

(No Model.)

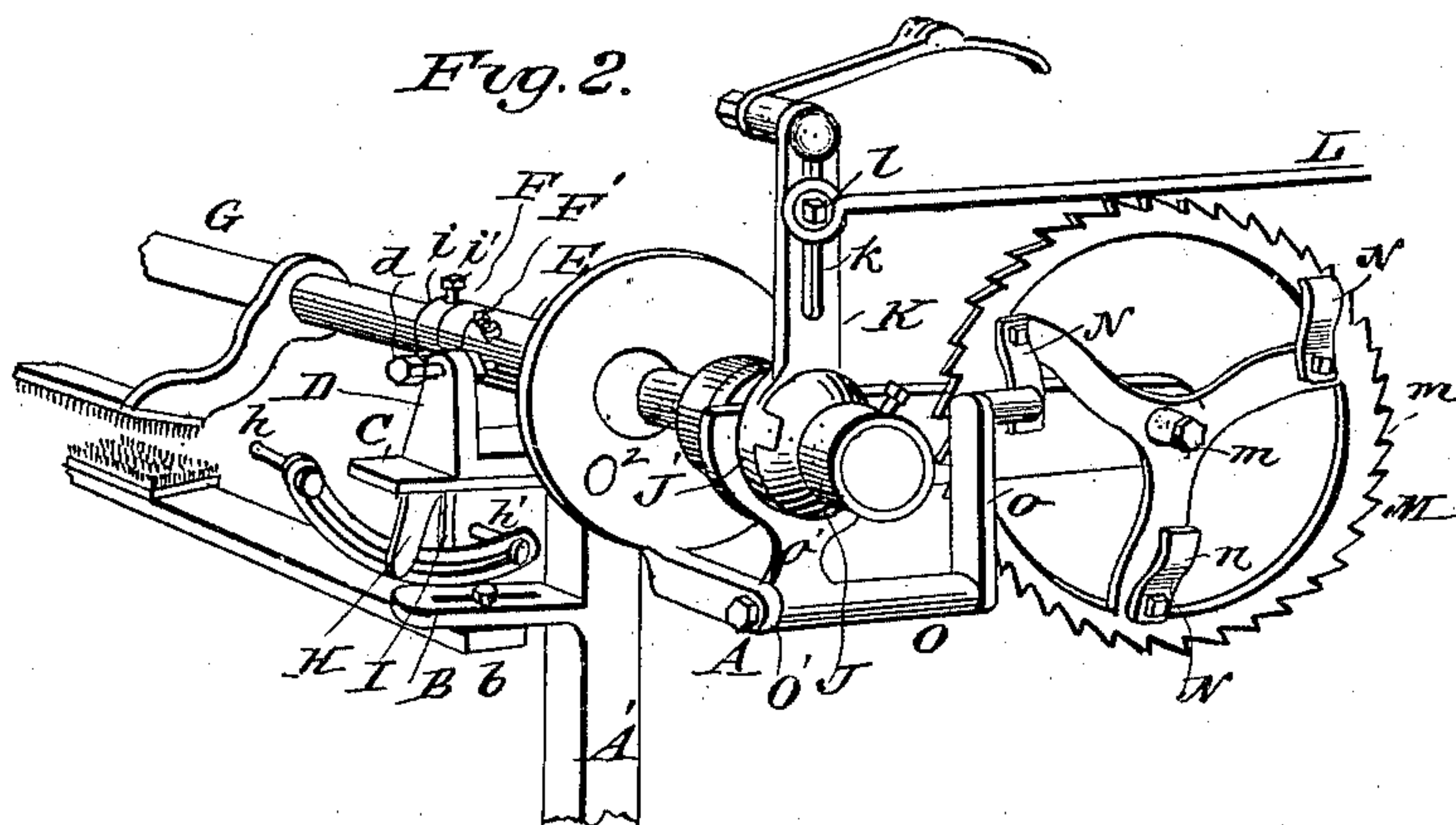
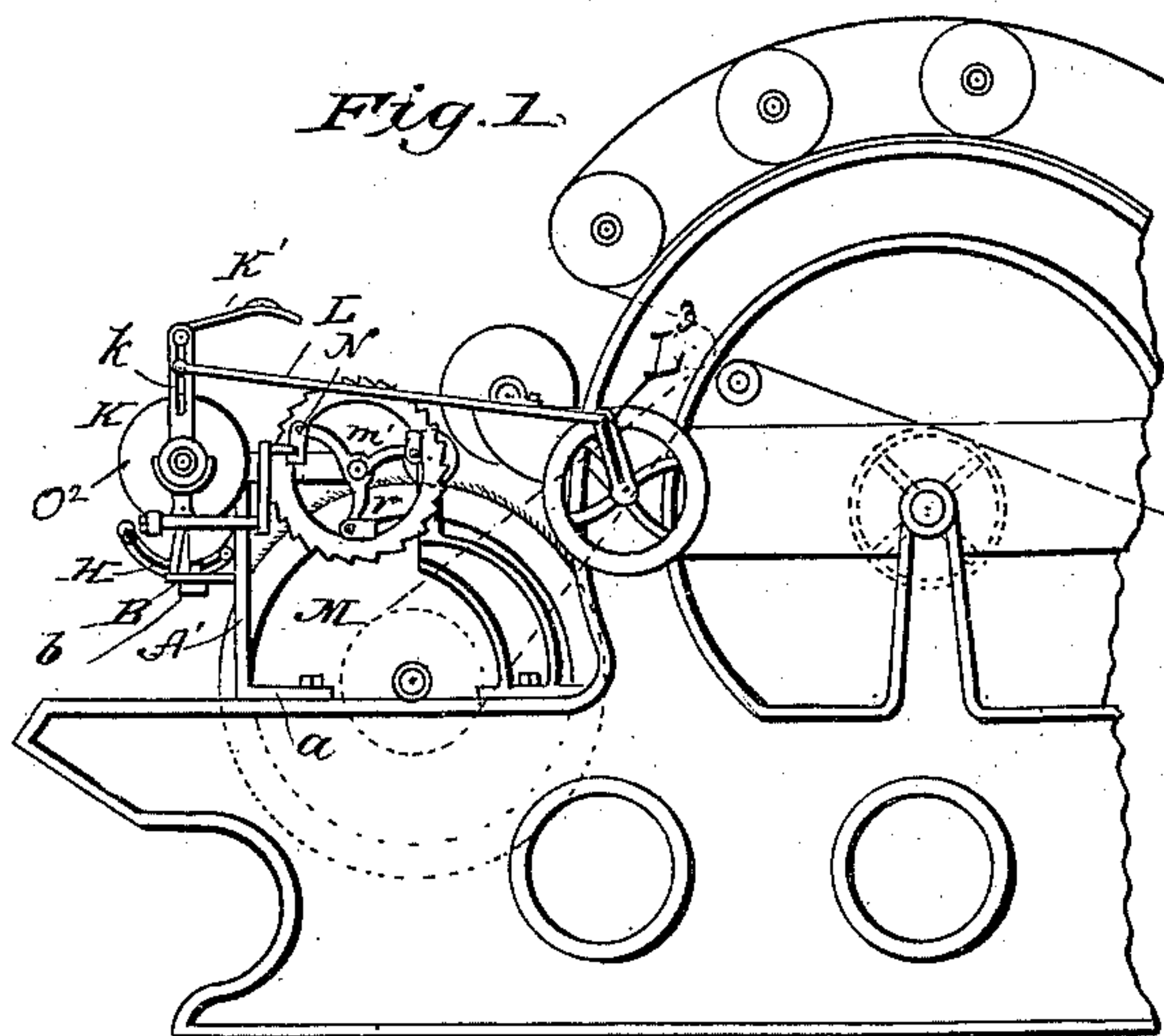
2 Sheets—Sheet 1.

G. BEBB.

DOFFER CLEANER FOR CARDING MACHINES.

No. 401,811.

Patented Apr. 23, 1889.



WITNESSES:
Fred G. Dieterich
P. B. Turpin.

INVENTOR,
Geo. Bebb
BY *Munn & Co*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

G. BEBB.

DOFFER CLEANER FOR CARDING MACHINES.

No. 401,811.

Patented Apr. 23, 1889.

Fig. 3.

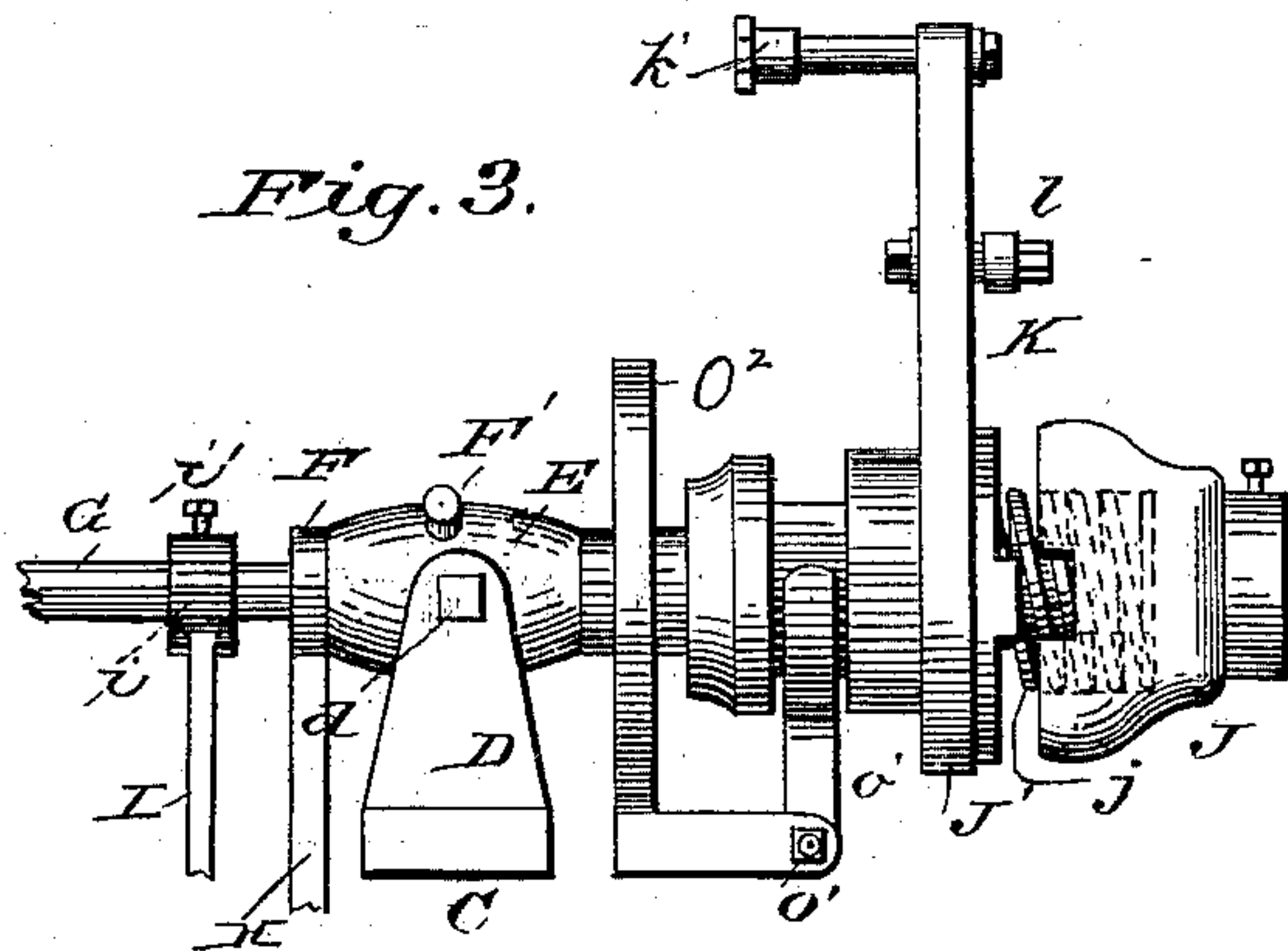


Fig. 4.

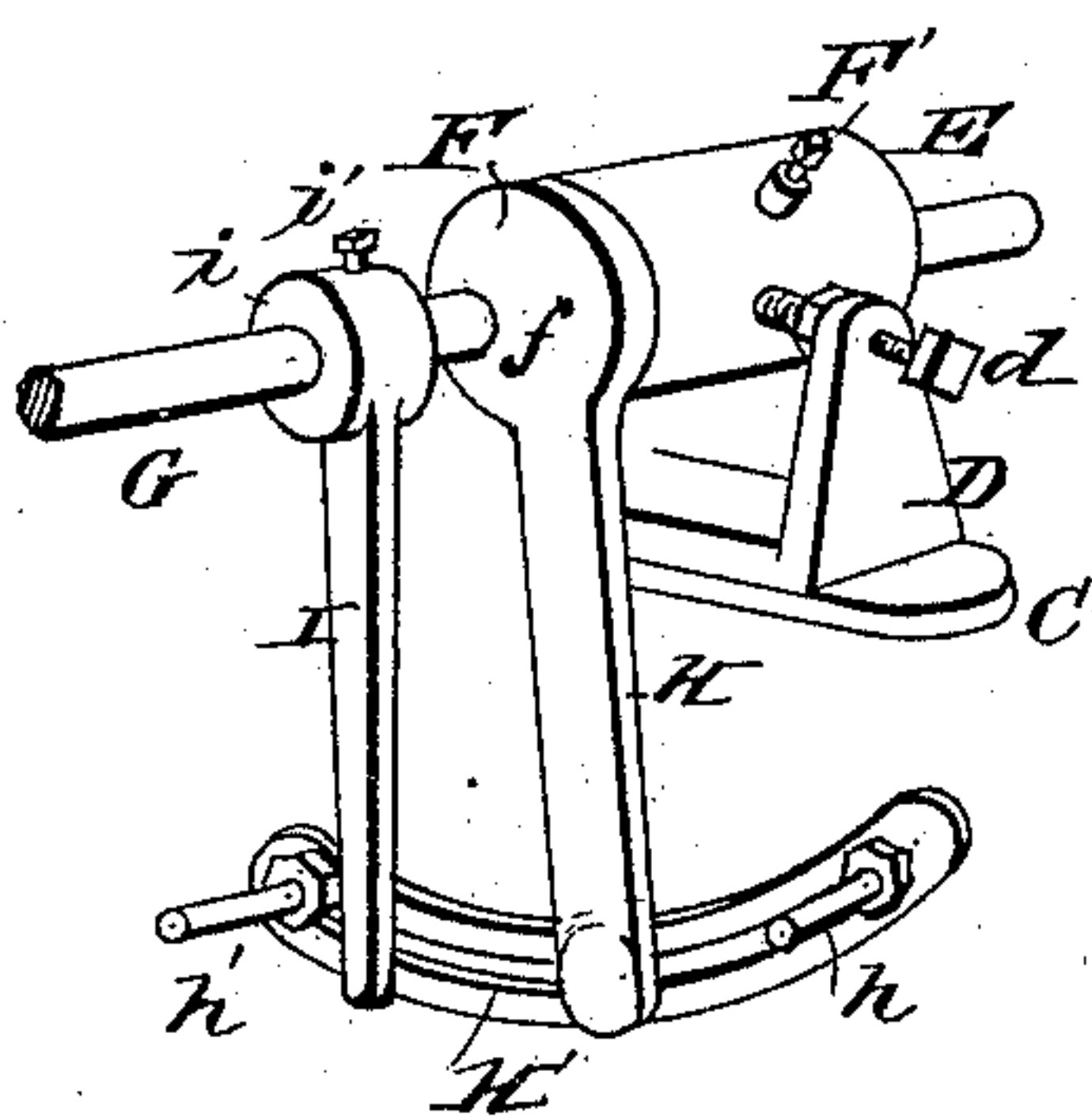
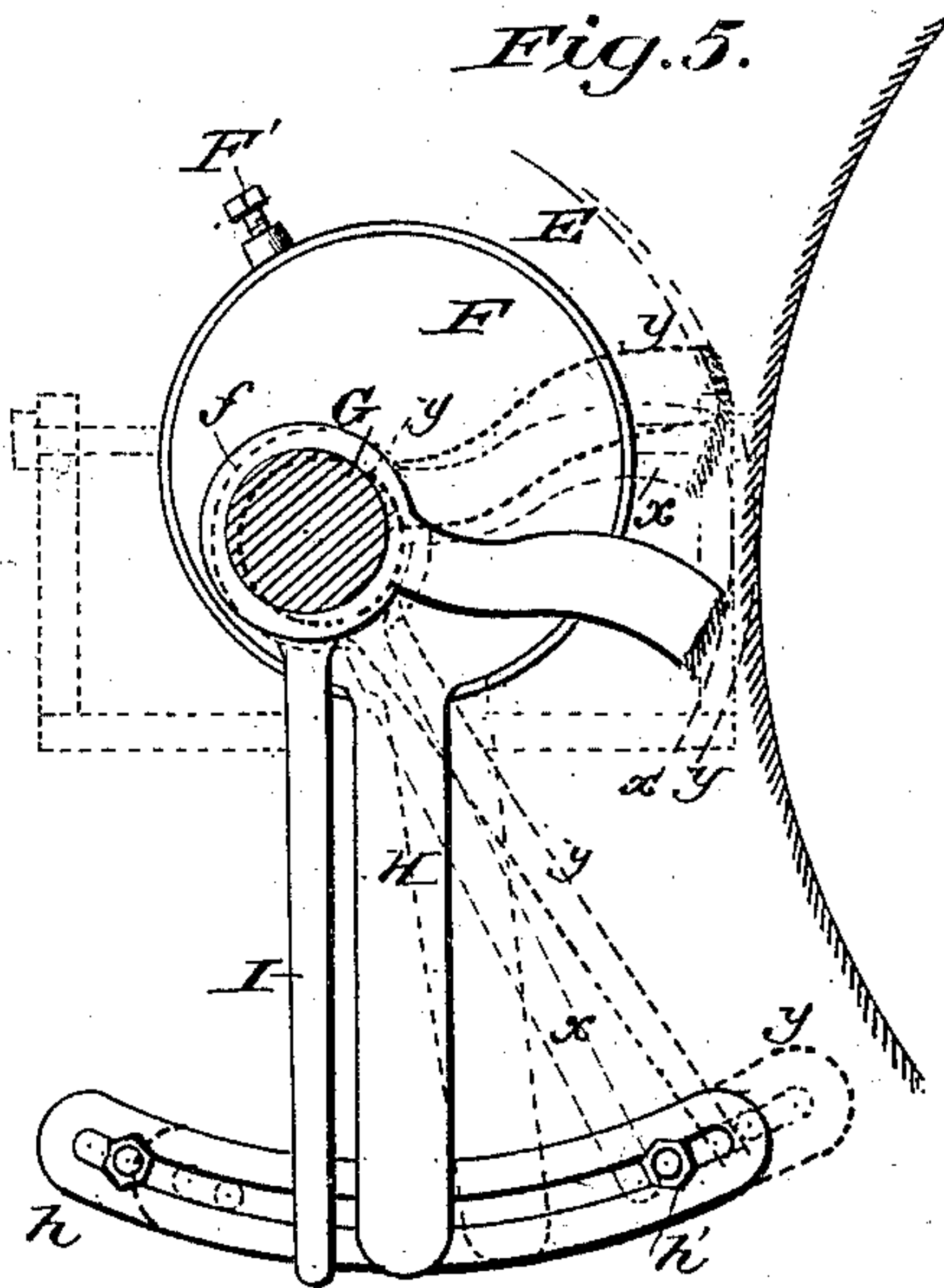


Fig. 5.



WITNESSES:

Fred G. Dieterich
P. B. Surpin.

INVENTOR.

Geo Bebb
BY *Munn & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE BEBB, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO GEORGE MERRITT
AND WORTH MERRITT, OF SAME PLACE.

DOFFER-CLEANER FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 401,811, dated April 23, 1889.

Application filed March 16, 1888. Serial No. 267,422. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BEBB, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful
5 Improvement in Doffer-Cleaners for Carding-Machines, of which the following is a specification.

My invention is an improvement in doffer-cleaners for machines for carding woolen and
10 cotton fibers, and relates particularly to that class of such cleaners in which a cleaner-bar having card-clothing is supported so that it may be swung alternately in contact with the doffer and with a stripping-bar. In such de-
15 vices as heretofore constructed the swinging cleaner has been continuously operated, and has been moved or swung about an unchanging or unvarying center of motion. The continuous operation of such cleaner has been found
20 objectionable, for the reason that it resulted in too much wear on the card-clothing of the doffer, and also effected a combing out of too much clean fiber. The moving of the cleaner-bar about a fixed or unchanging center has
25 also been found objectionable, in that in passing in its upward forward movement through the card-clothing of the doffer the stock on such doffer is rucked up, and there is a tendency to injure the card-clothing of such doffer, as well as that of the cleaner. The present invention seeks to avoid these objections
30 by providing mechanism whereby the cleaner will not be continuously operated, but will only be worked at intervals, and also by providing a movable or changing center of motion for the cleaner, so that such cleaner as it moves forward and upward toward the doffer will be held clear thereof and will be adjusted
35 after it has been moved upward past the doffer, so that it will come in contact with such doffer as it (the said cleaner) is lowered.

The invention consists in certain features of construction and novel combinations of parts, as will be hereinafter described and
45 claimed.

In the drawings, Figure 1 is a side elevation of my invention in connection with a part of a carding-machine. Fig. 2 is a detail perspective view of a part of the improved de-
50 vice. Fig. 3 is a partial front elevation of

the device. Fig. 4 is a detail perspective view illustrating particularly the eccentric support for the shaft of the cleaner and the construction for effecting the adjustment of such shaft; and Fig. 5 is a detail view of the left-hand
55 side of the device, enlarged, illustrating the operation of the devices for moving the circle-block which supports the shaft, all as will be hereinafter described and claimed.

In connection with the several parts presently described, I provide a suitable supporting-frame, A, which is shown as formed of standards A', having feet *a*, through which it may be bolted to the carding-machine frame. This frame also has lugs or brackets B, on
60 which the stripper-bar *b* is adjustably supported, and lugs or brackets C for supporting the brackets D, in which the boxes or straps E may be adjustably supported by means of set-screws *d*. The boxes or straps E have
65 formed in them circular bearings, in which I fit circle-blocks F, which circle-blocks are provided off the center with bearings *f* for the shaft G, which carries the cleaner.

The circle-blocks may be formed to fit so
75 tightly in the straps as to retain any suitable position to which they may be adjusted therein; but by preference I provide a brake, F', for such block, which brake is shown as consisting of a set-screw turned through the
80 strap and bearing against the circle-block. The position of the cleaner and its shaft with reference to the doffer-cylinder is clearly shown, particularly in Fig. 5. When the shaft and circle-block are in the position shown in
85 full lines in said figure, the cleaner-bar, when moved forward and upward toward the doffer, will swing clear of such doffer. If when the cleaner has reached its highest point the circle-block be turned slightly to lower the shaft-
90 bearings in such block, the cleaner will be moved toward the doffer, and as it moves downward will clean the short stock &c., from the cards of the doffer, the brake serving to keep the circle-block in the position to which
95 it may be turned in the strap. It is preferred to provide means for automatically effecting this adjustment, or turning of the circle-block in its strap, to which end I provide the circle-block with an arm or bar, H, having projec-
100

tions $h h'$, forming shoulder-like portions, between which operates an arm, I, fixed to the shaft, preferably by forming it with a collar, i , encircling such shaft, and providing a set-screw, i' , turned through the collar and binding against the shaft, so the arm may be adjusted on the shaft as may be desired. It is also preferred to connect the projections $h h'$ adjustably to the arm H, by forming the latter with a slotted segment, H' , and securing the projections in the slot thereof by means of threaded ends and nuts, as shown. By these several adjustments the movement of the circle-block by the contact of the arm I with the projections $h h'$ can be regulated as may be desired.

In the operation of this construction as the shaft is turned to throw the cleaner forward and upward the arm I will, just as the cleaner reaches its uppermost position, strike the projection h' and turn the circle-block so as to lower the shaft and throw the several parts into the position indicated in dotted lines in Fig. 5, so the cleaner on its return movement will pass through the cards of the doffer as desired. As the cleaner approaches its rearward position, the arm I will strike the projection h and readjust the circle-block to the position shown in full lines, Fig. 5. Thus it will be seen that the cleaner in its upward forward movement does not pass through the cards of the doffer, but is properly adjusted to pass through such cards on its return movement, as will be understood from the foregoing.

To the shaft G is secured a clutch-section, J, and a clutch-section, J' , is fitted loosely on the shaft and is movable into engagement with the fixed clutch-section, a spring, j , being usually interposed between such sections to give them a tendency to move apart. The loose clutch-section has an arm, K, extended from it and slotted at k to receive the bolt l , which secures to said arm one end of the pitman L, the opposite end of which pitman is suitably connected with a moving part of the machine, being usually connected to a crank, L^3 , on a shaft of the machine, as shown in Fig. 1. The arm K also supports a pawl, K' , which engages a tripper, which in turn operates a shifter-bar, by which the loose clutch-section is moved into contact with the fixed clutch-section.

In the framing I journal a wheel, M, having teeth, m , arranged to be engaged by the pawl K' , so that the oscillation of arm K will effect an intermittent or step-by-step turning of the wheel M, which constitutes the tripper, and this wheel is held from turning too freely on its supporting shaft or bearing by suitable friction, such as that due to setting up the nut m' shown in Fig. 2, and consequently the wheel will only be turned by the positive movement of its pawl.

On the wheel M, I support a projection or projections, N, extending out laterally from the wheel and inclined upward from one end, being pivoted at such end to the wheel, so

they can be turned inward, as indicated at n , Fig. 2. These projections engage one arm, o , of a shifter-piece, O, which piece has also a fork, o' , arranged to engage the loose clutch-section and adjust the same into engagement with the fixed clutch-section when the shifter-piece is rocked on its pivotal support at O' , as shown. In the construction shown the pivotal support is an arm extended outward from the lower edge of a flange, O^2 , which flange is made fast to the box or strap E by casting it integral therewith, or by suitably securing it thereto.

The operation of this construction is simple. As the arm K is rocked, the wheel M is intermittently moved on its axis, but the loose clutch-section will work free of the shaft until one of the projections N moves into contact with the arm o of the shifter-piece O, when the latter will be adjusted to throw the loose clutch-section into engagement with the fixed one, and so key the arm K to the shaft and cause its oscillations to rock the shaft and operate the cleaner.

When the apparatus is applied to a carding-machine in which the doffer has become very dirty, and it is desired to speedily clean the same, the parts may be adjusted to operate the cleaner continuously until the doffer has been cleaned, and then adjusted to operate the said cleaner at intervals to keep the doffer clean.

To accomplish the continuous operation of the cleaner, it is only necessary to adjust the wheel M to bring one of the projections N in engagement with the arm o , when the arm o' of shifter-piece O will adjust the loose clutch-section into engagement with the fixed section. Then by adjusting the pawl out of contact with wheel M the wheel M will remain in position to hold the shifter-piece and clutch-section in the described position. To throw the pawl out of engagement with the wheel M, such pawl may be raised clear of the wheel and then secured by tightening the nut k' , which holds such pawl on its pivot-bolt. Such pivot-bolt and the bolt securing the pitman to such crank-arm both operate in the slot of the arm K, so that either the length of movement of the arm or the stroke of the pawl, or both, can be adjusted as desired.

Having thus described my invention, what I claim as new is—

1. In a doffer-cleaner, the combination of the framing provided with a box or strap for the circle-block, the circle-block having off its center a bearing for the cleaner-shaft, the cleaner-shaft provided with a cleaner and journaled in said bearing, and means for oscillating the cleaner-shaft, the said shaft and the circle-block being provided with projections or portions arranged to contact as the shaft is oscillated, whereby the oscillation of the shaft will effect the desired adjustment of the circle-block, substantially as set forth.

2. The combination of the framing, the box

or strap supported by said framing, the circle-block journaled in said box or strap and provided off its center with a journal-bearing, an arm connected with said circle-block and supporting projections, the shaft journaled in the bearings of the circle-block, an arm connected with such shaft and arranged to operate between the projections of the arm of the circle-block, and the cleaner, substantially as set forth.

3. The combination of the framing, a shaft having a cleaner, the arm for oscillating such shaft, a clutch-section whereby said arm may be keyed to such shaft, a shifter-piece whereby to communicate motion to said clutch-section, a tripper whereby to engage and operate said shifter-piece, and operating means for said tripper, substantially as set forth.

4. The combination of the shaft provided with a cleaner, bearings in which said shaft is journaled, a clutch-section fixed on such shaft, a clutch-section loose with reference to the shaft and movable into and out of engagement with the fixed clutch-section, a shifter-piece having a fork engaging the movable clutch-section, and an arm by which the said shifter-piece may be operated, a toothed wheel having a projecting portion or portions arranged to engage the said shifter-piece, a pawl engaging the toothed wheel, the arm K, and oscillating means therefor, substantially as set forth.

5. The combination, with the shaft having the cleaner-bar, bearings for said shaft, and the clutch having a movable section, of the shifter-piece having one arm arranged to operate the loose clutch-section, a toothed wheel having a number of projecting portions

whereby to engage the shifter-piece, such portions being movable, whereby they may be set into and out of position to engage the shifter-piece, the arm K, and oscillating means therefor, and the pawl engaging the toothed wheel, substantially as and for the purposes specified.

6. The combination of the framing, the shaft having a cleaner, the clutch-section fixed on the shaft, the clutch-section loose on the shaft and having an arm by which the said clutch-section may be rocked, oscillating means for said arm, a shifter-piece having a fork engaging the loose clutch-section, and an arm by which the shifter-piece may be rocked, a toothed wheel having projections arranged to engage the arm of the shifter-piece, and a pawl supported on the arm of the loose clutch-section and engaging the toothed wheel, substantially as set forth.

7. In a doffer-cleaner, the combination of the framing having a box or strap, the circle-block turning therein and having a bearing off its center, the shaft journaled in said bearing and having a cleaner, such shaft and circle-block being provided with projections or portions arranged to contact as the shaft is rocked, the clutch-section fixed on said shaft, the clutch-section loose on the shaft and provided with an arm, means for oscillating said arm, a shifter-piece engaging the loose clutch-section, and means for operating said shifter-piece, substantially as set forth.

GEORGE BEBB.

Witnesses:

AUGUSTIN BOICE,
JOHN L. MCMASTER.