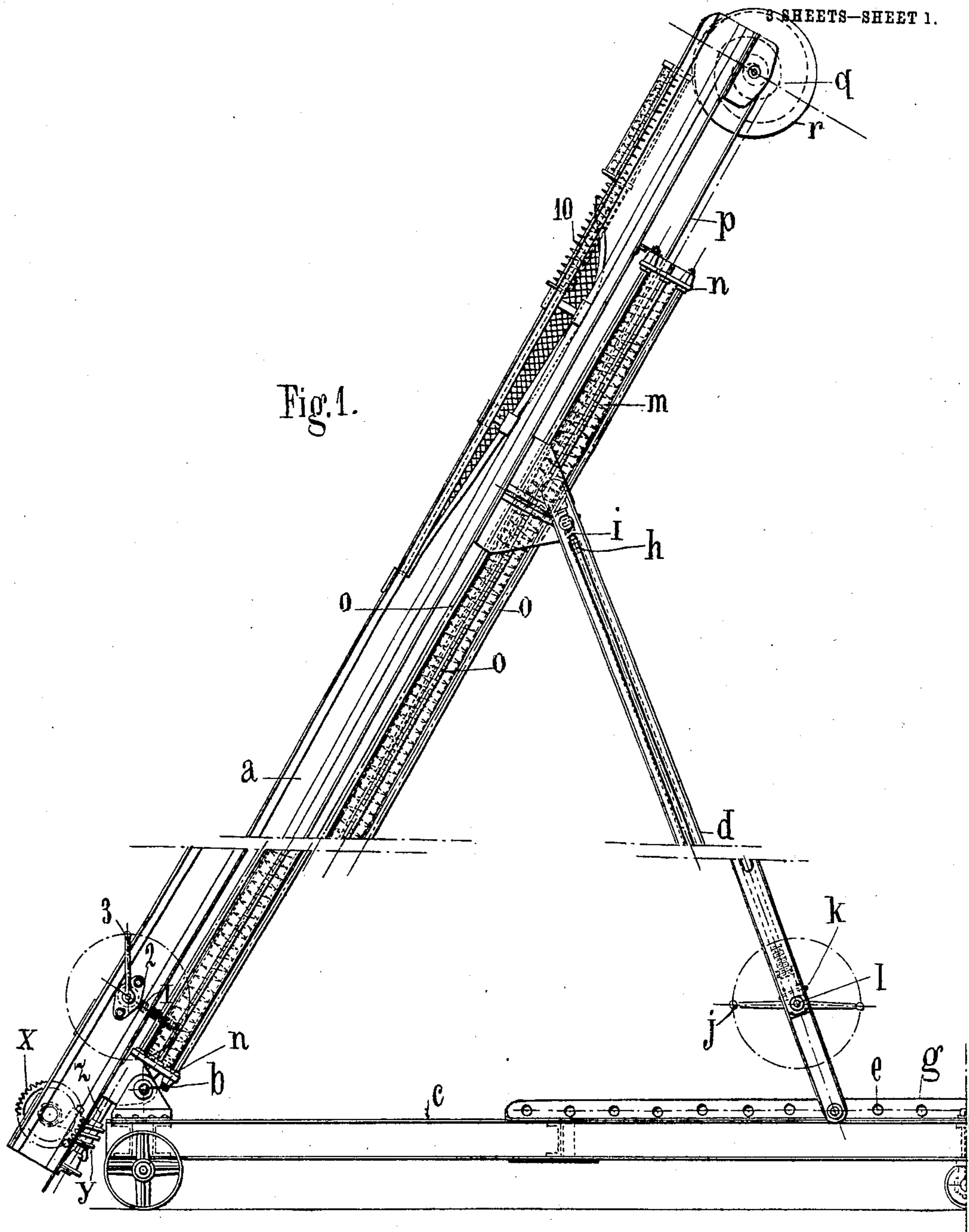


No. 824,506.

PATENTED JUNE 26, 1906.

G. OBIOLS.
THROWING OR PROJECTING APPARATUS.

APPLICATION FILED OCT. 17, 1905.



WITNESSES

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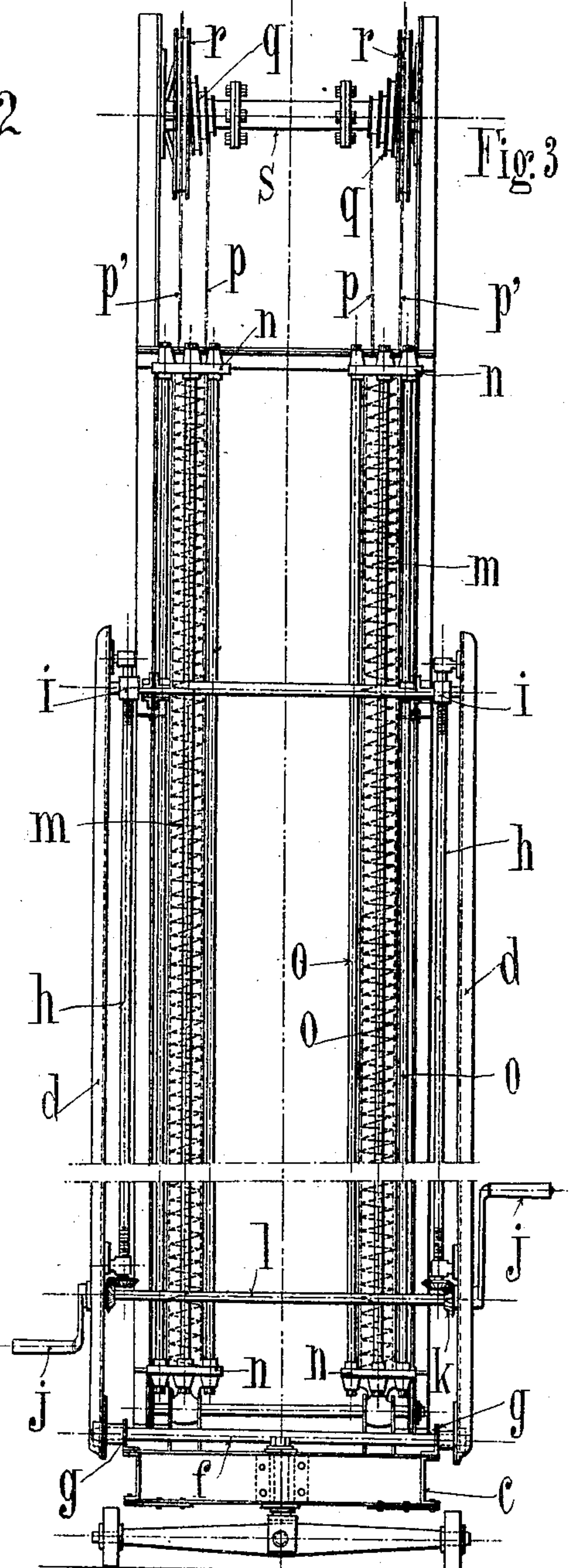
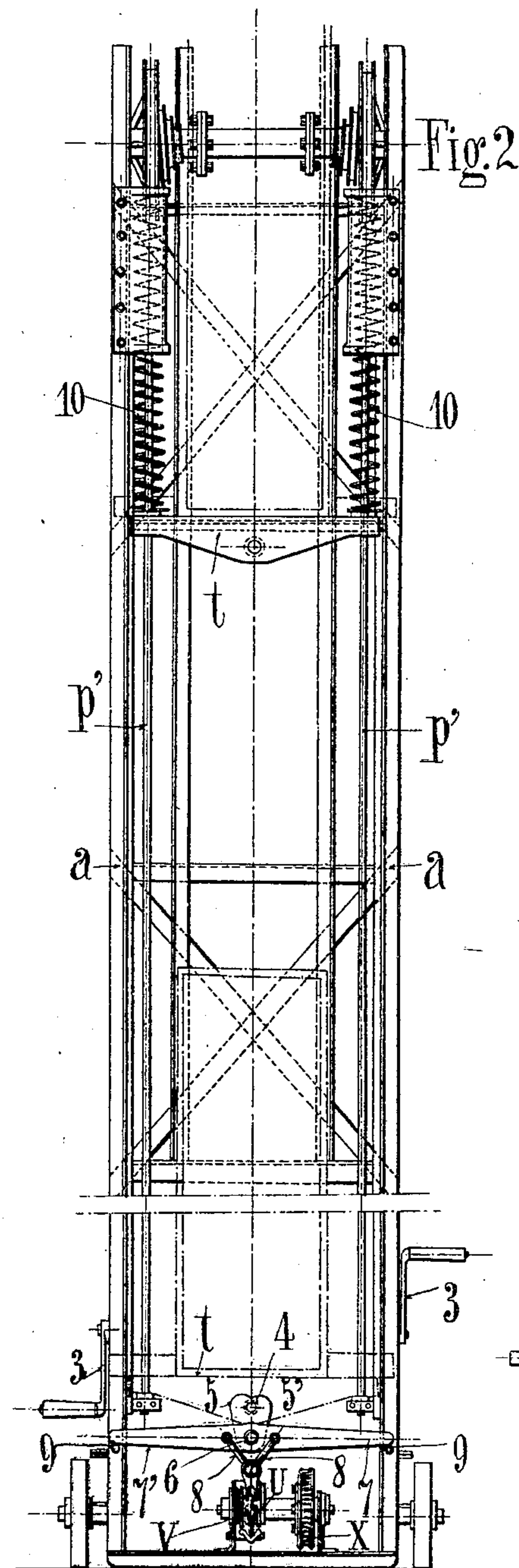
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

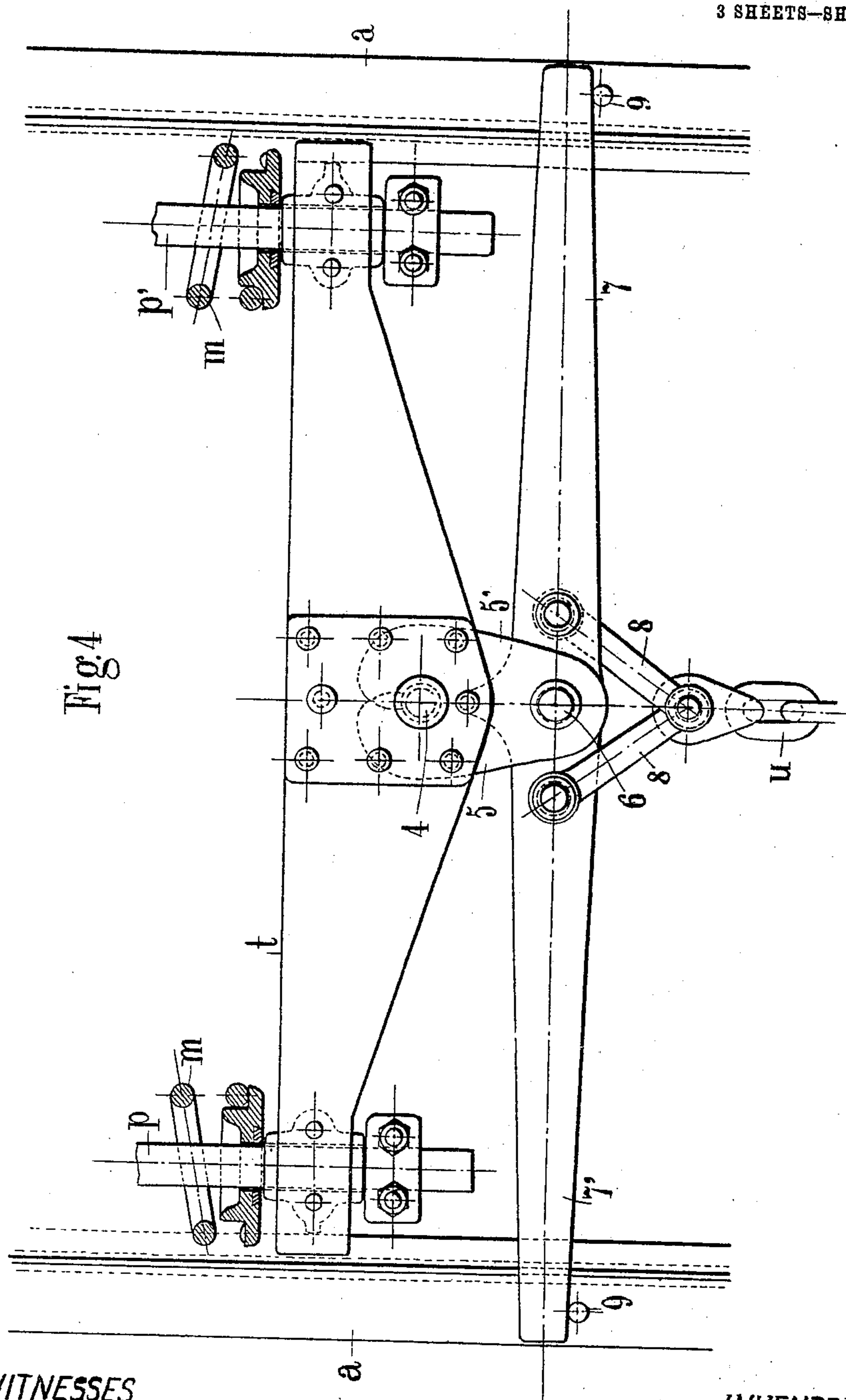


Fig. 4

WITNESSES

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UNITED STATES PATENT OFFICE.

GUSTAVE OBIOLS, OF PARIS, FRANCE.

THROWING OR PROJECTING APPARATUS.

No. 824,506.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed October 17, 1905. Serial No. 283,174.

To all whom it may concern:

Be it known that I, GUSTAVE OBIOLS, a subject of the King of Spain, and a resident of Paris, France, have invented new and useful Improvements in or Relating to Throwing or Projecting Apparatus, which improvements are fully set forth in the following specification.

This invention relates to an apparatus for throwing or projecting in an oblique plane, adjustable so as to bring it more or less near the vertical, articles or individuals arranged in or on a support carrying a frame. The apparatus can therefore be used for throwing packets, cables, &c., as well as animals or human beings.

In order to make the description as clear as possible, an apparatus according to this invention is illustrated, by way of example, in the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a front elevation; Fig. 3, a back elevation, and Fig. 4 a detail drawing.

The apparatus chiefly comprises a jib constituted by two twin beams *a*, stayed and suitably strengthened by means of cross-bars. This jib is pivoted at *b* to a frame *c*, mounted on wheels.

The beams of the jib are held in oblique position by means of stays *d*, which can be secured in adjusted position on the frame *c* by means of a movable pin *f*, which passes through holes *e* in angle-irons *g*, secured to the frame. In addition to this means, which enables the angle of the jib to be modified to a certain extent, each stay *d* is provided with a screw *h*, which can turn in a part *i*, secured to the corresponding beam and constituting a nut. The screws *h* can be turned by means of cranks *j* and bevel-pinions *k*, so that by rotating the spindle *l* of the cranks in one or the other direction the jib is raised or lowered, so that by pivoting about its pin *b* it comes into the desired inclined position.

Behind and extending parallel to the beams *a* are arranged two strong helical springs *m*, each placed in a tube and held by means of heads *n* and rods *o*. These springs are worked by compression, and the bottom end of each is connected to a cable *p*, which passes through the interior of the spring and is wound on a spiral wheel *q*. Each of the cables *p* is controlled by another cable *p'*, which is wound several times on a pulley or drum *r*. The two spiral wheels *q* and the two drums *r* freely rotate on a fixed shaft *s*,

which forms a cross-stay for the upper portion of the beams. The two cables *p'* after leaving the drums *r* are attached to the spring-compressing cross-bar *t* of the carriage. To the same part *t* is also attached, by means of a device hereinafter described, a chain *u*, which winds on the drum *v* of a winch operated by means of a worm-wheel *x*, a worm *y*, rods *z*, and helical pinions 1 2, mounted on perpendicular spindles turned by the cranks 3. The traction exercised on the part *t* of the carriage by the action of the winch causes, therefore, the springs *m* to be compressed against the upper heads *n*.

As already mentioned, the chain *u* is connected to the carriage in a special manner. On examining Fig. 4 of the accompanying drawings giving details of the carriage and of the releasing device, it will be seen that the part *t* is provided with a bolt 4, round which close jaws 5 5', pivoted at 6 and each secured to a lever-arm 7 or 7'. The arm 7 is connected by a rod 8 to the end of the chain *u*, and the arm 7' is connected in the same way to the said chain. The points of attachment of the rods 8 being at equal distances from the pivoting-point 6, it will be understood that a pull exercised on the chain *u* will result in evenly pressing the jaws 5 5' against the bolt 4 and that the stronger the pull the greater pressure will be exercised by the jaws. In these conditions it is obvious that the greater the pressure on the spring the more reliable is the holding device.

The release is effected by continuing to move the cranks in the same direction. When the springs *m* arrive at a point near their maximum compression, the arms 7 7' meet stops 9, arranged on the beams. The pull by the chain *u* continuing, the jaws move apart and allow the part *t* to escape. The carriage driven by the expansion of the springs, moves upward to its original position. The shock at this point is taken up or deadened by springs 10, suitably arranged on the beams.

By altering the position of the stops 9 on the beams it is possible by limiting or increasing the degree of compression of the springs to vary the projecting force of the apparatus, which is of special importance in the projection of packets, cables, &c., the target or place of projection being more or less near the projecting apparatus.

It is important, more particularly in the event of projecting a human being, to be able to apply a constant effort during the whole

travel. That is why the winding-drums for the cables directly connected to the carriage are combined with spiral wheels on which are wound the driving-cables; so that as the action of the springs decreases the leverage supplied by the spiral wheels increases.

The cross-bar *t* can carry either a frame or carriage, enabling the articles to be projected—such as packets, cables, &c.—to be placed on it, or if it is desired to project persons it can carry a support, a strengthening-frame, or any device which can be projected at the same time as the person, or it may simply serve as a support for the person during the travel on the jib. Whatever be the device employed, it can slide on U-shaped or angle-shaped irons suitably arranged on the jib.

I claim—

1. A projecting apparatus comprising a member constituting a guide, a cross-bar guided on said member, springs connected to said cross-bar, cables attached to said springs and movable to compress the same, a winch for operating said cables, and a locking device between said cables and said cross-bar.

2. The combination, with the spring-actuated cross-bar *t* having the pin 4 projecting therefrom, of the pivoted arms 7, 7' having the jaws 5, 5' intended to embrace said pin 4, the traction device for said arms, and the fixed stops 9 for causing the opening of said jaws 5, 5' and their disengagement from the pin 4.

3. In a projecting apparatus, the combination, with a jib, of a carriage-supporting cross-bar guided therealong, means for projecting said bar in upward direction, and springs arranged at the upper end of said jib and designed to limit the upward movement of said cross-bar.

4. In a projecting apparatus, the combination with the springs, and the cross-bar actuated thereby, of the cable and pulley device for energizing said springs, said device embodying the spiral wheels *q* to secure the uniform action of said springs throughout the length of their movement.

5. In a projecting apparatus the combination with a jib, of helical springs extending parallel thereto and fixed at one end, cables passing through the central openings of said springs and connected to the free ends thereof, a projecting device connected to said cables, means for moving said device against the action of said springs and thereby energizing the latter, and means for automatically releasing said device from said means.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GUSTAVE OBIOLS.

Witnesses:

EMILE LEBRET,
H. C. COXE.