

No. 628,493.

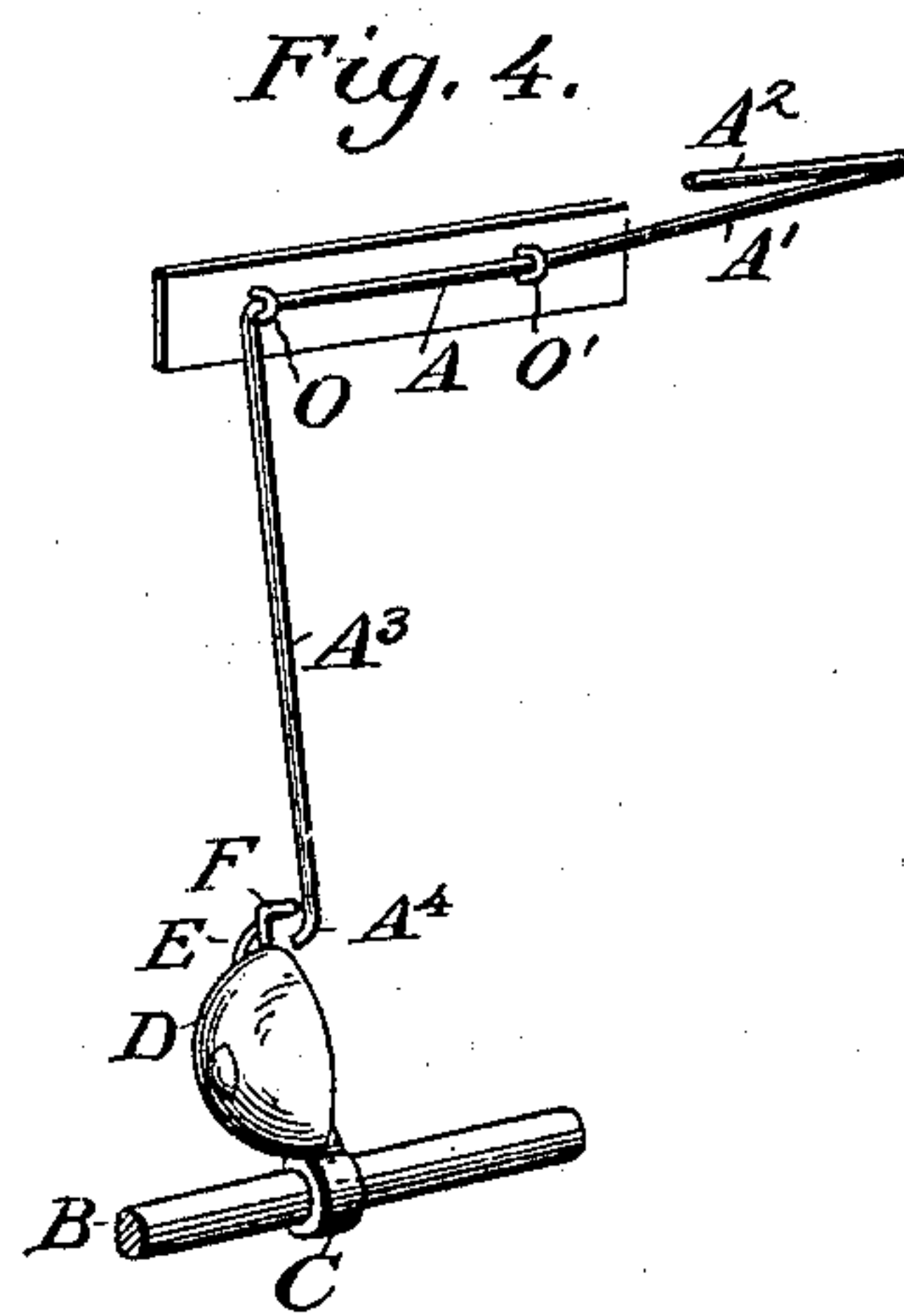
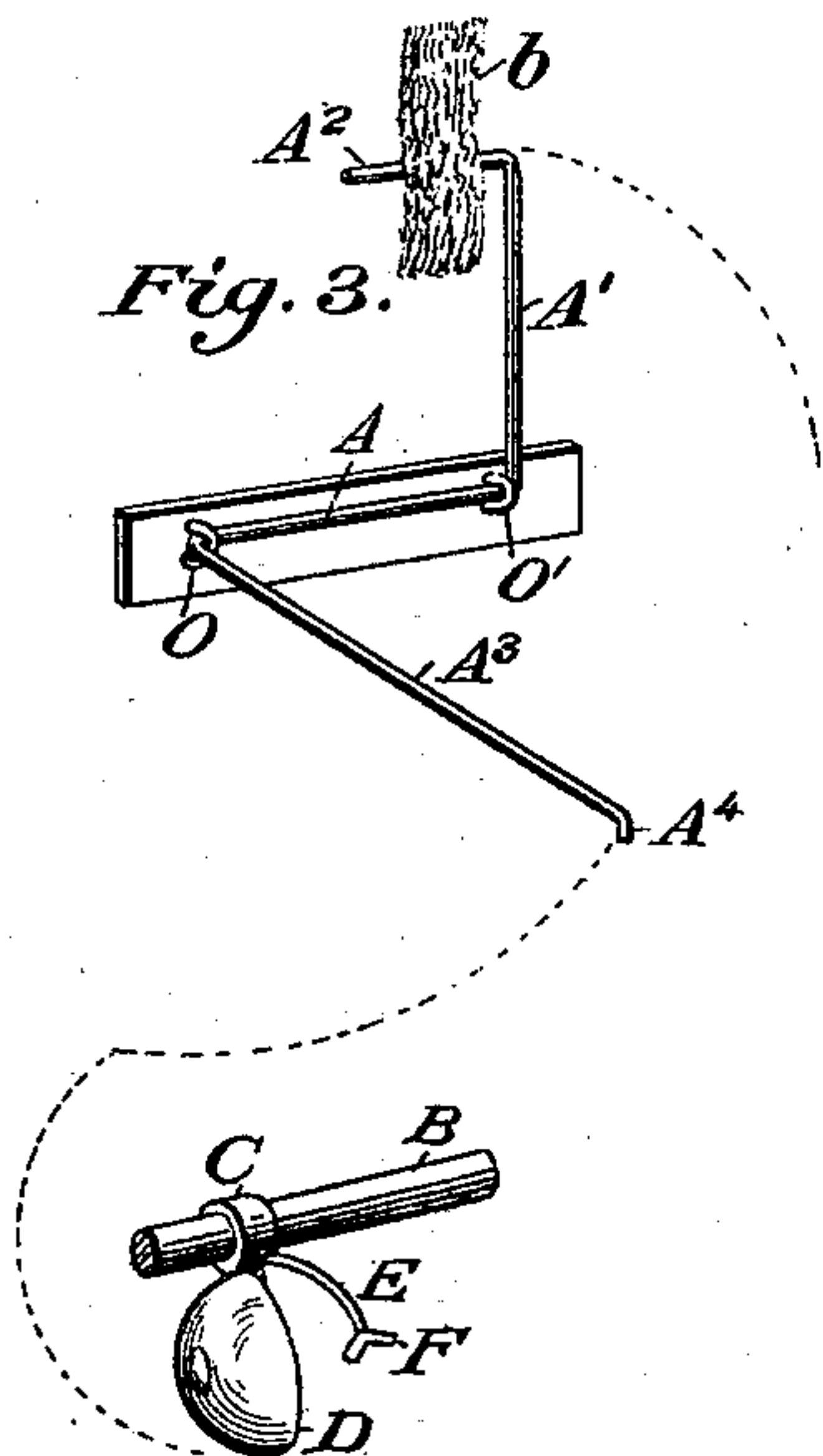
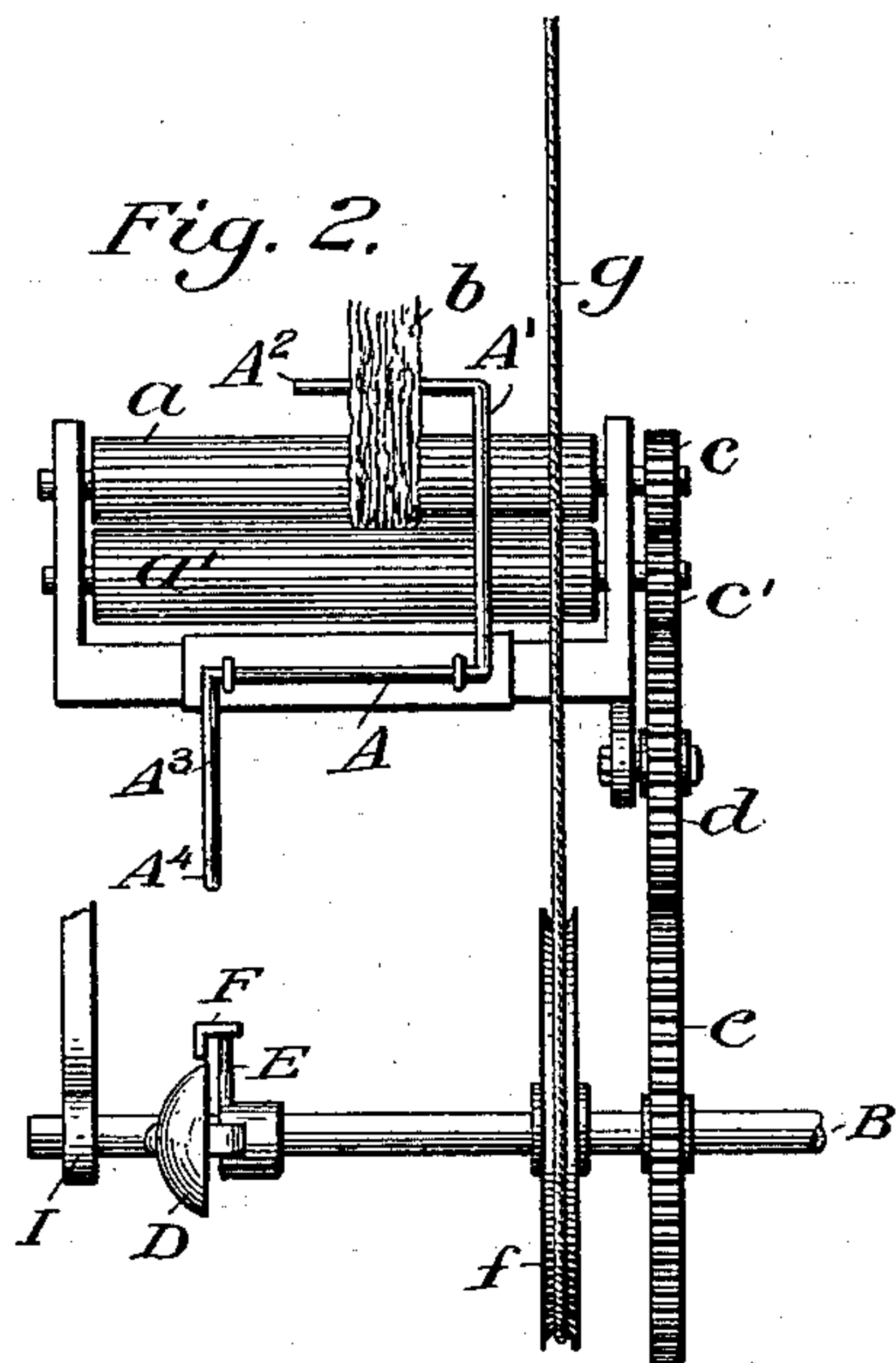
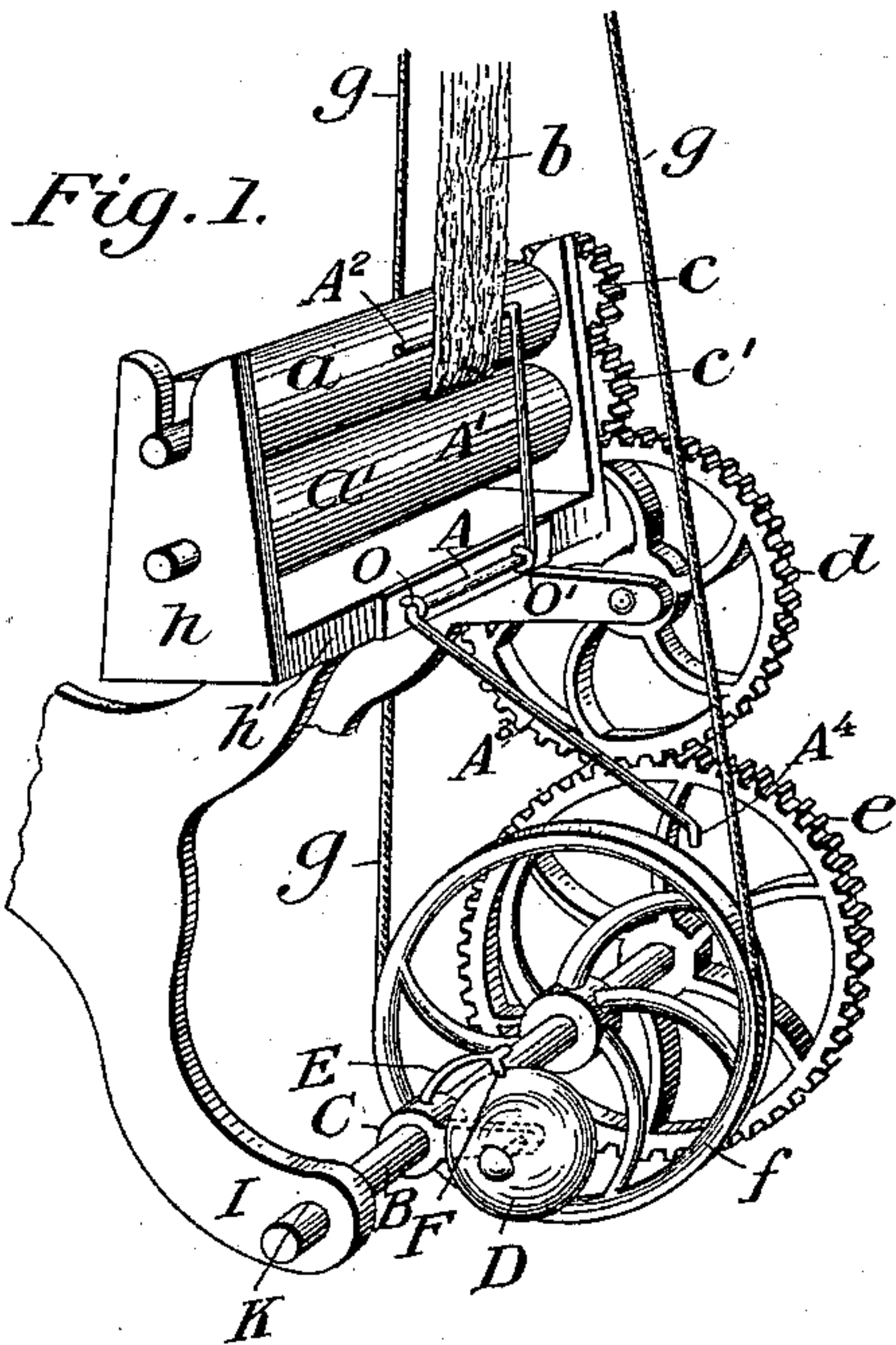
Patented July 11, 1899.

P. H. RUSSELL.

ALARM APPARATUS FOR CARDING ENGINES.

(Application filed Mar. 18, 1898.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

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ALARM APPARATUS FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 628,493, dated July 11, 1899.

Application filed March 18, 1898. Serial No. 674,353. (No model.)

To all whom it may concern:

Be it known that I, PERCY H. RUSSELL, a citizen of the United States, residing at Sangerville, in the county of Piscataquis and State of Maine, have invented certain new and useful Improvements in Alarm Apparatus for Woolen Carding-Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to alarms attached to woolen carding-engines at the point of discharge of the sliver from the machine to announce a break in the work requiring the attention of the operator.

It consists of a new and improved construction and arrangement of parts fully described below and illustrated in the accompanying drawings, whereby the object is accomplished with greater efficiency than has heretofore been secured.

In the accompanying drawings similar letters represent the same parts of the invention.

Figure 1 is a perspective view of that portion of a carding-engine from which the work is delivered, showing my invention as applied to the ordinary working parts of such a machine and acting in combination with them. Fig. 2 represents a full face view of the same. Fig. 3 represents the parts of my invention separate from the other portions of a carding-machine, the position of the parts being normal or in readiness for an alarm should a break occur. Fig. 4 represents the same in position of giving an alarm after a break in the work.

In Fig. 1, *a a'* represent the draw-rolls as usually arranged on carding-engines to receive the product from the doffer and deliver it from the machine. *b* is the sliver or "drawing" carried upward from the draw-rolls as fast as delivered to be fed into another machine in the usual process of manufacture. *c c'* are toothed gear-wheels which revolve the

draw-rolls *a a'*. *d* and *e* are toothed gears conveying power to the wheels *c c'*. *f* is a driving-pulley taking power from above by means of the belt *g g* and by means of which the gears *c*, *c'*, *d*, and *e* are operated. *h h'* *h''* is the frame in which the draw-rolls *a a'* are journaled, all as usually arranged in carding-engines.

A is a horizontal shaft or rod journaled in the bearings or supports *O O'*, which are attached to the bottom of the draw-roll frame *h h'*. *A'* is an arm attached to the shaft *A*, at right angles thereto, outside the support *O'*, and *A²* is an arm, called the "feeler-wire," attached to *A'* at its outer end and turned inward parallel to the shaft *A*. *A³* is an arm attached to the opposite end of the shaft *A*, outside the support *O'*, at right angles with *A*, but as compared with *A'* in a direction forming an obtuse angle.

A⁴ is a hook or turned end at the outer extremity of the arm *A³*.

B is a continuation of the shaft carrying the driving-pulley *f* and the toothed gear *e*, the same being journaled at *K* in the support *I*.

C is a collar upon the shaft *B*, held fast by means of a set-screw and having an arm, as shown by the dotted lines, and *D* is an alarm-bell or gong-cup attached to said arm *C*.

E is a spring attached to the arm or collar *C*, holding a hammer near to the bell *D*, and having a projecting finger *F* near said hammer.

The parts *A*, *A'*, *A²*, *A³*, and *A⁴* although so far described as separate pieces attached to each other are really as constructed one piece, the rod being bent so as to form the whole. The lower portion *A³* and *A⁴* is of such weight that when the upper portion *A'* and *A²* are not held upright it will cause the portion *A* to turn automatically in its bearings, the upper arm *A'* *A²* falling outward and the lower arm *A³* and *A⁴* downward toward the shaft *B*.

The alarm-bell or gong-cup *D*, collared to the shaft *B*, revolves around it as the shaft turns. Its position on the shaft is so arranged with regard to the arm *A³* and the curve or hook *A⁴* that when the hooked end drops by gravitation the hook *A⁴* catches the finger *F*

of the spring and hammer E, drawing it back, and then releases it, when the spring throws the hammer against the gong-cup D, repeating this catching, releasing, and striking with every revolution of the shaft as long as the arm A³ and A⁴ remains down.

In operation the arm A³ A⁴ is held up away from contact with the finger F by passing the sliver or drawing b in front of the feeler-wire A². So long as the sliver or drawing is continuous or unbroken the arm A³ A⁴ is held upright. Whenever it breaks, the feeler-wire is released, falls forward, and the arm A³ A⁴ falls into contact with the alarm, as shown by the dotted lines k k', Fig. 1.

The alarm as described is attached to woolen carding-engines at the point where the work called the "sliver" or "drawing" is delivered from the machine through the draw-rolls for the reason that a break in the work rarely ever occurs at any other place in its passage to the feeding-table of another machine. By thus early sounding an alarm the defect is discovered and easily mended long before the

broken end reaches and disarranges the feeding apparatus of the next machine.

Having thus fully described my invention and its working, what I claim, and desire to secure by Letters Patent, is—

A pivoted rod attached to a carding-engine near the draw-rolls, having an arm carrying a feeler-wire adapted to normally be upheld by the sliver when the drawing is unbroken, and a second arm carrying a hook at its extremity, adapted to drop downward by gravity whenever the feeler-wire is released by a break in the drawing, all in combination with a revolving shaft carrying an alarm-bell adapted to be sounded by contact with said hook at each revolution when the same has dropped downward; all as described and set forth.

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

PERCY H. RUSSELL.

Witnesses:

F. D. DEARTH,
W. E. BREWSTER.