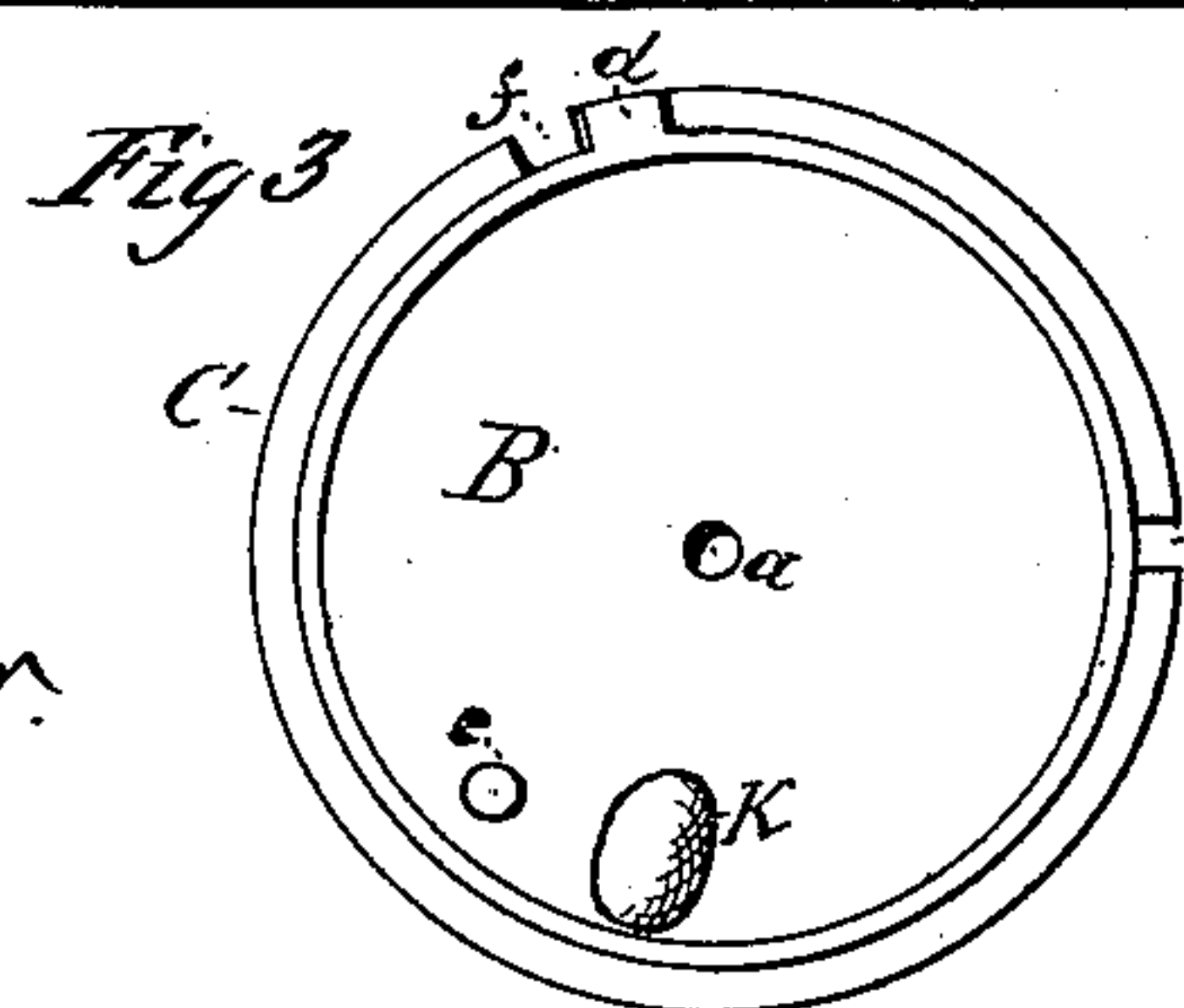
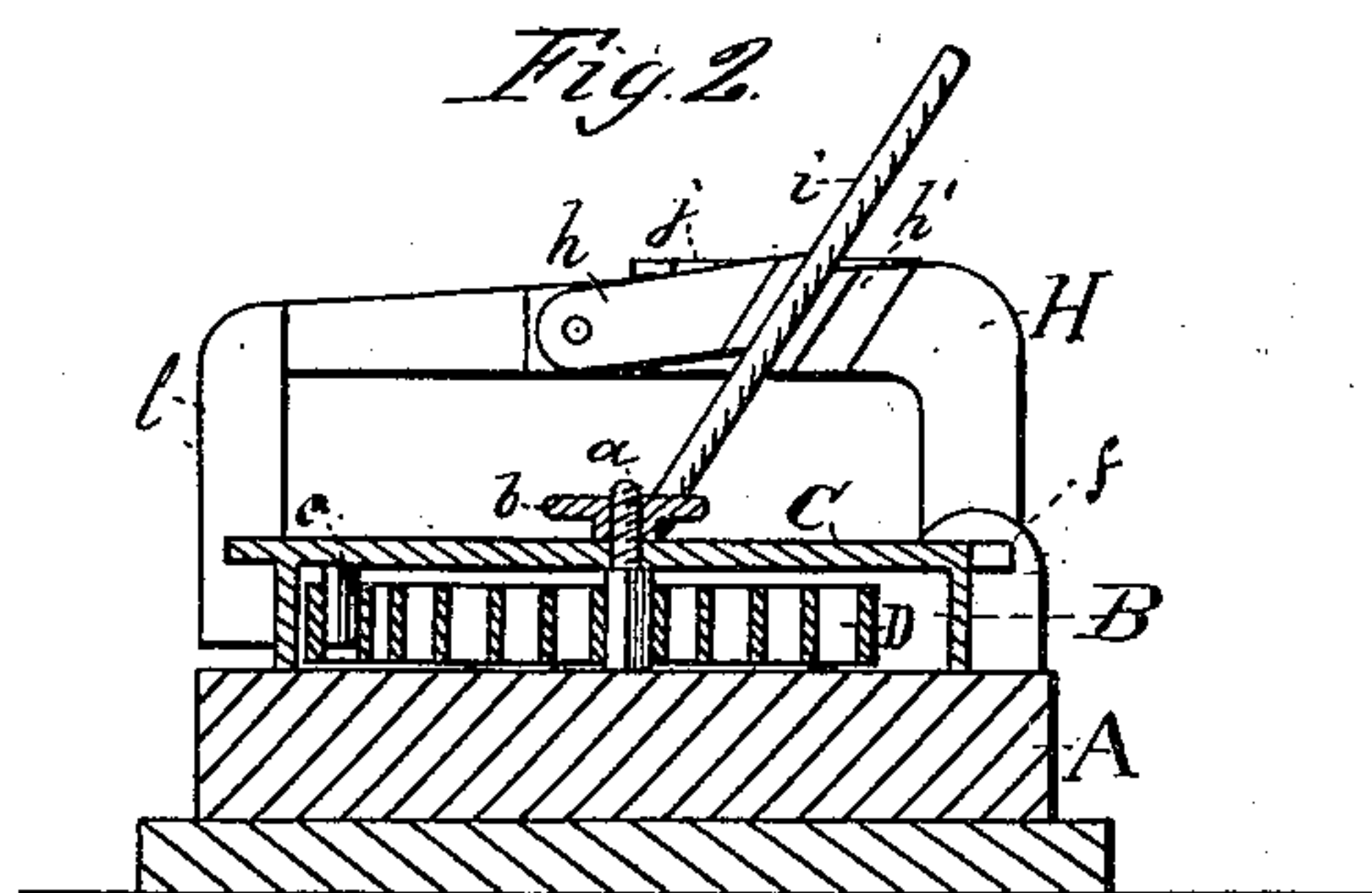
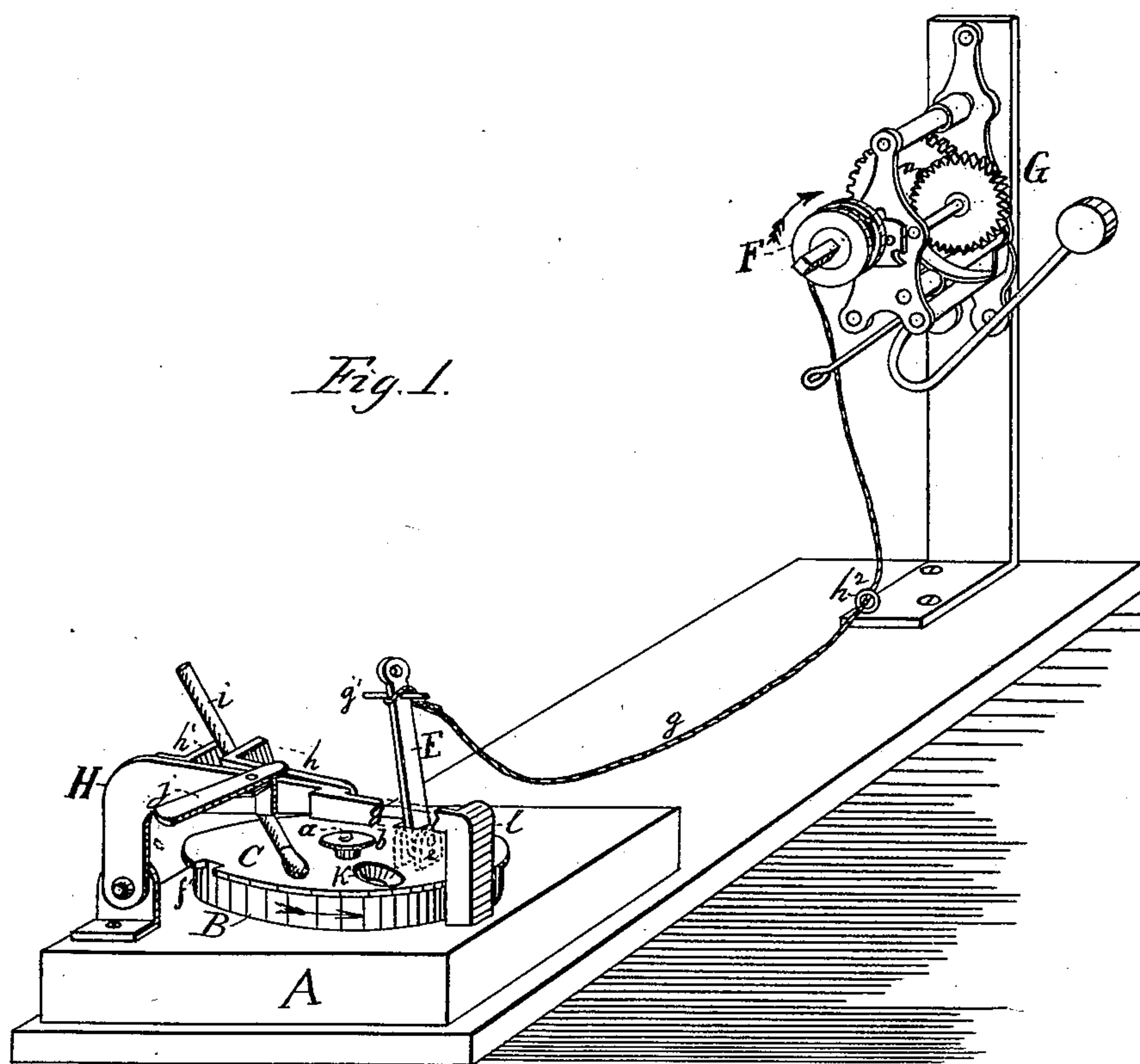


E. H. DOESCHER.
Automatic Fire Lighter.

No. 230,758.

Patented Aug. 3, 1880.



Witnesses:
F. B. Townsend
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UNITED STATES PATENT OFFICE.

EIBE H. DOESCHER, OF HOMESTEAD, IOWA.

AUTOMATIC FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 230,758, dated August 3, 1880.

Application filed January 23, 1880.

To all whom it may concern:

Be it known that I, EIBE H. DOESCHER, of Homestead, in the county of Iowa and State of Iowa, have invented certain new and useful Improvements in Automatic Fire-Lighters, of which the following is a specification.

The object I have in view is to produce an automatic fire-lighter which will have within itself the power to ignite the match when released for operation, and will be set in motion by the alarm of a clock at the same time that the alarm is sounded, the said fire-lighter being also certain in its action and simple, compact, and cheap in construction, and being further capable of ready detachment from the clock when not in use.

My invention therein consists in the combination of the revolving match-lighting disk with the operating-spring inclosed by such disk; in the combination, with such disk, of the locking-lever which is released by the movement of the alarm of the clock; in a pulley or wheel on the winding-stem of the alarm movement of a clock, which is connected by a cord to the locking-lever, whereby the winding up of the alarm will unwind such cord and the unwinding or sounding of the alarm will wind up said cord and pull the locking-lever; in the peculiar construction of the match-holding device; and, further, in the combination of the principal parts of my automatic fire-lighter, all as fully hereinafter explained.

In the accompanying drawings, forming a part hereof, Figure 1 is a perspective view of the device, showing the attachment of the same to the alarm-movement of a clock; Fig. 2, a sectional view of the match-lighting disk, showing the match-holding device in elevation, and Fig. 3 a bottom view of the match-lighting disk.

Like letters denote corresponding parts in all three figures.

A is a small block of any convenient shape, and made preferably of metal. Upon the center of this block is mounted a circular case, B, with an open bottom resting on such block, and a closed top, forming the match-lighting disk C, which is provided with a frictional surface.

A stud, *a*, passes from the block centrally up through the disk C, and has a holding-nut, *b*, on its upper end.

A coil-spring, D, is inclosed by the case B, and has one end connected with the stud *a* and the other end with a pin, *c*, projecting downwardly from the disk C.

The disk C may be lined on the inside with a piece of wood or other non-conducting material, to protect the spring from the heat of the fire.

The spring is prevented from wholly unwinding by a lug, *d*, on the case B, which comes in contact with a stud, *e*, on the block A, which stud *e* is shown in dotted lines in Fig. 1. This stud and the lug also prevent the disk from being turned more than once around.

To the stud *e* is pivoted a locking-lever, E, which engages, when in a vertical position, with one of a series of notches, *f*, in the rim of the disk C. This locking-lever is removably connected by a cord, *g*, with a wheel or pulley, F, on the winding-stem of an alarm-movement, G, such wheel or pulley being situated either within or outside of the alarm frame or case.

Only the alarm-movement is shown, it being understood that the other parts of the clock are of the ordinary or any desired construction, and inclosed in a case, as usual.

The cord *g* passes through an eye, *h*², on the clock-case, or on the wall below the clock, or through a hole in the clock-case, to guide it to the wheel F. Its other end has a loop which is placed over the head of the locking-lever, and is prevented from dropping down on the same by a cross-pin, *g'*. This loop-connection permits the cord to be disengaged from the lever when the same drops down, so that the alarm can continue to turn after the lighting-disk is released.

The winding up of the alarm unwinds the cord *g* from the wheel F, while the sounding of the alarm will wind up such cord upon the wheel F, and will draw the locking-lever out of engagement with the match-lighting disk.

To the block A, close to the case B, is pivoted an angular arm, H, having secured to one side and projecting over the disk C an inclined plate, *h*, with which engages a similar plate, *h'*, on an arm, H', pivoted to the side of the arm H. These two plates *h h'* form jaws for holding the match *i* in an inclined position, as shown, and are clamped upon the match by a pivoted catch, *j*.

The disk C is provided with a depression, *k*, into which the match drops when ignited, and a weight, *l*, on the end of the arm H strikes the block and prevents the match from coming into contact with the bottom of this depression at the same time that it increases the friction of the match on the lighting-disk.

To use my automatic fire-lighter the alarm of the clock is set at the hour it is desired to light the fire. A match is secured in the holder, which can be thrown back out of the way of the disk, and the disk is then turned around against the force of the spring and is locked by the lever. The match is dropped upon the disk, the loop of the cord is slipped over the head of the lever, and the whole device is placed in the stove under the grate, a piece of paper being drawn down through the grate or placed over the match so as to be lighted thereby.

When the alarm-movement is released by the clock the alarm sounds, the cord is wound upon the wheel F, the locking-lever is drawn from engagement with the lighting-disk, the lighting-disk is released, and, turning, ignites the match, the cord is drawn out of the stove away from the fire, and the alarm continues to turn till run down. At any time after the fire is lighted the block and its attachments can be removed from the stove and the string coiled up out of the way.

What I claim as my invention is—

1. In an automatic fire-lighter, the match-lighting disk, in combination with an operating-spring inclosed thereby, substantially as described and shown.

2. In an automatic fire-lighter, the match-lighting disk and the inclosed operating-spring, in combination with a lever for locking said

disk, such lever being connected with a clock, so as to be operated to release the disk at a predetermined time, substantially as described and shown.

3. In an automatic fire-lighter, the combination, with the match-lighting device, of a wheel on the winding-stem of the alarm-movement of a clock, and a cord connecting such wheel with the said match-lighting device, to release the same when the alarm is sounded, substantially as described and shown.

4. In an automatic fire-lighter, the combination of the spring match-lighting disk, the locking-lever for holding such disk against the pressure of its spring, and a wheel on the alarm-movement of a clock, connected by a cord with such locking-lever, substantially as described and shown.

5. In an automatic fire-lighter, the match-holding device, consisting of the pivoted arm H, having inclined plate *h*, the pivoted arm H', with plate *h'*, the pivoted catch *j*, and the weight *l*, for increasing the friction and for supporting the end of the match above the bottom of the depression in the lighting-disk, substantially as described and shown.

6. The automatic fire-lighter described, consisting of a portable block carrying a revolving spring match-lighting disk, a lever for locking such disk, and a pivoted match-holder, in combination with an alarm-clock having a wheel on the winding-stem of the alarm-movement, which is connected with the said locking-lever, substantially as set forth and shown.

EIBE HENRY DOESCHER.

Witnesses:

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