

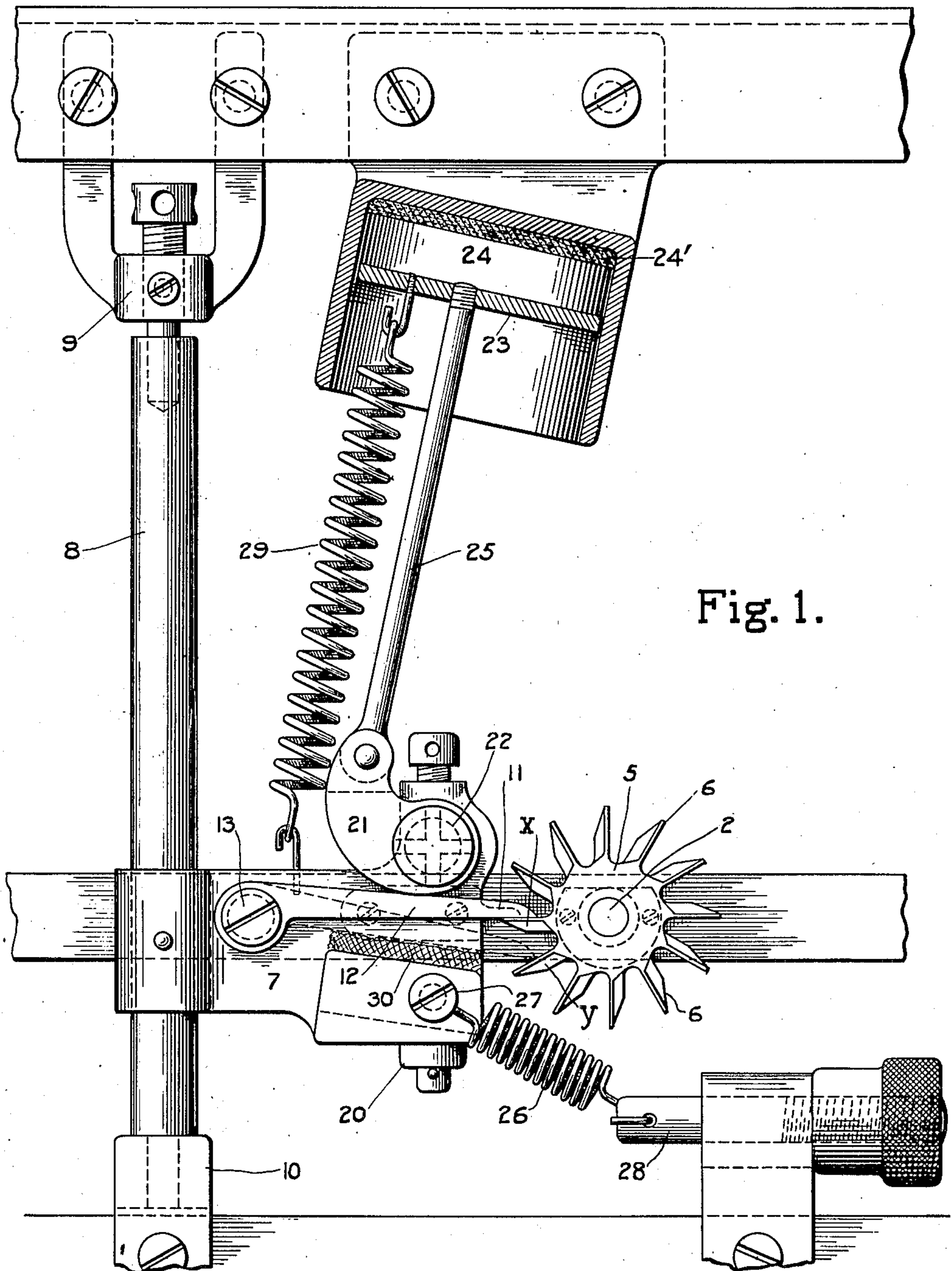
No. 871,280.

PATENTED NOV. 19, 1907.

W. P. KIDDER.
CARRIAGE ESCAPEMENT MECHANISM.

APPLICATION FILED JUNE 24, 1906.

2 SHEETS—SHEET 1.



WITNESSES:
J. A. A. A. A.
C. H. W. W.

INVENTOR
Wellington P. Kidder
BY
W. A. S. S.
ATTORNEYS

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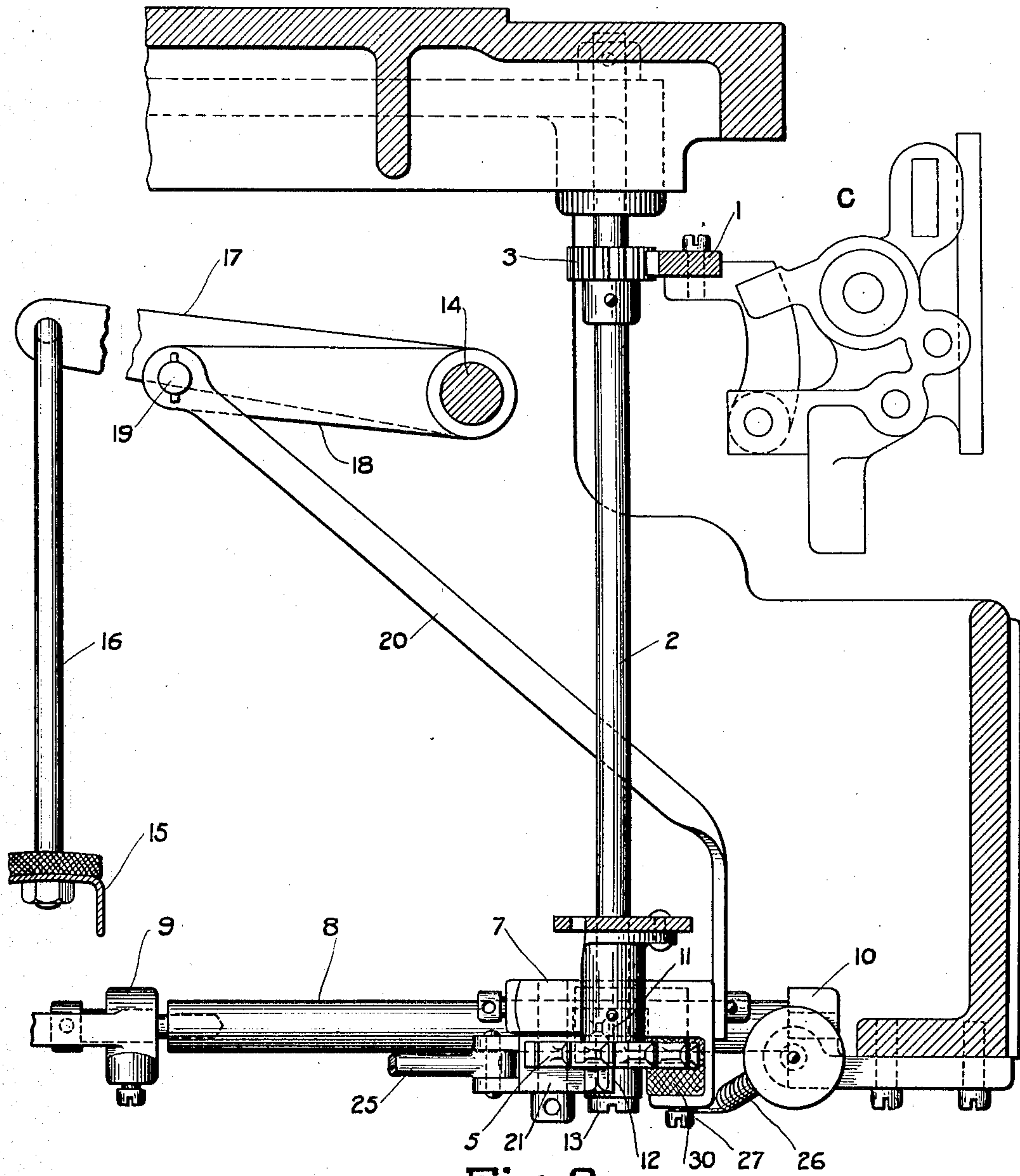


Fig. 2.

WITNESSES:

J. Clayton Ripley.
C. H. Wilson.

INVENTOR

Wellington P. Kidder

BY

Wesley D. Dyer
ATTORNEYS

UNITED STATES PATENT OFFICE.

WELLINGTON PARKER KIDDER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO PARKER MACHINE COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

CARRIAGE ESCAPEMENT MECHANISM.

No. 871,280.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed June 24, 1905. Serial No. 266,813.

To all whom it may concern:

Be it known that I, WELLINGTON PARKER KIDDER, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Carriage Escapement Mechanism for Type-Writers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to typewriting machines and the like and is especially adapted for use in connection with machines known as "silent typewriters."

It will be obvious, however, that while various features of the present invention are particularly adapted for the production of a silently operating typewriter they are also capable of use in a variety of relations with different types of machines.

It has for one of its objects to provide means whereby the machine will operate without noise.

A further object is the provision of escapement mechanism for the carriage feed of positive and reliable action and so constituted as to operate silently.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the mechanism hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is illustrated one of the several possible embodiments of my invention, Figure 1 is an elevation partly in section of a portion of a typewriting machine showing my invention. Fig. 2 is an end elevation of the same.

Similar reference characters refer to similar parts throughout the several views.

As tending to render better understood certain of the various general features of my invention it may here be noted that in typewriting machines of the above type wherein a silent operation is sought, it is essential that the carriage feeding mechanism be so constructed as to operate as noiselessly as possible. For this reason I have found it desirable in machines of this type to provide an escapement mechanism for the carriage feed so constructed as to eliminate concus-

sion or impact of movable parts, thereby insuring a substantially silent operation. The above and other advantages are secured in constructions of the nature of that hereinafter pointed out.

Referring to the drawings, the carriage C is provided with a rack 1 and is constantly urged to longitudinal movement by the driving spring or other actuating device not herein shown as it forms no part of my present invention. Shaft 2 suitably journaled in the frame is provided at one end with a pinion 3 engaging with rack 1 and at its opposite end with an escapement-wheel 5 having a series of axially arranged teeth 6 adapted to co-act with escapement devices hereinafter described. A rocker-block 7 carried by shaft 8 suitably journaled between brackets 9 and 10 secured to the frame of the machine is provided with a fixed dog 11 and a movable dog 12 pivoted at 13 to block 7, said dogs 11 and 12 constituting the escapement-means for escapement-wheel 5.

Horizontal shaft 14 connected to the usual universal bar 15 by means of link 16 and lever arm 17 carries a crank arm 18 to which is pivoted at 19 a link 20 pivotally secured to rocker-block 7. Rocker-block 7 supports a wiper-cam 21 pivoted at 22 which is in constant engagement with escapement dog 12 and this cam is connected to piston 23 operating in dash-pot 24 by means of piston rod 25. Pivoted escapement dog 12 is normally in engagement with one of the teeth of escapement-wheel 5 but is adapted to be disengaged therefrom by a swinging of rocker block 7 against the tension of spring 26 attached to said block 7 at 27 and to an adjusting screw 28 tapped into the frame in the machine. Upon the disengagement of the escapement dog 12 from a tooth 6 of escapement wheel 5, fixed escapement dog 11 is adapted to simultaneously engage with said tooth to prevent a rotation of escapement-wheel 5. Spring 29 attached to rocker-block 7 and to piston 23 is adapted through piston-rod 25 and wiper-cam 20 to swing escapement dog 12 on its pivot when the same is disengaged from escapement wheel 5 to a position adjacent a succeeding tooth of escapement-wheel 5 as shown in the dotted lines of Fig. 1 of the drawings, such movement being arrested by a cushioned-stop 30 positioned upon rocker-block 7. The operation of the above described escapement

which after such description should be to a large extent obvious, is substantially as follows: In order that the same may be more conveniently described, I have designated by 5 *x* the axially arranged tooth which is in engagement with the escapement device as shown in Fig. 2, the succeeding tooth being designated by *y*. When the universal bar 15 is actuated by the pressure of a key-lever or 10 spacing mechanism thereby rocking shaft 14, crank-arm 18 causes link 20 to rock block 7 laterally to disengage movable escapement dog 12 from tooth *x* of escapement wheel 5, said escapement dog and said tooth being 15 normally in engagement as hereinbefore explained. Fixed escapement dog 11 is, however, simultaneously engaged with said tooth and the rotation of escapement wheel 5 is prevented. Escapement dog 12 thus being 20 released, spring 29 acting through piston 23, piston-rod 25, and wiper-cam 21 causes the same to swing on its pivot to a position in proximity to the succeeding tooth *y* in which position further pivotal movement is arrested 25 by means of cushioned stop 30. When pressure on universal bar 15 is released, spring 26 forces rocker-block 7 to its normal position, fixed escapement dog 11 being thereby disengaged from tooth *x* of escapement 30 wheel 5 and pivoted escapement dog 12 simultaneously engaged with succeeding tooth *y*. Escapement dog 12 being free to swing upon its pivot, and escapement wheel 5 by reason of its constant tendency to rotate under 35 the influence of the power-driven carriage as above explained, causes a movement of said escapement dog 12 and wiper-cam 21, such movement being yieldingly resisted by the air-cushion in dash-pot 24, cam 21 operating to silently arrest such movement when 40 the position shown in the full lines of Fig. 1 is reached and, cushion 24' in dash-pot 24 serves as a cushion for piston 23. The rotation of the escapement wheel has allowed the 45 carriage to be fed to an extent equal to the distance between two adjacent teeth of rack 1. It will be noted, however, that the escapement wheel is of greater diameter than the feed pinion, and that accordingly the 50 teeth of the escapement wheel are separated by greater spaces than are the teeth of the feed pinion or the rack. Therefore during the movement of rack 1 for a given distance, the teeth of the escapement wheel will have 55 traveled a relatively greater distance, thus providing a longer space within which the devices employed to resist and finally stop the escapement wheel can act.

It will thus be seen that I have constructed 60 a feeding device for the carriage of typewriting machines which is well adapted to attain the objects sought and which is also characterized by efficiency and simplicity. The co-acting teeth of the escapement wheel en- 65 gage the escapement devices without impact

or concussion and the impulse of said escapement wheel is yieldingly resisted or opposed by the air-cushion in the dash-pot, such movement being ultimately arrested by the wiper-cam. Cushion 30 operates to stop 70 without noise the movement of pivoted escapement dog 12 preparatory to its engagement with a succeeding co-acting tooth of escapement wheel 5.

While I have shown my invention applied 75 to a typewriting machine of the above type, I do not wish to be understood as being limited exclusively to such type of machine it being adapted as to many of its features to machines of other types, although of peculiar 80 value in the relation shown.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from 85 the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. 90

I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statement of the scope of the invention, which, as a matter of language, might 95 be said to fall therebetween.

1. In a typewriting machine, the combination with a power driven carriage, of a rack carried thereby, a shaft carrying a feed pinion and an escapement wheel, the former of which meshes with said rack, escapement mechanism comprising a fixed and a movable dog cooperating with said escapement wheel to afford a feed of the carriage, and a member resting in contact with the movable dog adapted yieldingly to oppose the movement thereof when the same is thrown into engagement with the escapement wheel. 100

2. In a typewriting machine, the combination with a power driven carriage provided with the usual feed rack, of a shaft carrying a feed pinion and an escapement wheel, the former of which meshes with said rack, a rocker member carrying the escapement mechanism comprising a fixed and a movable dog adapted to cooperate with the escapement wheel to afford a feed of the carriage, and a member held in contact with the movable dog adapted yieldingly to resist the movement thereof when the same is thrown into engagement with the escapement wheel, said member being also adapted to arrest the movable dog without impact or concussion at the end of its movement. 110 115 120 125

3. In a typewriting machine, the combination with a power driven carriage provided with the usual feed rack, of a shaft carrying a feed pinion and an escapement wheel, the former of which meshes with said rack, a 13

rocker member, escapement mechanism comprising a fixed and a movable dog mounted on said rocker member, said escapement mechanism cooperating with the escapement wheel to afford a feed of the carriage, and a cam member held in contact with the movable dog adapted yieldingly to resist the movement of the movable dog when the same is thrown into engagement with the escapement wheel and to arrest the same without impact or concussion at the end of a letter spacing movement.

4. In a typewriting machine, the combination with a power driven carriage having the usual feed rack, of a shaft carrying a feed pinion and an escapement wheel, the feed pinion being in mesh with the rack, escapement mechanism comprising a fixed dog and a swinging dog which cooperate with the escapement wheel to afford a feed of the carriage, a rocker member carrying said feed dogs, and a wiper cam engaging the movable dog adapted to yieldingly oppose the movement thereof when the same is swung into engagement with the escapement wheel and also adapted to arrest the movement of said dog at the end of a letter spacing movement of the carriage.

5. In a typewriting machine, the combination with a power driven carriage, of a rack carried thereby, a shaft carrying a feed pinion and an escapement wheel, the feed pinion being in mesh with the rack, escapement mechanism comprising a fixed dog and a swinging dog adapted to cooperate with the escapement wheel to afford a feed of the car-

riage, a rocker member carrying said feed dogs, a wiper cam pivotally mounted upon said rocker member and held in impositive engagement with the movable dog, said cam being adapted yieldingly to resist the movement of the movable dog when the same is swung into engagement with the escapement wheel, a dashpot, and a connection between said cam and the piston of said dashpot.

6. In a typewriting machine, the combination with a power driven carriage, of a rack carried thereby, a shaft carrying a feed pinion and an escapement wheel, the feed pinion meshing with the rack, escapement mechanism comprising a feed dog and a holding dog, the latter normally restraining the movement of the escapement wheel, a rocker member upon which said dogs are mounted, a cam pivotally mounted upon the rocker member and held in engagement with the movable dog, said cam being adapted yieldingly to oppose the movement of the feed dog when the same is thrown into engagement with the escapement wheel, a dashpot, a piston located in said dashpot and connected with said cam, and spring means adapted to return the feed dog to normal position when the same is thrown from engagement with the escapement wheel.

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

WELLINGTON PARKER KIDDER.

Witnesses:

R. WHITE,
C. H. WILSON.