

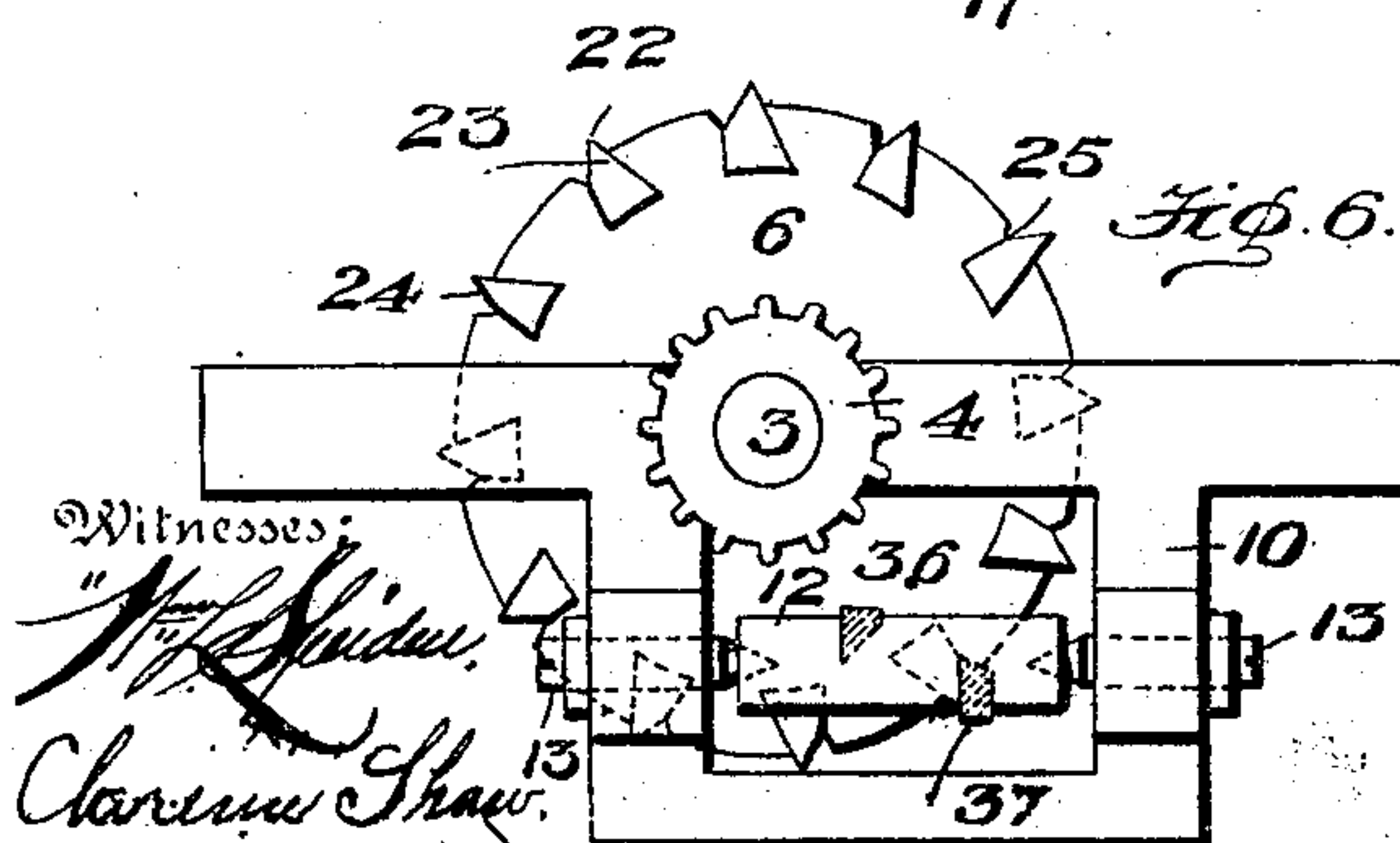
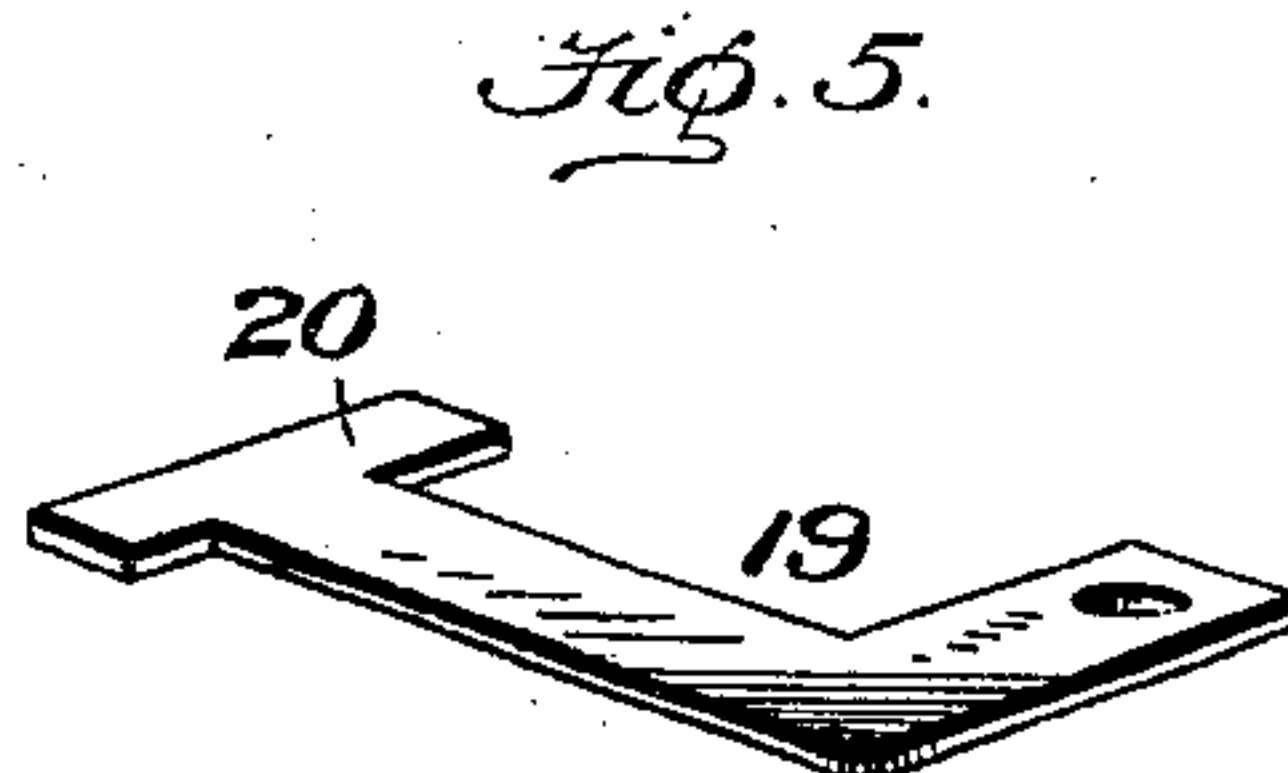
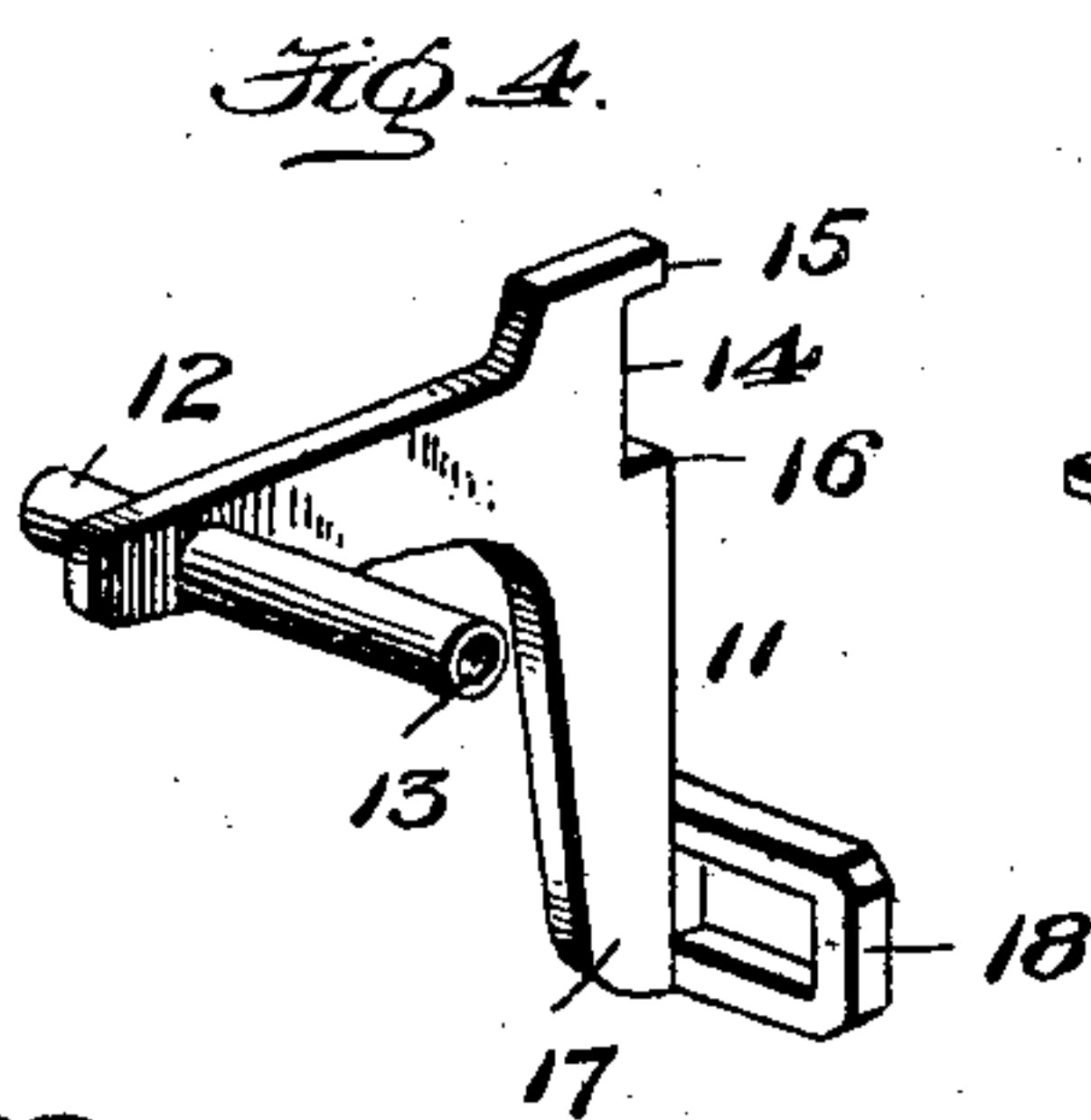
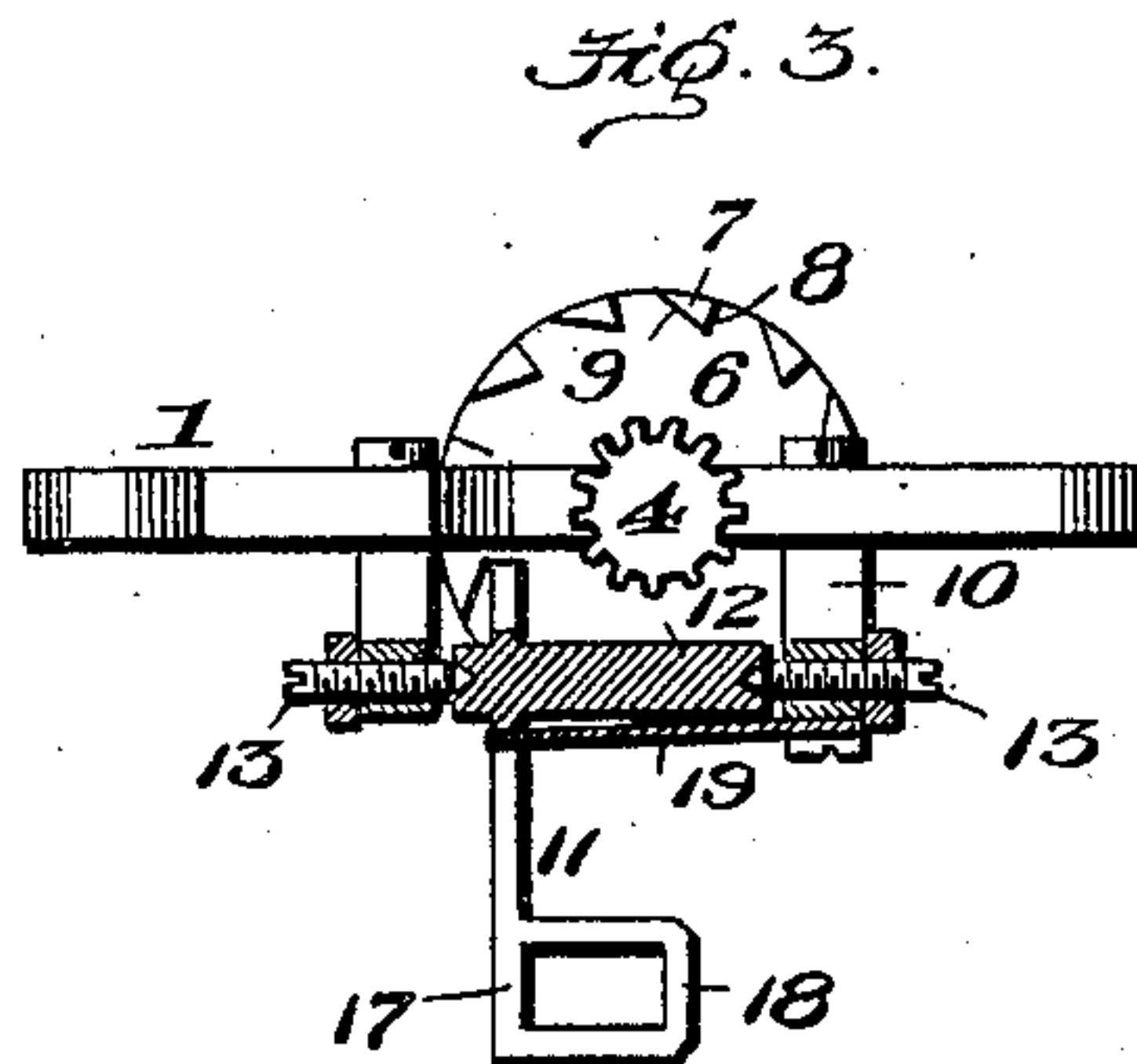
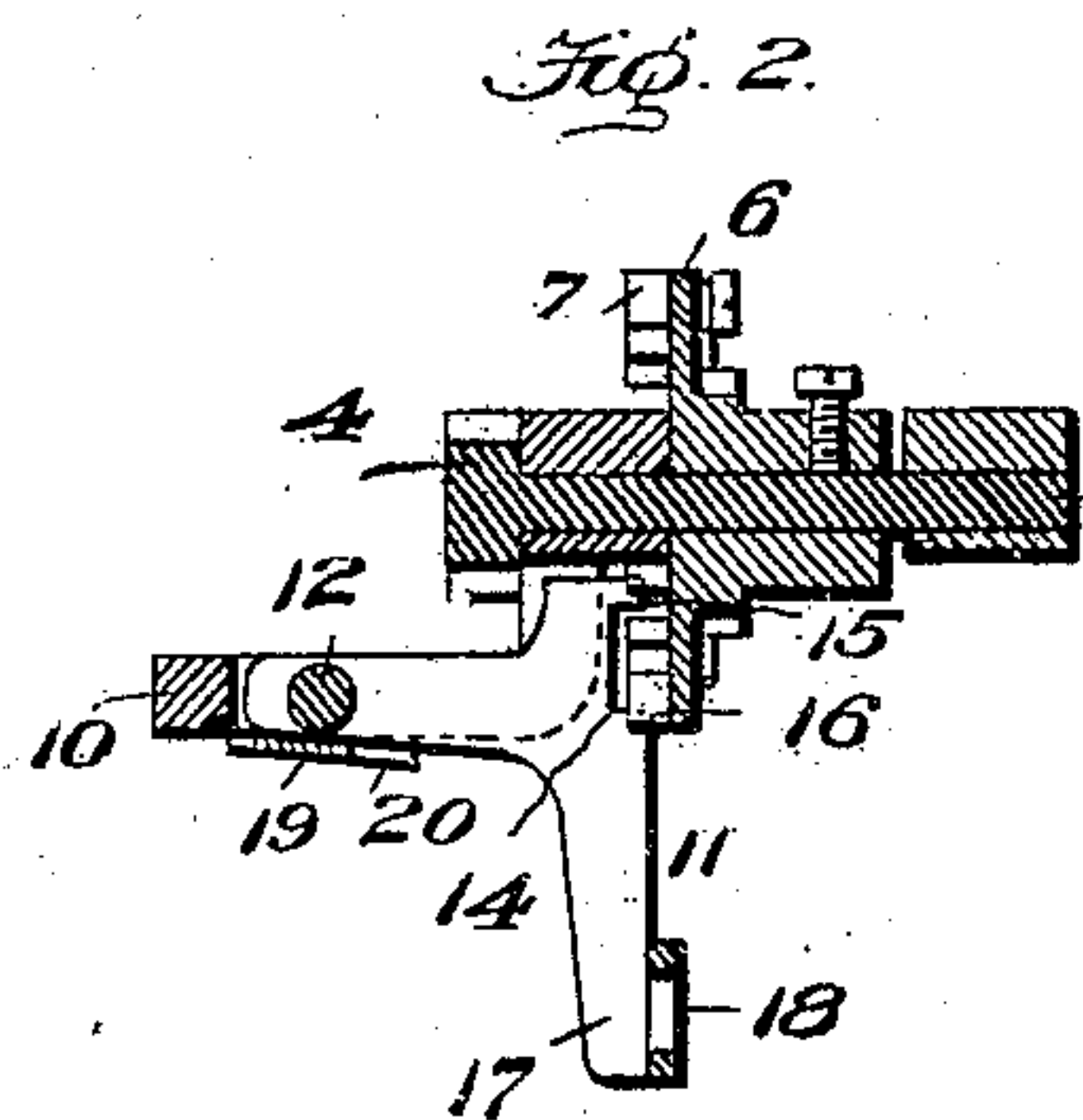
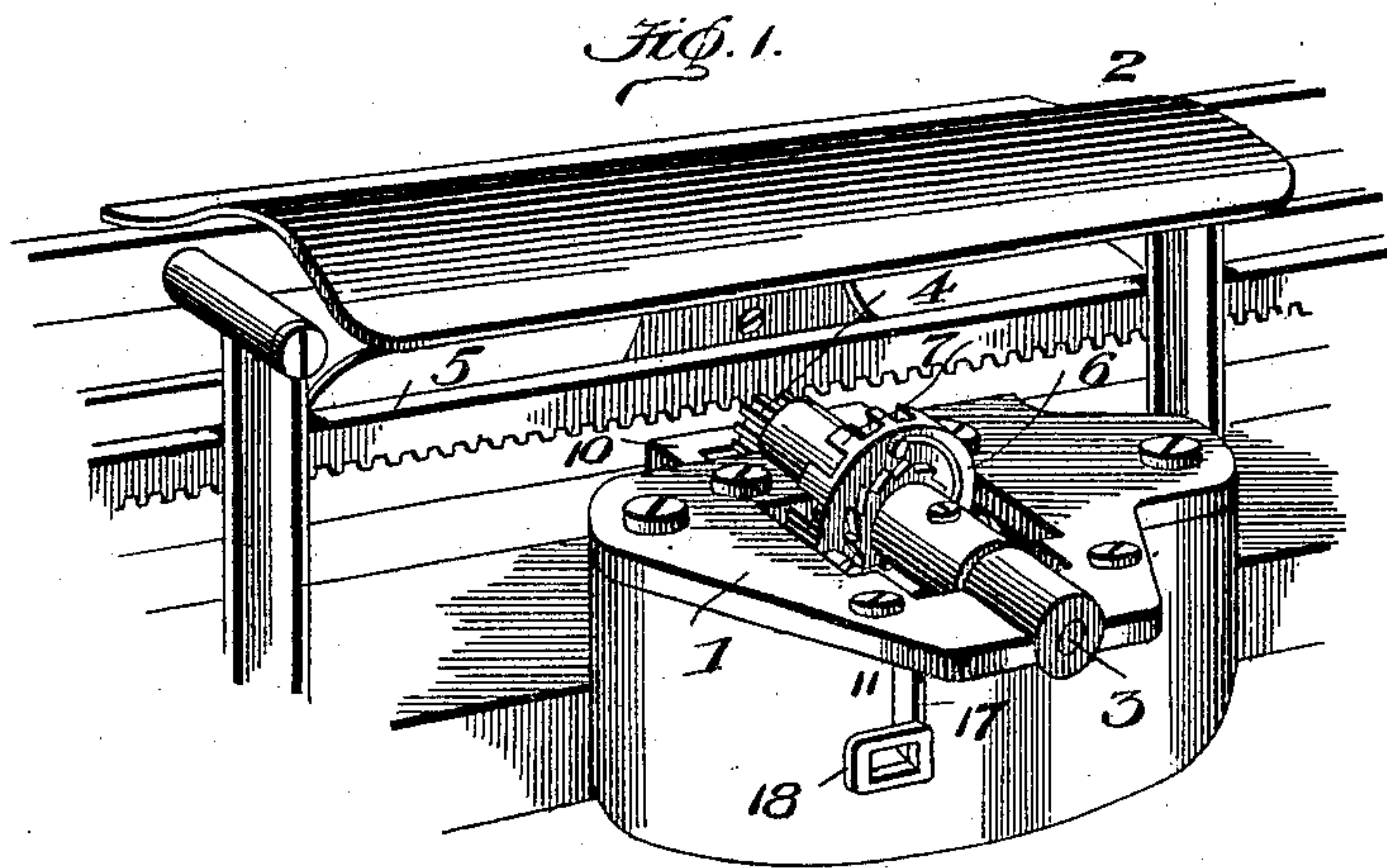
No. 682,636.

Patented Sept. 17, 1901.

W. S. PERRY.
TYPE WRITER ESCAPEMENT WHEEL.

(Application filed May 12, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM S. PERRY, OF NEWARK, NEW JERSEY.

TYPE-WRITER ESCAPEMENT-WHEEL.

SPECIFICATION forming part of Letters Patent No. 682,636, dated September 17, 1901.

Application filed May 12, 1900. Serial No. 16,466. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PERRY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new and useful Type-Writer Escapement-Wheel, of which the following is a specification.

My invention relates to mechanical spacing mechanisms, and more particularly to that class of devices used upon machines which employ a rack-bar to effect their movement tooth by tooth by means of said spacing mechanism or escapement—as, for instance, in type-writers; and it has for one object to so construct a wheel-escapement that the number of parts required to construct the same and the friction upon said parts will be greatly reduced.

Another object is to provide means to lock the escapement-wheel after escapement has taken place in such a manner as to make it impossible to move it in either direction until the spacing-arm has been actuated.

With these objects in view my invention consists in the improved construction and novel arrangement of parts of an escapement, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of my improved escapement, partly broken away, with so much of a type-writer as will be necessary to show the location and operation of the same. Figs. 2 and 3 are sectional views of the escapement, taken at right angles to each other. Figs. 4 and 5 are perspective detail views of parts of the same. Fig. 5^a is an edge view of the spacing-arm, showing the relative arrangement of the teeth or abutments formed thereon. Fig. 6 is an end view of a different form of my improved escapement.

In carrying out my invention I provide a suitable base 1, which can be secured to the machine to be actuated—as, for instance, the type-writer 2 shown in Fig. 1. Journaled in the base is a shaft 3, which is provided at one end with the ordinary pinion 4 to engage with the rack 5 or other longitudinally-moving element. Loosely mounted upon the intermediate portion of the shaft in the usual

manner is the escapement-wheel 6, one face of which is provided with crown-teeth 7, substantially triangular in cross-section. The outer wall of the teeth is formed by the periphery of the wheel, and one of the inner walls 8 is substantially radial, while the remaining wall 9 is inclined to the others, and if extended would cut the periphery of the wheel at a short distance away, and thereby form the chord of an arc.

Secured to the base 1, so as to project a suitable distance therefrom, is a substantially bow or D shaped frame 10, within which is journaled one end of the spacing-arm 11. The arm is preferably provided with an extended bar 12, which is supported at its ends upon cone-bearings 13 in the usual manner. By making the pivotal points or bearings for the arms screw-threaded the bearing may be moved longitudinally in either direction, so as to properly adjust the free end of the arm in relation to the teeth of the escapement-wheel. The free end of the arm is bifurcated or recessed, as shown at 14, the opposite walls of the recesses forming teeth or abutments 15 and 16, against which the teeth of the escapement-wheel are caused to engage as the arm is reciprocated. The arm is so arranged relatively to the face of the wheel 6 that its recessed portion will stand substantially in a line with the inclined wall 9 of the teeth, with one of the abutments located within the circle of the teeth of the wheel and the other one located upon the outside. The width of the recess or space between the abutments is a trifle less than the length of the wall 9, so that when it is in its normal position it will be impossible for the teeth of the wheel to pass between the abutments, and thereby the wheel will be locked against rotation in either direction, the carriage, however, being capable of movement in one direction, so that the same may be returned when necessary, owing to the ratchet connection between the shaft of the pinion and the escapement-wheel. The operating-face of the inner tooth 15 of the arm stands slightly in advance of the operating-faces of the outside tooth 16, so that it will engage with the teeth of the wheel and prevent the same from turning in its forward direction. As soon, however, as the arm is swung so as to move the

tooth upward out of engagement with the tooth of the wheel, the wheel will move forward until it is engaged by the operating-face of the other tooth. Owing to the difference in diameter between the wheel 6 and the pinion 4 this slight forward movement of the wheel is not sufficient to permit of the rack 5 being moved perceptibly, and therefore the impression of the type upon the paper in the machine is made simultaneously with this slight movement. On the return stroke of the type-operating mechanism the outer tooth is carried downward out of engagement with the tooth of the wheel, and the inner tooth, which is preferably inclined, being drawn downward, will pass into the rear of the tooth of the wheel that has just been released into position to engage with and stop the succeeding tooth of the wheel. In this manner the rack-bar is moved forward one step for every time the spacing-arm is operated. The arm may be operated in any desired manner; but I prefer to provide its free end with an extension 17, the lower end of which is preferably provided with a lateral perforated projection 18, to which any desired part of the operating mechanism may be connected.

Secured to the under side of the frame 10 is a flat spring 19, the free end of which is provided with a cross-head 20, the ends of which engage with the squared end 21 of the arm 11 upon opposite sides of the pivotal points of the arm, so as to normally hold the free end of the arm in its desired position in relation to the teeth upon the escapement-wheel.

In the form of the device shown in Fig. 6 the pointed end 22 of the teeth 23 project outward and preferably extend a slight distance beyond the periphery of the wheel. The forward face of each tooth near the point inclines slightly to the rear, as shown at 24, and the periphery of the wheel is preferably notched to a slight extent, as shown at 25. The forks or abutments 36 and 37 of the spacing-arm occupy two spaces instead of one, as in the construction heretofore described, and are so located relatively to the teeth 23 that when one of them is in engagement with one of the teeth the other one will be standing substantially midway between that tooth and the next succeeding tooth. In this manner the movement of the arm so as to carry the abutments either way from their normal position will cause the forward movement of the wheel in the same manner as heretofore described.

As above described, it will be seen that my improved escapement comprises but few parts, which can be constructed in a very substantial manner, and a machine provided with the same can be operated very easily, owing to the short distance that it is necessary to move the spacing-arm to permit of the rotation of the wheel. It is also evident that slight changes can be made from the form and proportion shown in the drawings, and I reserve the right to make such changes and alterations as will come within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an escapement, the combination, with a base, of a shaft journaled therein, a wheel mounted upon the shaft and provided with crown-teeth, of a frame secured to the base, an arm pivotally secured in the frame, the free end of which is recessed and movable across the path of the teeth of the wheel and the pivotal end is cut off square, a flat spring secured to the frame, the free end of which is provided with a cross-head the ends of which engage with the squared end of the arm upon opposite sides of the pivot, substantially as described.

2. In an escapement, the combination, with a base, of a shaft journaled therein, a wheel mounted upon the shaft and provided with crown-teeth, of a frame secured to the base, an arm pivotally mounted in the frame, the free end of which is recessed and provided with an extension, said extension being provided with a lateral recessed projection, and the pivotal point of the arm is provided with extensions, adjustable supports for the pivotal points, and a spring for engaging with the arm and holding it in its normal position, substantially as described.

3. In an escapement, the combination with a wheel provided with inclined crown-teeth, of a swinging arm pivoted in front of the wheel and at right angles to the axis thereof, the portion of said arm adjacent to the wheel recessed upon one side of the arm and upon one edge thereof to form two abutments, one of which projects beyond the other laterally of the arm, and means for swinging said arm to move the abutments across the path of the teeth of the wheel, substantially as described.

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