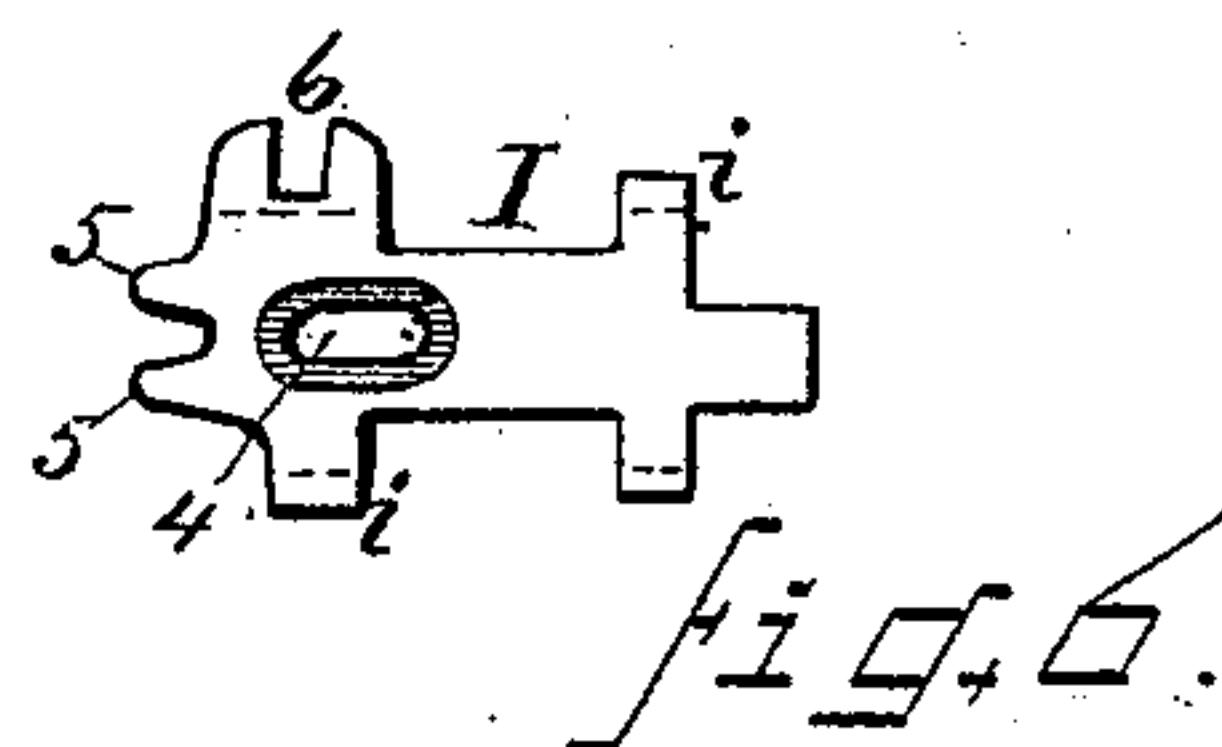
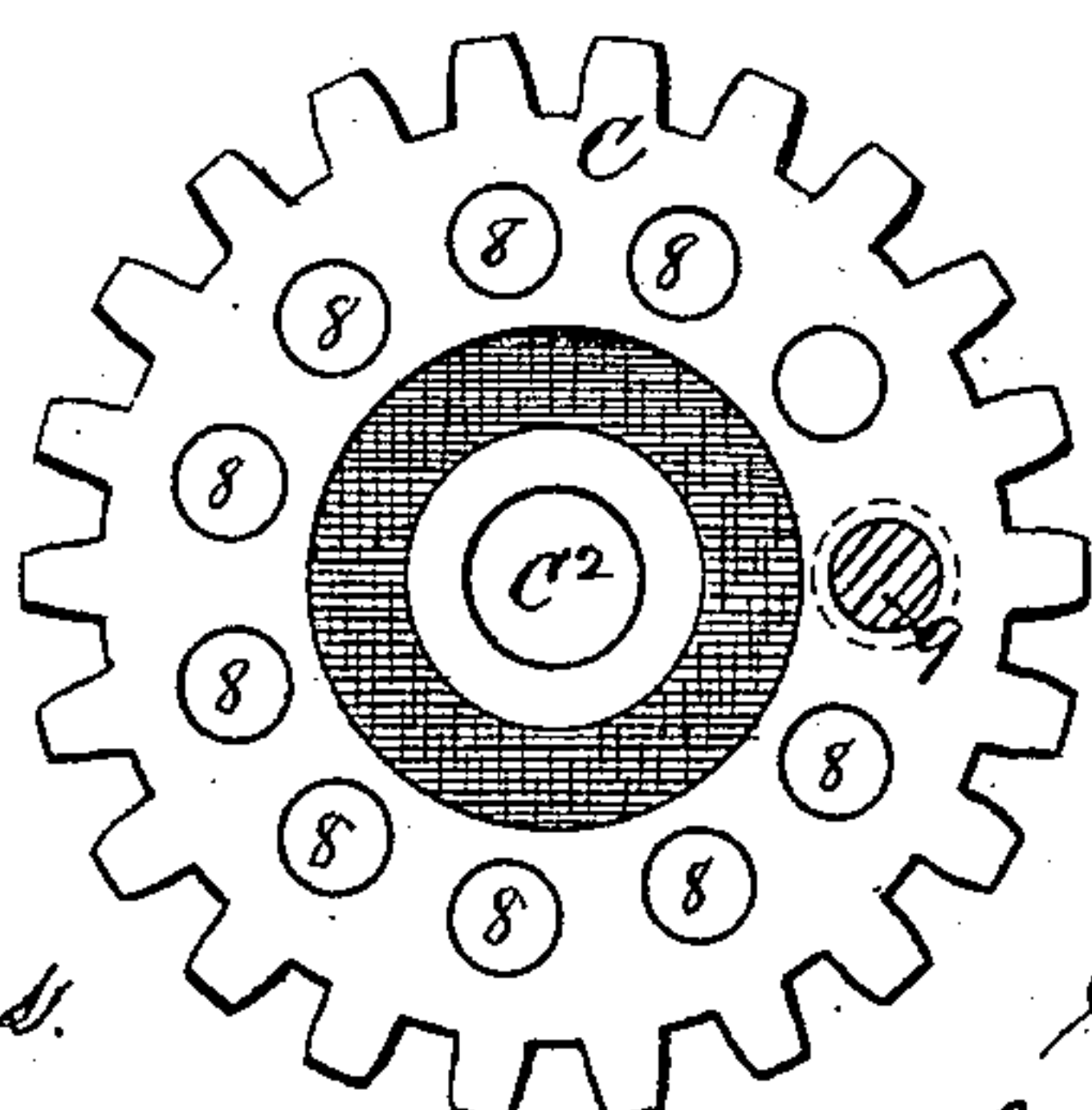
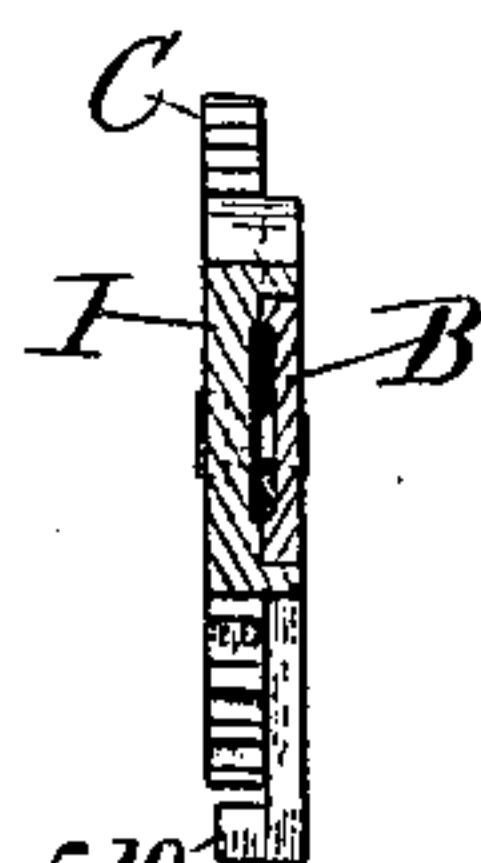
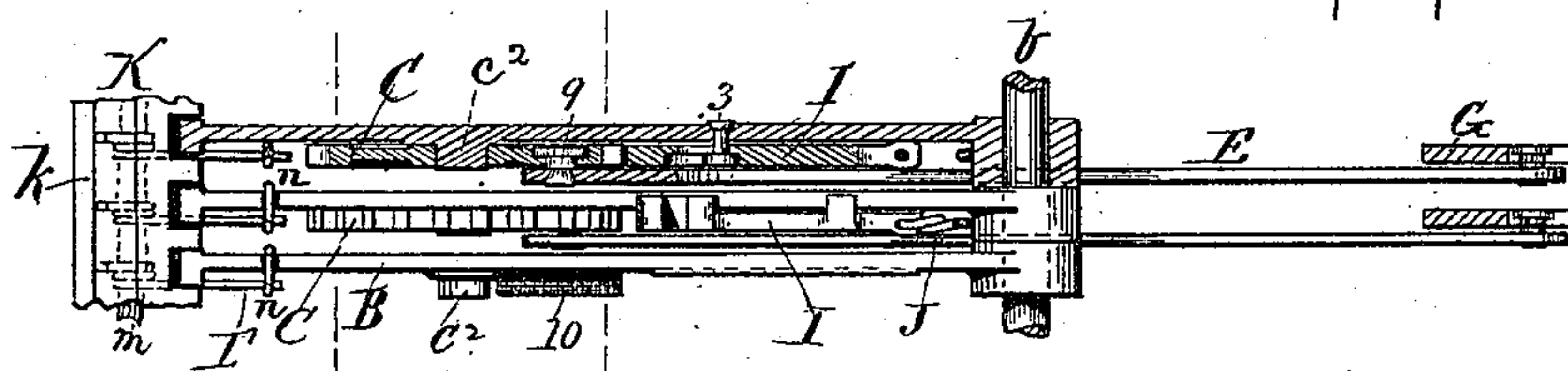
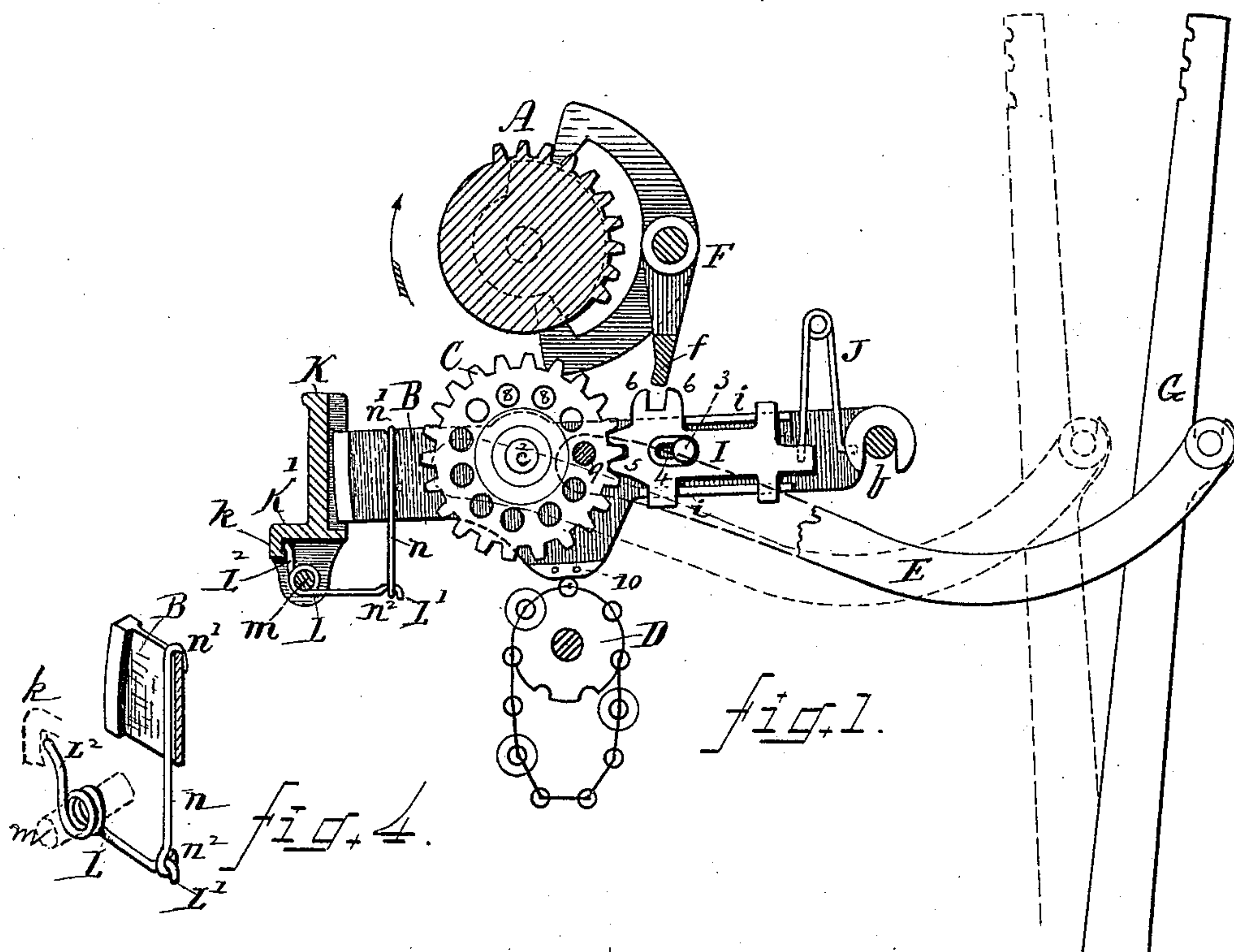


(No Model.)

E. WRIGHT.
SHEDDING MECHANISM FOR LOOMS.

No. 441,626.

Patented Nov. 25, 1890.



Witnesses.

Ella P. Blenius.
M. J. Fay

Tryvetor.

Edward Wright
By Chas. H. Burlingame
Attorney

UNITED STATES PATENT OFFICE.

EDWARD WRIGHT, OF WORCESTER, ASSIGNOR TO THE DAVIS & FURBER
MACHINE COMPANY, OF NORTH ANDOVER, MASSACHUSETTS.

SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 441,626, dated November 25, 1890.

Application filed May 19, 1890. Serial No. 352,333. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WRIGHT, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented new and useful Improvements in Shedding Mechanisms for Looms, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My present invention relates more especially to that class of mechanism described in my previous patents, Nos. 425,843 and 425,844, granted April 15, 1890, and comprises certain improvements in the construction of vibrator appliances and gearing applicable thereto, whereby the mechanism is rendered more certain in its action and more durable and efficient for use.

One object of my present invention is to afford a locking-dog mounted upon the vibrator in a manner to have backward and forward reciprocating action on guides that support the said dog and retain it against sideways displacement by pressure of the gear-teeth.

Another object is to afford a more convenient and durable spring device for use in combination with vibrators.

Another object is to afford a vibrator-gear for looms having a series of adjustments for the crank, which adjustments respectively correspond with positions of the gear-teeth, thereby affording facility whereby different teeth of the vibrator-gear can be successively worked at leading positions, as hereinafter explained.

These objects I attain by the mechanism described, the particular features of improvement claimed being hereinafter more definitely specified.

In the drawings, Figure 1 is a view in elevation and section showing such parts of a shedding mechanism for looms with my improvement applied thereto as will illustrate the nature of my invention. Fig. 2 is a part plan part horizontal section of the vibrator appliances and devices connected therewith. Fig. 3 is

a side view, drawn to larger scale, showing one of the vibrator-gears. Fig. 4 is a perspective view of the depressing-spring and its connection. Fig. 5 is a vertical transverse section of the vibrator-bar and slide-dog, and Fig. 6 is a separate view of the sliding-dog.

Referring to parts, A denotes the rotatable cylinder-gear, provided with teeth at one side for operating the vibrator-gears.

B indicates the vibrator bar or lever fulcrumed at *b*, with its opposite end arranged to move up and down.

C indicates the vibrator-gear or crank-gear mounted on the stud or bearing-boss *c*² at the side of the vibrator-bar.

D indicates the pattern-cylinder or chain, provided with indicators that operate in the usual manner for lifting the vibrators in their required order of action, and E indicates the connection or link from the gear C to the operating-jack G.

The main supporting-frame, harness mechanism, and parts connecting the jacks with the harnesses, as well as other parts of the loom, (not shown herein,) can be of the well-known or any suitable construction, and therefore are not specifically described.

F indicates the retracting device or rocker, which consists of an arm or bar supported on an axis above the vibrators and operated by an oscillating movement in unison with the rotations of the cylinder-gear, as specified in my former patents, or by other convenient means.

I indicates the slide bolt or dog for locking the gear C when the latter is out of mesh with the cylinder-gear A, and for releasing said gear when the vibrator-bar is lifted. The said dog is supported upon the vibrator-bar in such manner that it can slide endwise thereon or have longitudinal reciprocative movement, while it is confined against independent transverse movement by guides at *i i*, and retained in connection with the vibrator-bar by a stud or rivet 3, that passes through the slot 4 in the dog. The front end of the dog is fitted with detents or teeth 5, that engage the teeth of the vibrator-gear C, and with lugs 6 and a recess on one side that engage the retractor. The dog I is normally

pressed forward by a spring J, arranged between its rear end and the fulcrum-hub of the vibrator-bar. When the vibrator-bar is lifted, the lugs 6 engage the part *f* of the retractor, and by a backward movement of the latter the dog is moved longitudinally on the vibrator-bar in opposition to the spring J sufficiently to release the teeth of the gear C at the instant the gear C comes into mesh with the cylinder-gear A. By the improved construction and arrangement of the dog, herein shown and described, the lock of the gear is rendered strong and secure, and the dog cannot be forced outward by shock on the gear or rapid action of the mechanism.

K indicates the recessed guide-bar, and L my improved spring for the ends of the vibrator-bars. The number of springs employed corresponds with the number of vibrator-bars, any number of which may be used in the series, according to the requirements of the loom or jacks to be operated. The spring L is arranged below the end of the vibrator-bar, its coil supported on the transverse rod *m*, that extends across the machine, and has its ends fixed in the frame. The spring is formed with a forwardly-projecting arm having a hook or curved portion, as at *L'*, and a backwardly-extending end *L²*. The guide-bar K is made with a backward extension *K'*, having a shoulder or dependent flange *k*, against which the spring ends *L²* rest. The spring-arm *L'* is connected with the vibrator-bar by a link *n*, the top end of which hooks over the vibrator-bar, as at *n'*, said vibrator being best provided with a lug or depression to keep the hook in place, while the lower end is made with a loop *n²*, into which the hook of the spring-arm *L'* engages. The advantage of this construction is that the spring does not wear into the vibrator-bars, as when the end of the spring rests on the top of the bar, while the connections are simple and have comparatively no friction, and the spring-coils are covered and protected from the accumulation of waste and dust by the offset portion *K'* of the guide-bar K.

In the shedding mechanism of looms wherein vibrators and crank-gears are employed in connection with operating-gearing that imparts movement to said crank-gears intermittently as the latter are thrown into and out of engagement for shifting the positions of the jacks and harnesses, it has been found that the leading tooth on the crank or vibrator-gears—i. e., the tooth that first strikes into mesh with the operator or cylinder gear—becomes worn out much more rapidly than the other teeth of said gear, as such leading tooth takes nearly all of the impact and strain required for starting the jacks and harness. By reason of this rapid wearing on the leading tooth the gears become useless long before their other teeth are injuriously worn. Hence the crank-gears require to be frequently renewed, since the life of the gear is

limited by the life of its leading tooth. With a view to overcoming this excessive wear at one point and avoiding the necessity for such frequent renewal of the crank-gears, a feature of my invention consists in providing the crank or vibrator-gear in geared shedding mechanism with a series of adjustments for the crank-axis that will permit of the said gear being readily changed in its inter-meshing relation to the cylinder-gear, so that different teeth or any one of the teeth of said vibrator-gear can be employed as the leading tooth in the shed-shifting operation. This I accomplish by forming the gear, as shown in Figs. 1 and 3, with an annular series of openings 8, each fitted to receive the wrist-pin or crank-axis stud 9, and severally disposed in such relation to the radials of the respective teeth that the transposing of the crank-axis from one opening to another will transpose or bring each of the respective teeth of the crank-gear successively to the leading position to serve as leading tooth in the action without affecting the accuracy of engagement of the vibrator-gear with the operator or cylinder gear. Thus by providing for the wear upon each and all of the teeth of the vibrator-gear at first position great economy is effected in the maintenance of the mechanism, as the gears C will last longer and operate much more satisfactorily than will those not furnished with facilities for these different adjustments, the motion being easier, more regular, and with less shake and rattle than with partially and irregularly-worn gears.

The devices for imparting motion to the cylinder-gear A, pattern-chain D, and rocker F can be substantially the same as shown in my previous patents, above referred to, or of any suitable construction, and therefore are not herein illustrated.

I claim as my invention herein to be secured by Letters Patent—

1. The locking-dog I, supported at the side of the vibrator-bar, arranged to have longitudinal movement on said vibrator-bar, and provided with detents 5, that engage the teeth of the vibrator-gear C, and with side lugs 6, that engage with the retractor, in combination with the vibrator-bar B, vibrator-gear C, cylinder-gear A, retractor F, and spring J, all substantially as and for the purpose described.

2. The spring L, composed of the coil having arms *L'* and *L²*, and the link *n*, arranged for operation, as set forth, in combination with the vibrator-bar, onto which said link is hooked, the spring-supporting bar *m*, passing through the spring-coils, and the bar K, having the shoulder or flange *k*, for confining the rear end of the spring, substantially as and for the purpose specified.

3. The vibrator-gear C, for the shedding mechanism of looms, provided with a series of adjustments or openings 8, each adapted

for the reception of the crank axis or stud, whereby the jack-connection or link E is attached thereto, said openings being disposed in relation to the radials of the teeth, as
5 specified, in combination with the vibrator-bar B, the jack-connecting link E, the cylinder-gear A, whereby motion is imparted to said vibrator-gear, and means for elevating

and depressing said vibrator-bar, substantially as set forth.

Witness my hand this 8th day of May, A. D. 1890.

EDWARD WRIGHT.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.