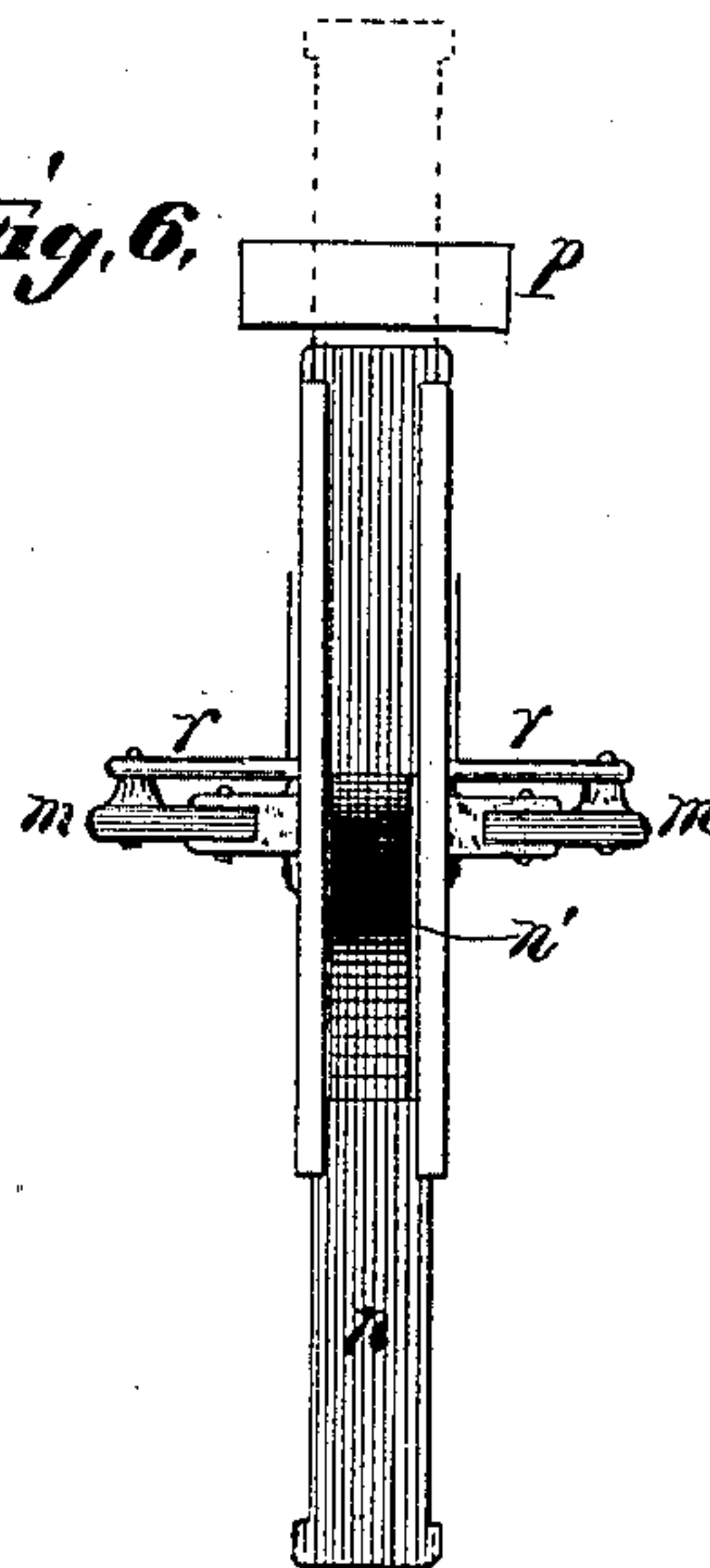



Fig. 5.



Eq. 6,



Attest;

Attest;  g
G. N. Hinckman, Jr.
Geo. Wheelock. Sn

Inventor;

Louis Iyaff

By Knight Bro.

Atty. S.

UNITED STATES PATENT OFFICE.

LOUIS GRAFF, OF ST. LOUIS, MISSOURI.

HOISTING AND CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 338,952, dated March 30, 1886.

Application filed September 28, 1885. Serial No. 178,433. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GRAFF, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Hoisting and Conveying Apparatuses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 This device includes a carriage which is constructed to ride upon a track-cable, and through which passes a hoisting-cable having at the end means for attachment to a freight-platform or other article, and a head fitted to engage on spring jaws or hooks, which are automatically opened to release the head on the carriage reaching a certain position.

Figure 1 is a side view of the carriage. Fig. 2 is a longitudinal section at 2 2, Fig. 3. 20 Fig. 3 is an end view of the carriage. Fig. 4 is a longitudinal section at 4 4, Fig. 5. Fig. 5 is an end view of a modification, and Fig. 6 is a top view of the same.

A is a track-cable, that supports the carriage B by means of two grooved wheels, C, 25 which turn freely on bearings *c*, which in turn have bearing in the sides *b* of the carriage. The bearings *c* may be fixed in the sides *b*, and the wheels turn upon them; or they may be 30 fixed in the wheels and have journal-bearing in the sides *b*.

d is a hoisting-rope passing over a pulley, *e*, supported between the sides *b* on a bearing, *f*. The rope *d* has upon it a metal head, 35 I, which is properly of a conical form, and has projecting from the base a hook, *h*, from which may be suspended a platform or any other object.

i i are jaws, hinged together at *j* in the manner of tongs, the pintle *j* having bearing in hanger K. (See Figs. 1, 2, and 3.)

The modification shown in Figs. 4, 5, and 6 will be described hereinafter.

The jaws have side extensions or hooks, *i'*, 45 over which the base of the head *g* engages when the jaws are closed and the head elevated, as shown in Figs. 2 and 3, so that the hook and its load are sustained from the carriage without the intervention of the rope *d*.

50 *l* is a spiral spring acting upon the upward-

ly-extending arms *m* of the jaws, and whose purpose is to hold the jaws in a closed position. To open the jaws and release the head *g*, I have two cam-bars, *n*, which slide in bearings *o* of the carriage. The upper ends of the 55 arms *m* bear against the cam-bars upon each side, and the cam-bars have outward bends *w'*, which, by pressing against the inside of the arms as the cam-bars move endwise, move the upper ends of the jaw-arms *m* outward and 60 open the jaws *i*, (releasing the head *g* and allowing it to descend.)

The cam-bars are moved by the impingement of their ends against any object, as *p*, Figs. 1 or 6, which is fixed at any desired 65 point in the course of the carriage, so that the head *g* and hook *h* may be allowed to descend when the carriage reaches that point.

q are side guides for the arms *m*.

The outward position of the jaws is shown 70 in dotted lines in Fig. 3.

I will now describe the modification shown in Figs. 4, 5, and 6. In this the arms are pivoted in lugs *k*, extending from the sides of the carriage, and are drawn inward by spiral 75 springs *l*. Their arms are connected by a jointed link or shackle, *r*, hinged at the ends to the arms, and having a central hinge, *r'*, so that the shackle may be bent down at the middle to draw open the jaws *i*, as shown in Fig. 5. 80 This is of course for the release of the head *g*, and the movement is accomplished by a single cam-bar *n*, whose bend *n'* is upon its under side, which acts upon the central part of the shackle as the cam-bar is made to slide 85 endwise by impingement against the object *p* while the carriage is in motion. The cam-bar works in guides *o*.

I claim as my invention—

1. A carriage constructed to run upon a 90 track-rope, and having hinged jaws and a cam projecting from the carriage, with projection acting on the jaws, for the purpose set forth.

2. The carriage B, having hinged to it jaws 95 with hooks *i'*, a hoisting-rope passing over a pulley on the carriage, and having a head constructed for engagement by the hooks *i'*, and carrying a device, as *h*, for the attachment of an object.

3. The combination, in a conveying - carriage, of jaws *i*, with closing-springs and cam-rod sliding in the carriage and projecting therefrom, and having a projection acting on
5 the jaws to open them, substantially as set forth.

4. The combination, in carriage B, of wheels

C, pulley *e*, hoisting-rope with head *g*, spring-jaws *i*, and cams *n*, all constructed substantially as and for the purpose set forth.

LOUIS GRAFF.

In presence of—

SAML. KNIGHT,
JOSEPH WAHLE.