

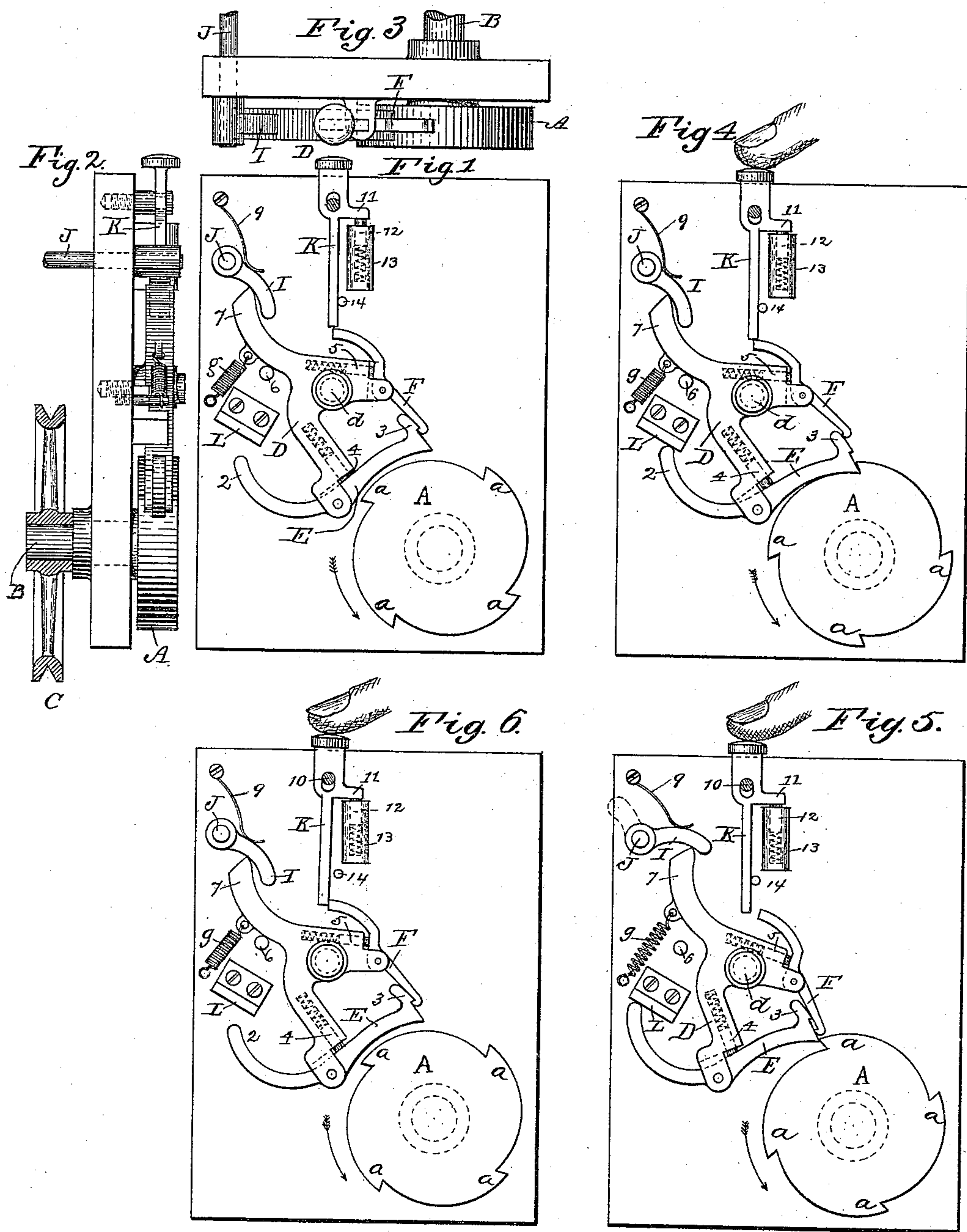
(No Model.)

4 Sheets—Sheet 1.

O. TYBERG.
MECHANICAL MOVEMENT.

No. 441,260.

Patented Nov. 25, 1890.



Witnesses:
A. V. Cushman
C. E. Hunt.

Inventor:
Oluf Tysen
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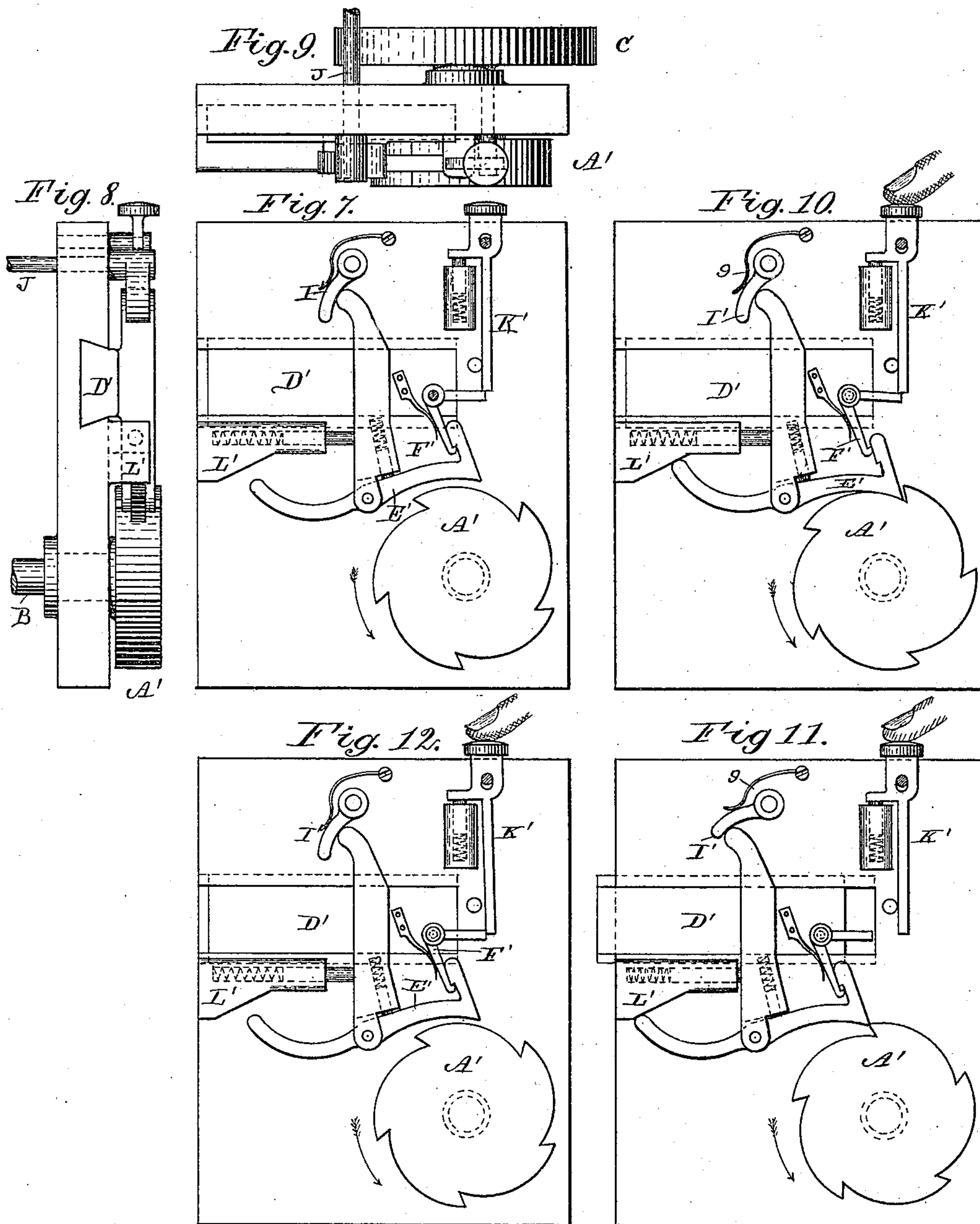
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4 Sheets—Sheet 2.

O. TYBERG.
MECHANICAL MOVEMENT.

No. 441,260.

Patented Nov. 25, 1890.



Witnesses:
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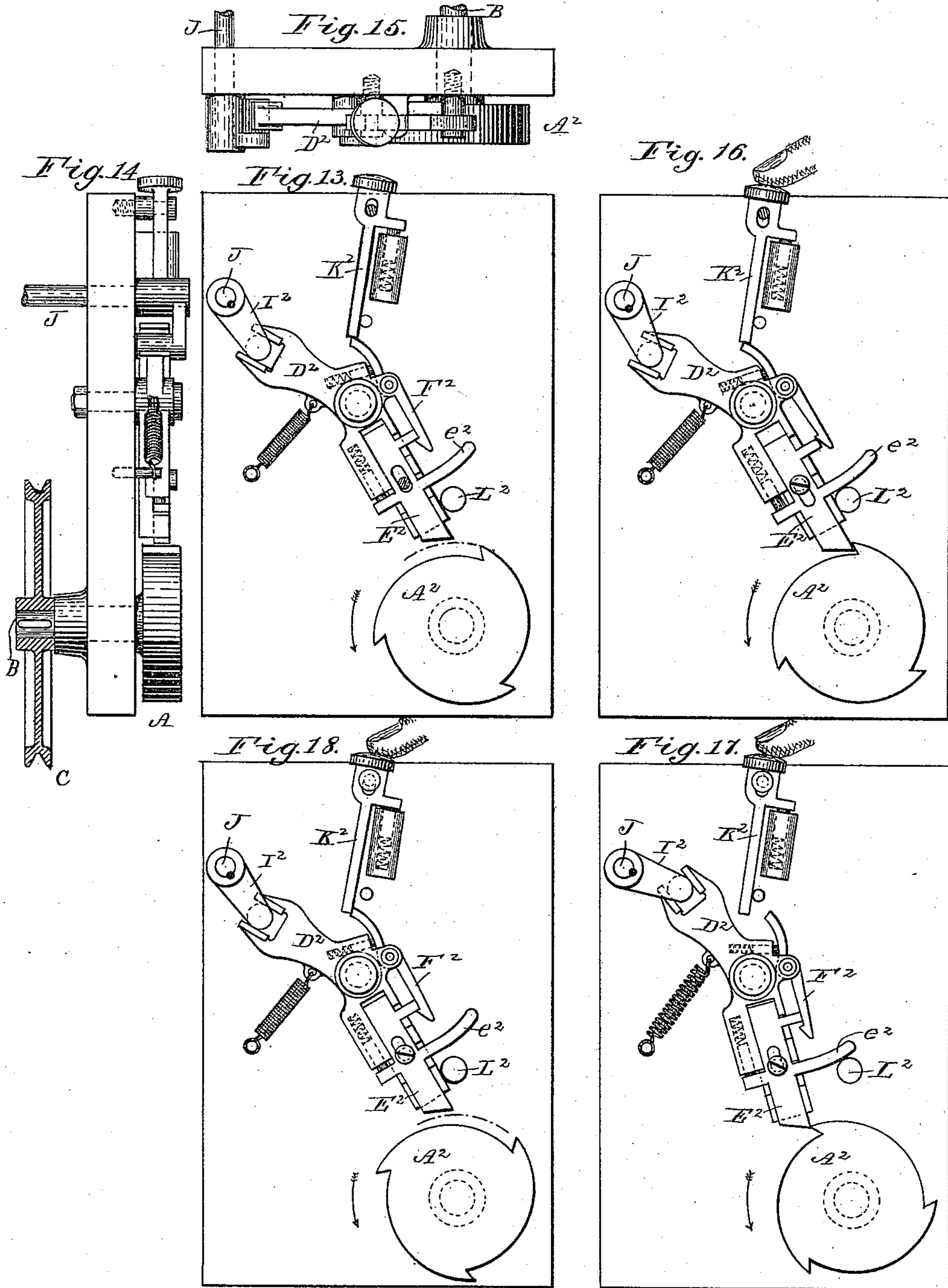
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4 Sheets—Sheet 3.

O. TYBERG.
MECHANICAL MOVEMENT.

No. 441,260.

Patented Nov. 25, 1890.



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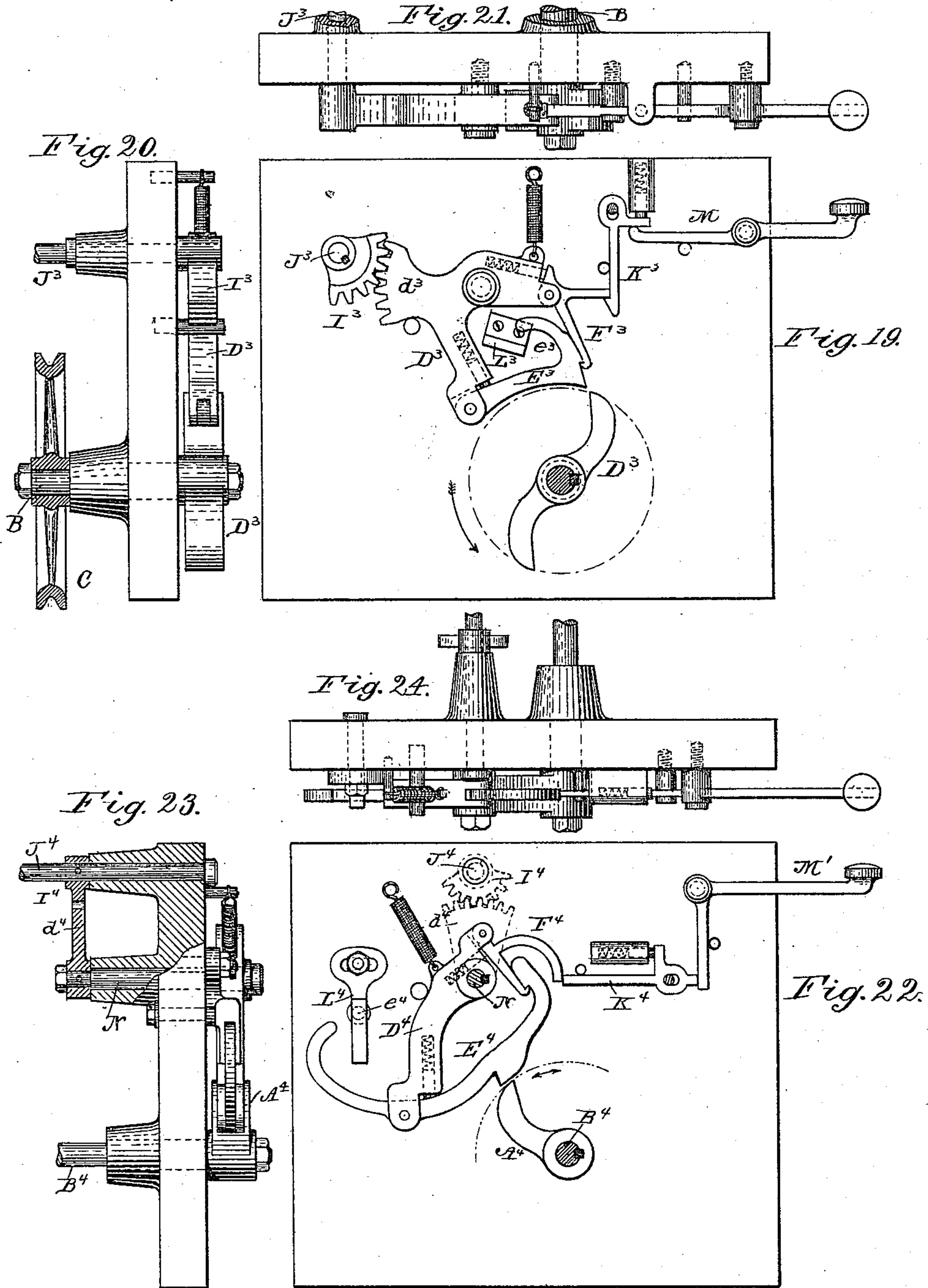
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4 Sheets—Sheet 4.

O. TYBERG.
MECHANICAL MOVEMENT.

No. 441,260.

Patented Nov. 25, 1890.



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UNITED STATES PATENT OFFICE.

OLUF TYBERG, OF NEW YORK, N. Y.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 441,260, dated November 25, 1890.

Application filed August 5, 1890. Serial No. 361,067. (No model.)

To all whom it may concern:

Be it known that I, OLUF TYBERG, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide a new mechanical movement by which vibrating or oscillating movements may be imparted to a lever or shaft from a rotating or oscillating driving-shaft or driver, the parts being so constructed and arranged that the mechanism connecting the driven shaft or lever may be thrown into engagement with the driver by the movement of a pawl-disengaging device or lever.

In the accompanying drawings, Figure 1 is an elevation of a mechanism embodying one form of my invention, and Figs. 2 and 3 are side and plan views, respectively, thereof. Figs. 4, 5, and 6 are elevations similar to Fig. 1, but showing the parts in different positions to illustrate the operation of my invention. Figs. 7 to 12 are views similar to Figs. 1 to 6, respectively, illustrating another form of my invention. Figs. 13 to 17 are views also similar to Figs. 1 to 6, respectively, illustrating a third form of my invention. Figs. 19, 20, and 21 illustrate in elevation and side and plan views, respectively, a fourth form of my invention; and Figs. 22, 23, and 24 illustrate a fifth form of my invention.

Referring now to Figs. 1 to 6, Sheet 1, A denotes a driver, herein shown as a disk or short cylinder, provided with a series of teeth *a* and attached to a shaft B, provided with a pulley C. Pivoted at *d* is an actuating dog-and-pawl carrier D, to which are pivotally attached a dog E, having a tail 2 and catch 3 and a pawl F, provided with a hook to engage said catch. The carrier D is provided with spring-pressed pins or plungers 4 and 5, respectively, the former to press on the dog E forward of its pivot and the latter bearing on the pawl F above its pivot. A spring *g* normally holds the carrier D against a stop-pin 6 and returns it thereto after it has been moved away therefrom. The arm 7 of the pivoted carrier D is in engagement with a device I to

be operated, said device representing an arm of a shaft J, to which it is desired to impart rocking or oscillating movements, or merely a pivoted lever, which may have another arm (as denoted by dotted lines in Fig. 5) to operate another device in a piece of mechanism. The arm or lever I will be held in operative contact with the arm 7 of carrier D by any suitable returning-spring, as 9, operating either directly or indirectly on said arm or lever. Arranged in such relation to the tail of the pawl F that it may be engaged with said tail is a pawl-disengager K, through a slot in which passes a pin 10, said disengager having an arm 11, which is acted on by a spring-pressed pin or plunger 12 in a hollow lug 13, the pressure of said pin on said arm serving to hold said disengager normally in contact with a stop-pin 14.

L is a guide or stop, which is stationary relative to the said dog, and which is arranged to be impinged against by the tail 2 of the said dog when the latter is being acted on by a tooth *a* of the driver A.

The operation of my invention is as follows: The parts being in the position shown in Fig. 1 and power being applied to the pulley C and the driver being rotated in the direction indicated by the arrows, a slight pressure either by the finger of an operator or by some mechanical device on the disengager K will force the latter into contact with the tail of the pawl and will release the hook of the latter from the catch of the dog E, so that said dog will fall into the range of the teeth of the driver, thus bringing the tail of the dog in contact with the stop or guide L, as shown in Fig. 4. The dog is now carried forward with the driver, thus moving the carrier D on its pivot, causing the arm 7 of said carrier to act on the arm or lever I and operate the same. As the carrier D is thus turned on its pivot the stop or guide L, with which the tail of the dog is in contact, will gradually lift the said dog until it is cleared from the tooth of the driver by which it is being acted upon. Fig. 5 represents the dog as just about to clear the tooth of the driver. In the meantime the said dog has been raised by the action of the guide L, so that its catch is above the hook of the pawl, and when said dog has cleared

the tooth of the driver it will be retained in its first or elevated position, as shown in Fig. 6.

Owing to the rapidity with which the driver A will be rotated, the operation above described will be practically instantaneous, and if the disengager K has not been relieved of its pressure the tail of the pawl will be in contact therewith, as shown in Fig. 6, and will move the same slightly on its supporting-pin 10 away from the stop-pin 14, so that said disengager cannot again act on the pawl to release the latter until the pressure shall have been relieved and the said disengager shall have been returned to its first position (shown in Fig. 1) by the spring-pressed pin or plunger 12.

My improved mechanical movement may be used in a variety of machines and will be particularly useful in type-writers, and in such an application of my invention the driver A will be in the form of a cylinder of considerable length, and a series of each of the carriers, dogs, pawls, disengagers, and arms or levers to be operated will be employed, each set of these parts constituting an independently-operating train of mechanism.

I wish it particularly understood that I do not limit my improved mechanical movement to the details hereinbefore described, as these may vary widely without departing from the spirit of my invention. Thus in the mechanism illustrated in Figs. 7 to 12, Sheet 2, the dog-and-pawl carrier D', instead of being pivoted, is in the form of a slide, the driver A' has five teeth instead of four, and the dog E', pawl F', disengager K', and stop or guide L' are somewhat differently constructed and arranged than in the device shown in Sheet 1; but the operation of this second form of my invention is essentially the same as the first, as will be readily understood.

In the form of my invention shown in Figs. 13 to 17, Sheet 3, the rotating driver A² has three teeth, the carrier D² is forked to operate the arm or lever I² positively in both directions, and the dog E² is made to slide in the said carrier, and is provided with a curved arm e², to engage a stop L², which is in the form of a pin. The pawl F² and the pawl-disengager K² are much the same as in the form of my invention first described, and the operation is essentially the same.

In the form of my invention shown in Figs. 19 to 21 the rotating driver D³ has two arms, the extremities of which act on the dog E³ in the same manner as the teeth of the disks or cylinders heretofore described, and the projection e³ on the dog E³, to engage the stop or guide L³, is at the forward end of the dog, the said stop or guide being arranged accordingly. The carrier D³ is provided with a segment-gear d³, meshing with a second segment-gear I³ on the operated shaft J³. The pawl F³ and pawl-disengager K³ are somewhat differently constructed and arranged than in the other forms of my invention, but their oper-

ation is essentially the same. The pawl-disengager, instead of being a finger-piece, as in the forms of my invention hereinbefore described, is operatively engaged by an impulse or finger lever M, the outer end of which is to be pressed upon slightly. The said impulse-lever might, however, be an armature-lever to be operated by an electro-magnet.

Figs. 22, 23, and 24 illustrate still another form of my invention, in which the driver A⁴ is carried by a reciprocating, rotary, or rocking shaft B⁴, operated in any suitable manner. The stop or guide L⁴, which is engaged by the tail of the dog E⁴, when said dog is released from the pawl F⁴, so as to fall within range of said driver, is made adjustable by being pivoted at e⁴, and is secured in any desired position by a set-screw or nut, this feature of adjustment being convenient in getting the parts so arranged that the dog will clear the driver at the proper instant. From this it will be understood that the stops or guides L L', &c., shown in the other forms of my invention may also be made adjustable for this same purpose, if desired. The carrier D⁴ is, in this fifth form of my invention, attached to a rock-shaft N, which may be the operated shaft, or the said shaft N may be provided with a segment-gear d⁴, meshing with a segment-gear I⁴ on the shaft J⁴, as shown in dotted lines in Fig. 22 and in full lines in Fig. 23, and in such case the shaft J⁴ will be the finally-operated shaft. The disengager K⁴ for the pawl F⁴ is operated by a finger-lever M', similar in operation to the lever M, Figs. 19 and 21, but somewhat different in construction.

From the foregoing it will be apparent that my invention comprises, essentially, a rotary or oscillating driver and a movable carrier having a dog and dog-holding pawl, said carrier being directly or indirectly connected with the shaft or lever to be operated, and the said pawl being acted upon by a releaser or disengager, which may be a finger device, or which may be acted on by any suitable impulse-lever operated manually or otherwise.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, with a toothed driver, a movable carrier provided with a dog to be engaged by said driver and a pawl for engaging said dog, of a stop or guide for causing said dog to be released from said driver at the proper instant, a pawl-disengager, and a device to be operated by said carrier.

2. The combination, with a rotary driver, of a movable carrier provided with a dog to engage said driver and with a holding-pawl for said dog, a stop or guide to be engaged by a portion of said dog, and a disengager for said pawl.

3. The combination, with a toothed driver and a movable device to be operated therefrom, of a dog to engage said driver and connected with said movable device, and a

stationary stop or guide disconnected from said dog and serving to disengage the latter from said driver.

4. The combination, with the rotary driver A, of the carrier D, provided with the pivoted dog E and pivoted pawl F, engaging said dog, the stop or guide L, engaged by the tail of said dog, and the lever or arm I, operated by said carrier.

5. The combination, with the rotary driver A, of the carrier D, provided with the piv-

oted dog E and pivoted pawl F, engaging said dog, the disengager K, for unhooking said pawl, the stop or guide L, engaged by the tail of said dog, and the lever or arm I, operated by said carrier.

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

OLUF TYBERG.

Witnesses:

C. A. TEAGE,

C. L. LEUTING.