

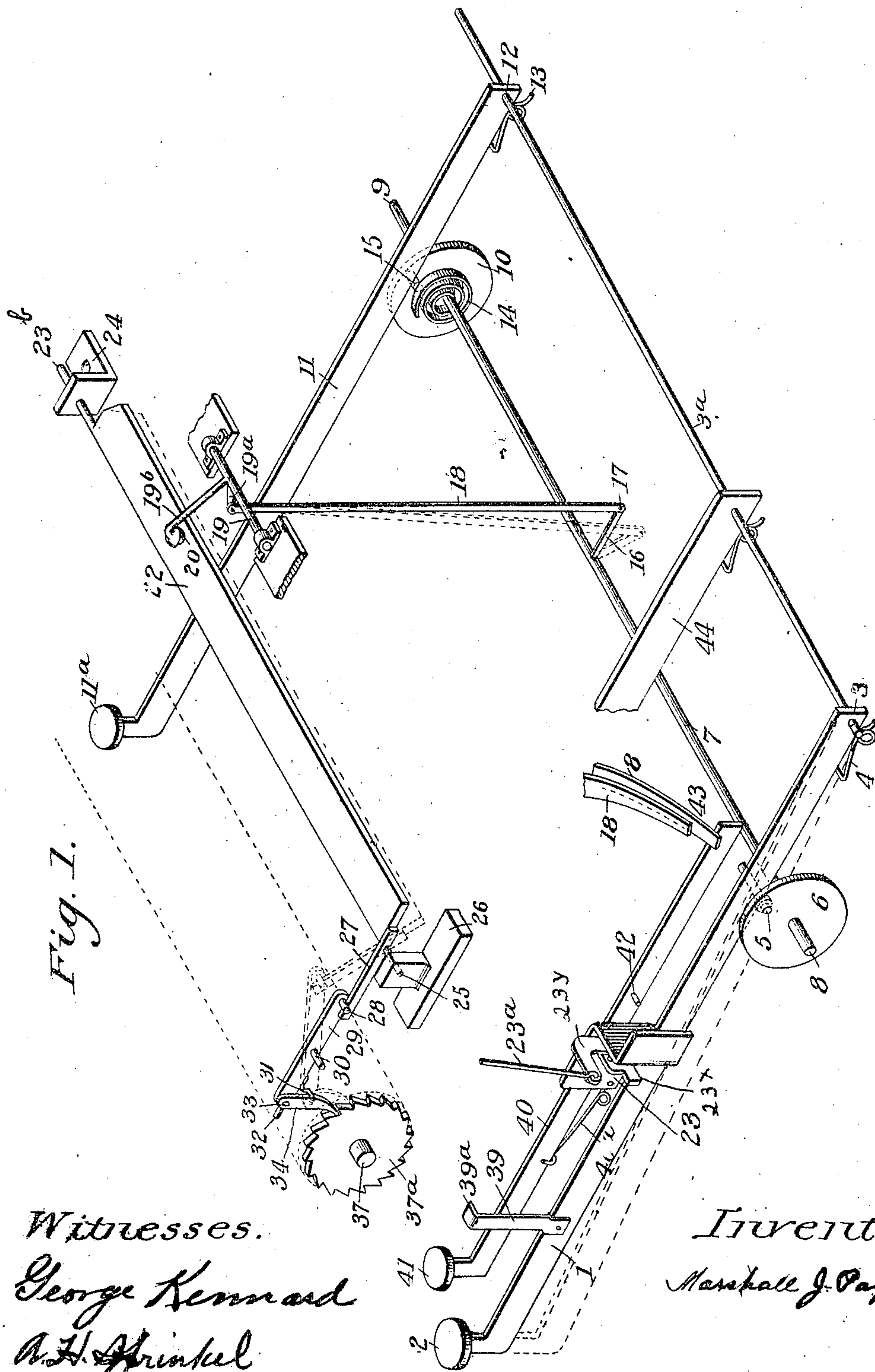
No. 837,338.

PATENTED DEC. 4, 1906.

M. J. PAYNE.
TYPE WRITER.

APPLICATION FILED MAY 9, 1904.

2 SHEETS—SHEET 1



Witnesses.
George Kennard
A. H. Strunkel

Inventor:
Marshall J. Payne

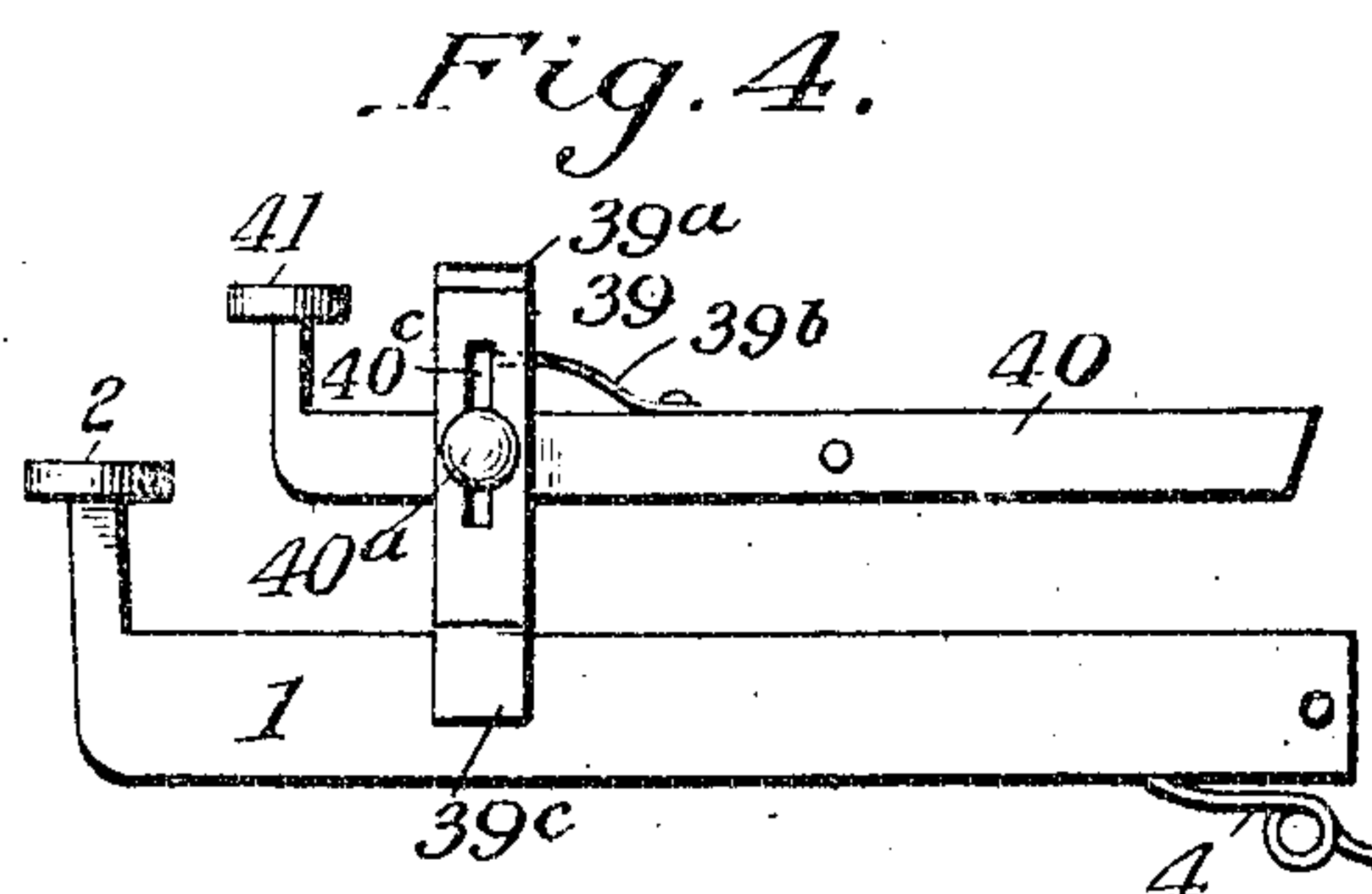
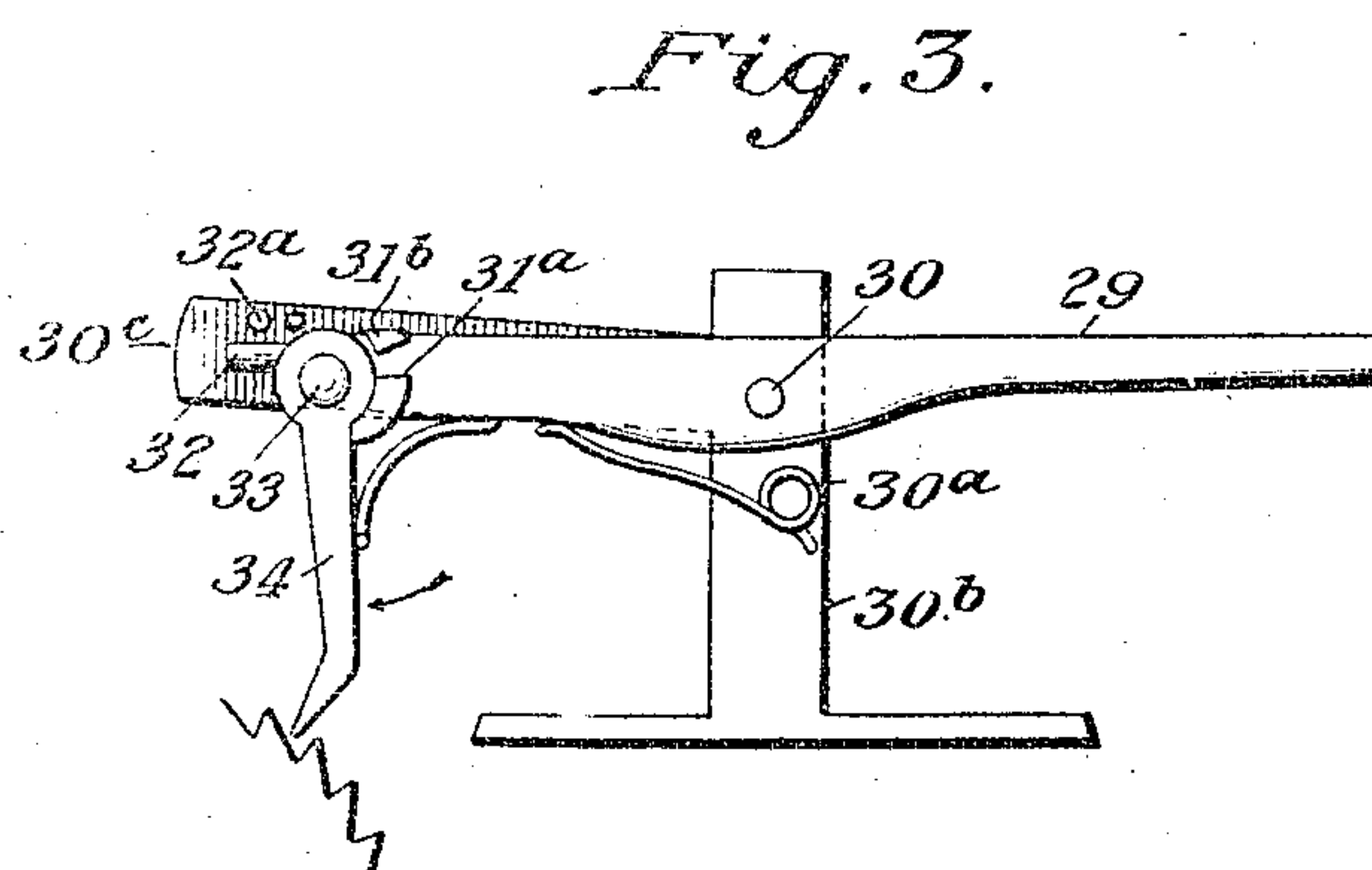
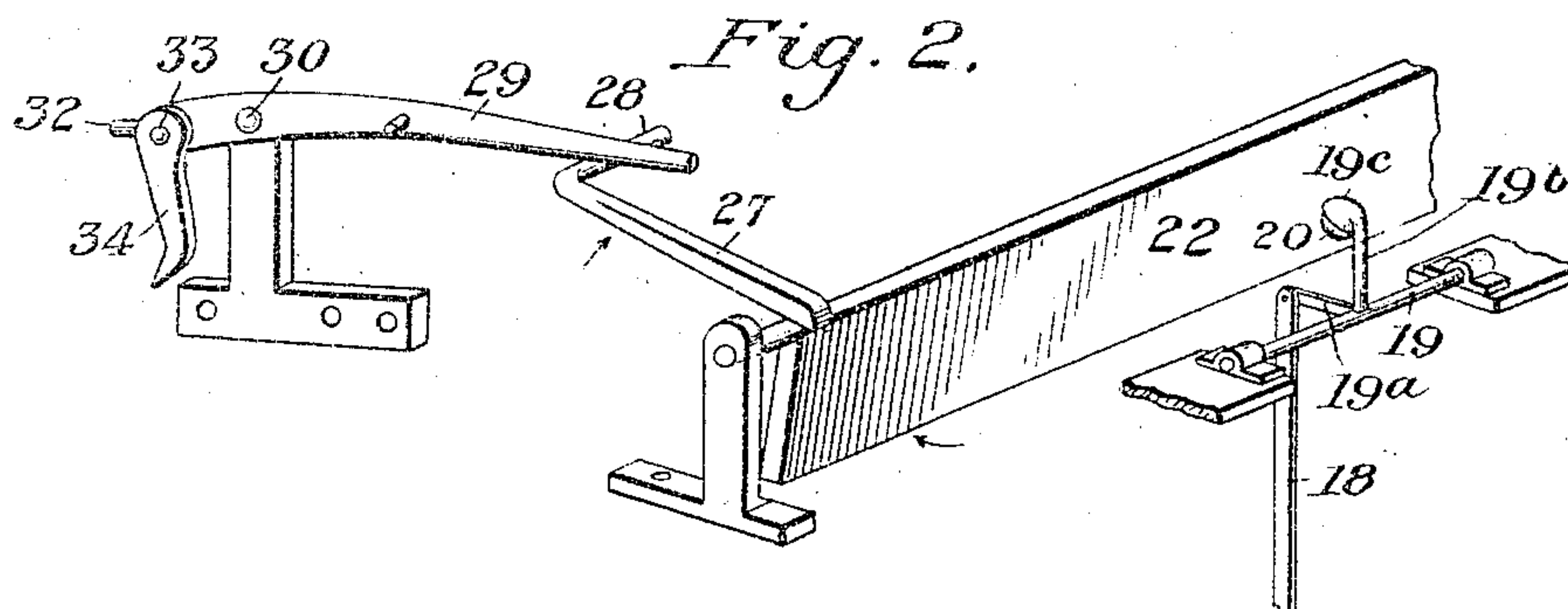
No. 837,333.

PATENTED DEC. 4, 1906.

M. J. PAYNE.
TYPE WRITER.

APPLICATION FILED MAY 9, 1904.

3 SHEETS—SHEET 2



Witnesses:
George Keimard
R. H. Spunkel.

Inventor:
Marshall J. Payne

No. 837,338.

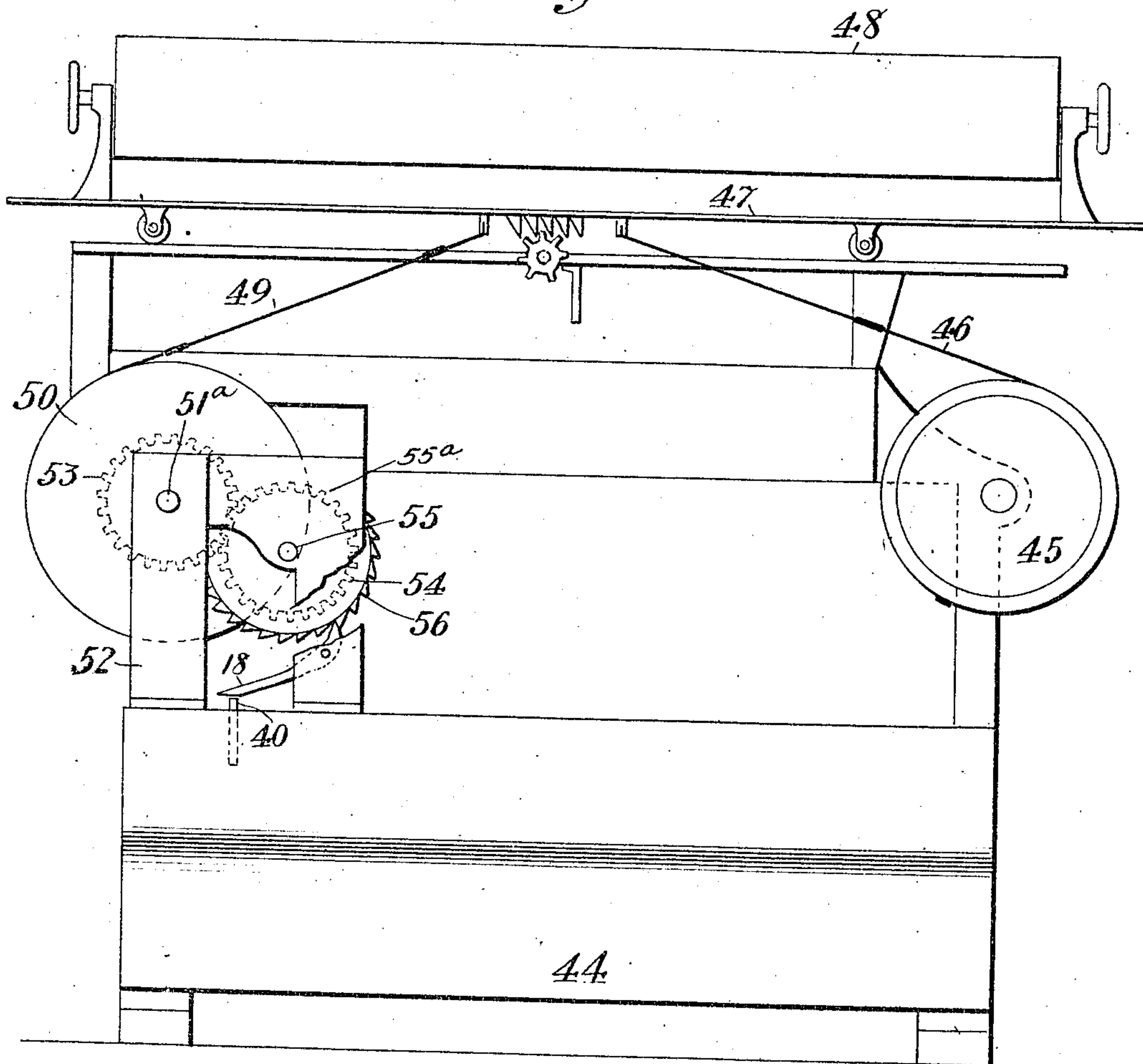
PATENTED DEC. 4, 1906.

M. J. PAYNE.
TYPE WRITER.

APPLICATION FILED MAY 9, 1904.

3 SHEETS—SHEET 3.

Fig. 5.



Witnesses:

A. H. Sprinkel
George Kennard

Inventor:

Marshall J. Payne

UNITED STATES PATENT OFFICE.

MARSHALL J. PAYNE, OF STAUNTON, VIRGINIA.

TYPE-WRITER.

No. 837,338.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed May 9, 1904. Serial No. 207,175.

To all whom it may concern:

Be it known that I, MARSHALL J. PAYNE, a resident of Staunton, Virginia, have invented a new and useful Improvement in Type-
5 Writers, which invention is fully set forth in the following specification.

This invention relates to type-writers, and more particularly to platen-rotating or line-spacing mechanism therefor.

10 The object of the invention is to provide means whereby the platen may be rotated by devices operatively connected to key-levers extending to the keyboard.

The device is so constructed that the platen
15 may be rotated by keys from the keyboard without regard to the position of the carriage.

The device is further applied to type-writers of any standard make having a reciprocating carriage and to type-writers having a reciprocating carriage and devices for the return of the carriage, and more particularly applied to the device as set forth in Patent No. 782,112, granted on application Serial No. 165,169, filed July 11, 1903. When associated with a carriage-return device controlled from the keyboard, I have provided means to rotate the platen and free the mechanism restraining the carriage-return device. One of the levers employed to actuate the platen-rotating device is operatively
30 connected to the lever tripping the pawls restraining the carriage-return spring. It is desired, however, that the platen be rotated the required distance just before the pawls restraining the carriage - return device are withdrawn. It is further desired that the lever acting to withdraw the pawls be locked in a position holding the pawls out of engagement with the ratchet on the spring-barrel of
40 the carriage-return spring until the carriage is fully returned from left to right and then the lever so acting be automatically released.

It is desired, however, to restore the lever actuating the platen-rotating mechanism to a normal position just as the finger is lifted or the rotation of the platen is completed. I have therefore devised novel means of accomplishing the rotating of the platen and freeing of the carriage-return device and in
50 addition means of rotating the platen independent of the carriage-return. I have also devised novel means of adjusting the device for one or a plurality of spaces, in combina-

tion with a device employed to withdraw the pawl from operative engagement with the
55 ratchet on the platen except when the same is in the immediate act of rotating the platen.

The invention may receive various mechanical expressions, the preferable construction, however, being illustrated in the accompanying
60 drawings, in which—

Figure 1 is a partial perspective looking from the right - hand rear corner. Fig. 2 shows a modification of certain parts illustrated in Fig. 1 and shows more particularly
65 the preferable plan of constructing the parts therein illustrated. Fig. 3 illustrates the mechanism I employ for withdrawing the pawl from engagement with the ratchet on the platen-shaft and the means of adjusting
70 the device for a greater or lesser throw of the platen. Fig. 4 shows a modification of certain parts illustrated in Fig. 1, and this construction of the parts allows me to dispense with the lever 11. Fig. 5 is a rear elevation
75 of a type - writer and illustrates certain parts of the type-writing machine used in connection with the present invention.

A carriage-advancing device constructed in any well-known manner and a carriage-
80 return device supplied with any motor-power and a device restraining the carriage-return device are here shown and will be more specifically described and referred to hereinafter in the specification and claims. 85

Referring to the drawings, Fig. 1 illustrates the lever 1 supporting key 2, fulcrumed at 3 on the rod 3^a, which rod acts as a bearing for the typical type-levers 44 and is suitably fastened to the frame of the machine. Lever 11, supporting key 11^a, is similarly fulcrumed to rod 3^a at 12. Spring 4 and spring 13 act to restore the levers 1 and 11 when depressed to a normal position. Journaled on the frame of the machine at 8
95 and 9 is the shaft 7, which shaft is placed beneath the key - bearing levers, (designated typically as 44.) Mounted securely on shaft 7 is the crank member 6, and rigidly secured to the said crank member is the laterally-projecting pin 5, resting normally just under the
100 lower edge or surface of lever 1. This pin is preferably provided with an antifriction-roller bearing. Crank member 10 and pin 15 are an exact counterpart to the crank member before described, the pin 15 normally
105

resting just beneath the lower edge of lever 11.

Spring 14, fastened to the shaft 7 and to any suitable part of the machine, acts to re-
 5 turn the shaft to a normal position whenever the same is rotated. The arm 16 is securely mounted on shaft 7 and connected to the pull-rod 18 by any suitable connection. The pull-rod 18 is likewise connected to arm 19^a,
 10 the said arm 19^a being securely fitted to the rock-shaft 19. The shaft 19 is suitably journaled on the upper rear portion of the machine, preferably near the center of the travel of the well-known carriage. Member 19^b,
 15 fastened to shaft 19 and supporting the ball-bearing 20, should be just at the center of the travel of the carriage, ball 20 being in operative relation to the vibrating bar or blade 22. The said bar or blade 22 is pivoted on
 20 the carriage at 23^b and 25 by bracket-pieces 24 and 26, and the same travels with the carriage. Supported on the said bar or blade 22, and preferably integral therewith, is the arm 27, extending in a forward direction and
 25 resting under the laterally-projecting pin 28, secured to the rearwardly-extending arm of pawl - carrying lever 29, the lever 29 fulcrumed at 30 and having pivoted at 33 a pawl member 34, the said pawl member en-
 30 gaging the ratchet-wheel 37^a, journaled on the platen-shaft 37. A spring 30^a at bearing 30 acts to return the lever 29 to a normal position whenever the actuating force is with-
 35 drawn. Spring 31 acts to normally force pawl 34 into operative engagement with the ratchet-wheel 37^a. The function of the ball and the ball-bearing at 20 is to relieve the friction of the parts and to allow for motion in two directions.

40 Lever 40, having bearing at 42 and supporting key 41 and provided with a rearwardly-extending arm resting under pawls 8 and 18 at 43 and being also provided with a lock 23, is fully described in Patent No.
 45 782,111, granted on application Serial No. 165,169, filed July 11, 1903. The function of the lever 40 is as follows: When key 41 is depressed, it causes a corresponding elevation of the rearwardly-extending arm of lever
 50 40, which acts to lift the pawls 8 and 18 resting on lever 40 and to withdraw the said pawls from engagement with the ratchet-wheel on the spring-barrel of the carriage-return spring.

55 In order that the pawls 8 and 18 be disengaged during the return of the carriage, it is required to retain the rearward end or arm of the lever 40 in an elevated position during the return movement of the carriage. Any
 60 suitable device may be employed therefor, however.

In Fig. 1 a lock is illustrated that may be clearly understood by reference to the drawings. The latch 23^x is so mounted that its

nose engages the lever 40 whenever the rear- 65
 ward arm is elevated, and thereby retains said arm in that position.

The release mechanism is simply a bell-
 crank lever 23^y, fulcrumed on the machine-
 frame and having one arm connected to the 70
 latch 23^x and the other arm connected to a pull-rod 23^a. A pull on the said rod acts to withdraw the latch from engagement with the lever 40, and said lever is then restored to a
 normal position by spring 40^a. 75

The member 39, rigidly secured to lever 1 and extending in an upward direction, terminates in a lateral extending projection 39^a,
 overhanging lever 40. The function of the
 said member is as follows: When lever 1 is de- 80
 pressed, the said member 39 traveling therewith after a predetermined distance comes into contact with or engages the upper edge or border of lever 40, which then acts to pull
 lever in a downward direction. The lever 40 85
 and the lever 1 having reached the end of their respective travel, lever 40 is locked in a depressed position; but the lever 1, carrying member 39, is restored by virtue of spring 4
 to a normal position in advance of lever 40. 90
 In this way I avoid friction between the bar 22 and the ball-bearing 20. Furthermore, the parts are allowed to return to a normal position and all stress or friction of bearing is reduced to a minimum. 95

Referring to the drawings, Fig. 5, on any
 suitable framework 44 is mounted the car-
 riage-advancing mechanism 45, connected to
 the carriage 47 and bearing the platen 48 by
 the cable 46. The carriage-advancing mech- 100
 anism is constructed in any well-known manner and permits the carriage to be advanced
 step by step as the characters are printed.

On the opposite side of the machine from
 the carriage-advancing mechanism is the car- 105
 riage-return device, in which the shaft 55 is suitably journaled in the frame 52 and hav-
 ing keyed thereon the ratchet-wheel 56 and
 the gear-wheel 54, the gear-wheel 53 having
 bearing on the shaft 51^a and meshing with 110
 the gear-wheel 54 and connected to the pulley 50, likewise having bearing on the shaft
 51^a. The shaft 51^a is suitably journaled in
 the frame 52. The cable 49, having one end
 fastened to the periphery of the pulley 50 115
 and the other end secured to the carriage 47,
 acts to withdraw the carriage from left to
 right whenever the carriage-return mechan-
 ism is actuated. The retaining-pawl 18 is
 pivoted on the frame 52 in such position as 120
 to engage the ratchet-teeth on the ratchet-wheel 56 and to restrain it until the lever 40,
 resting just under the tail of the said pawl, is
 operated. Whenever the lever 40 is oper-
 ated, it acts to withdraw the pawl 18 from en- 125
 gagement with the ratchet-wheel 56 and to
 free the mechanism just now described. I
 wish it distinctly understood, however, that

the principle of my invention does not restrict me to any motive power that may be employed to actuate the carriage-advancing device or the carriage-return device.

5 The action of the mechanism as so far described is as follows: Should it be desired at the end of the written line to return the carriage to the extreme right-hand position and to rotate the platen the required distance for
10 the next line, all that is required is to press the key 2, which acts to correspondingly depress lever 1, and consequently rotate the eccentric member 6 and with it shaft 7, arm 16 therefore acting to rotate shaft 19 through
15 the pull-rod 18. The rotation of shaft 19 acts to cause ball-bearing 20 to engage and vibrate the vibrating member 22, which acts to elevate the arm 27, causing a corresponding elevation of the rearwardly-extending
20 arm of lever 29. The forward end of lever 29, as will be plainly seen, is therefore depressed, and with it pawl 34, the same acting to rotate the platen by engaging the toothed wheel 37^a, supported on the platen-shaft 37.
25 So soon as the actuating force is relieved the spring 14 acts to return the shafts 7 and 19 to a normal position, and therefore allows all the parts to assume a normal position, as before described. The downward travel of lever 1,
30 carrying with it member 39 supported thereon, engages lever 40, as before explained, after a predetermined distance and the same acting to withdraw pawls 8 and 18 and allow the carriage to be returned in virtue of the
35 function of the carriage-return spring.

Should it be desired to rotate the platen without returning the carriage, as is frequently the case, all that is necessary is to
40 press key 11^a, which acts to rotate crank member 10 and cause the rotation of shaft 7, the mechanism thereafter being the same as before described.

Fig. 2 illustrates the vibrating bar 22 and ball-bearing 20 in operative relation. In
45 this figure, the vibrating member is illustrated in a perpendicular plane, the line of motion whenever the said bar is actuated being illustrated by the arrow. Pin 28 is preferably provided with an antifriction-
50 roller to reduce the friction at this point, the same receiving any mechanical expression best suited to serve the purpose.

Fig. 3 illustrates the pawl-carrying lever 29, suitably pivoted on a bracket at 30 and
55 provided with spring 30^a, preferably supported by a spring-barrel and acting normally to restore lever 29 to an elevated position. The bracket 30^b, supporting the lever 29, has an arm 30^c extending in a forward
60 direction, and mounted on the said arm 30^c so extended is a stop-pin 32^a, which stop-pin is adjustable in the perforations in the arm 30^c. On the pawl 34 and extending in a forwardly direction is the arm 32, and in the

path of travel of the said arm 32 is the ad- 65 justable stop-pin 32^a, the function of which will be presently described. The cam-stop 31^a is securely fastened to the pawl 34 and is preferably integral therewith, and mounted
70 on lever 29 is a similar or companion cam-stop 31^b, the same being in operative relation to the cam-stop 31^a, mounted on the pawl 34. The spring 34^a acts to cause pawl 34 to en-
75 gage the toothed wheel 37^a whenever the pawl-carrying lever is actuated. The platen-shaft 37, suitably journaled on the carriage and carrying thereon the platen 37^b and the
80 ratchet-wheel 37^a, is constructed in any well-known manner and calls for no special description.

The action of the mechanism as above explained is as follows: The depression of the keys 2 and 11^a acts to cause the pawl 34 to engage and rotate the toothed wheel 37^a, as before explained. The return of the
85 lever 29 is in virtue of the function of spring 30^a, carrying pawl 34, and with it the arm 32. In the path of arm 32 is the stop-pin 32^a, which acts to withdraw the pawl out of
90 operative relation with ratchet 37^a. The upward travel of lever 29 is further prevented by the cam-stops 31^a and 31^b engaging and also in virtue of the stop-pin 32^a engaging the arm 32, supported on pawl 34.
95 The adjusting of stop-pin 32^a in a lower or higher hole will cause the lever 29 to be correspondingly adjusted for a greater or lesser travel, and therefore whenever the lever 29
100 has a greater throw the platen will be rotated for a plurality of spaces, and when the lever 29 is adjusted for a lesser throw the platen will be rotated for a single space.

Fig. 4 illustrates a modification of the device employed to operatively connect the
105 levers 1 and 40. In this figure the slotted member 39 has a key 39^a mounted on the upwardly-extending end of said member. The pin 40^a is securely fastened to the lever
110 40, the said pin being provided with an annular rim projected over the slot, which allows lever 40 to be actuated until the upper end of the slot comes into contact with the pin 40^a. Spring 39^b acts to restore member 39
115 to a normally elevated position. The lower end of slotted member 39 is provided with a suitable surface in order to rest on the lever 1 and when the said member 39 is depressed by key 39^a to cause a corresponding depression of lever 1. The action of the parts ex-
120 plained above and illustrated in Fig. 4 is as follows:

Should it be desired to rotate the platen without returning the carriage, all that is required is to press key 2 and by it lever 1,
125 which lever, as is illustrated, is free to travel, the member 39 being not attached to the said lever.

Should it be desired to rotate the platen

and return the carriage, all that is required is to depress key 39^a, which acts to depress member 39 and to cause a corresponding depression of lever 1, the same acting to rotate the platen, the member 39 continuing to travel in a downward direction until the upper limit of the slot 40^a engages the pin 40^a, and thereby the lever 40 is correspondingly depressed. The slot in member 39 acts also to allow the return of lever 1 independently and prior to the return of lever 40.

It will be further clear that the arrangement of the parts in Fig. 1 and in Fig. 4 allows the platen to be rotated independent of the return of the carriage and in any position of the carriage. The mechanism also allows the carriage to be returned independent of the rotation of the platen by depressing key 41.

Having thus described the invention, I claim—

1. In a type-writer, the combination of a reciprocating carriage and a rotatable platen thereon, devices for rotating the platen a predetermined distance, devices returning the carriage, and devices restraining the carriage-return device, levers having keys at the keyboard for operating said devices, means whereby one of the said levers operates the other, said means allowing both levers to be operated independently, and means retaining one lever in a depressed position during the return of the carriage.

2. In a type-writer, the combination of a reciprocating carriage and a rotatable platen thereon, platen-rotating devices on the carriage, devices returning the carriage, devices restraining the carriage-return device, levers operating said devices, said levers actuating the mechanism to rotate the platen and free the carriage-return device, means whereby one of the said levers operates the other lever, and means retaining one of the levers in a depressed position during the return of the carriage.

3. In a type-writer, the combination of a reciprocating carriage and a rotatable platen thereon, devices for rotating the platen, devices for returning the carriage, devices restraining the carriage-return device, key-bearing levers fulcrumed on the machine and in operative relation to the device rotating the platen and the device restraining the carriage-return device, means operatively connecting the levers whereby one of said levers may be operated by the other, or both may be operated independently, and means for retaining one lever depressed until the carriage is returned.

4. In a type-writer, the combination of a reciprocating carriage and a platen thereon, platen-rotating devices, devices returning the carriage, and devices restraining the carriage-return device, key-bearing levers ful-

crumed on the machine and in operative relation to the said devices, means operatively connecting the levers whereby one of said levers may be operated by the other, or both may be operated independently.

5. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, one of the levers operatively connected to a platen-rotating device on the carriage, and the other lever in operative relation to a carriage-return device, devices operatively connecting the levers and allowing one lever to travel a predetermined distance before actuating the companion lever, means retaining one of said levers in a depressed position until the carriage is returned.

6. In a type-writer, the combination of a pawl-carrying lever with a pawl, a cam member on the pawl, and a cam member on the pawl-carrying lever, a forwardly-extending arm on the pawl, an adjustable stop-pin in the path of the said arm and cooperating with said arm whereby the movement of the pawl-carrying lever acts to withdraw the pawl from engagement with the toothed wheel on the platen-shaft, and said movement of the pawl and pawl-carrying lever acting to engage the said cam members and thereby to stop the upward travel of the said pawl-carrying lever.

7. In a type-writer, the combination of a pawl-carrying lever and a pawl, a cam member on the pawl and a cam member on the pawl-carrying lever, a forwardly-extending arm on the pawl, a platen and a platen-shaft, a toothed wheel on the platen-shaft, means cooperating with said arm whereby the pawl is withdrawn and the cam members are engaged by the movement of the pawl-carrying lever and the movement of the pawl.

8. In a type-writer, the combination of a reciprocating carriage and a platen thereon, a platen-rotating device on the carriage, a vibrating member on the carriage and operatively connected to the platen-rotating device, a carriage-return device, a device restraining the carriage-return device, a lever in position to free the device restraining the carriage-return device, a lever fulcrumed on the machine and operatively connected to the vibrating member, and means connecting the levers, whereby the movement of one lever imparts motion to the other lever and thereby acts to rotate the platen and return the carriage, and means retaining one of the said levers in a depressed position during the return of the carriage.

9. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, one of the levers operatively connected to a platen-rotating device, and the other lever in operative relation to a device restraining a carriage-return device, devices operatively connecting the levers and allow-

ing one lever to travel a predetermined distance before actuating the companion lever, and means retaining one of said levers in a position whereby the restraining device is disengaged until the carriage is returned.

10. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, one of the levers operatively connected to a platen-rotating device, and the other lever in operative relation to a device restraining a carriage-return device, devices operatively connecting the levers and allowing one lever to travel a predetermined distance before actuating the companion lever, with means whereby one of the levers is retained in a depressed position during the return of the carriage.

11. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, one of the levers operatively connected to a platen-rotating device, and the other lever in operative relation to devices restraining a carriage-return device, devices operatively connecting the said levers, and allowing one lever to travel a predetermined distance before actuating the companion lever, and means for retaining one of the levers depressed whereby one of the said levers returns to a normal position in advance of the other lever.

12. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, a platen-rotating mechanism actuated by one of the levers, and a carriage-return device and devices restraining the carriage-return device operated by the other lever, devices operatively connecting the levers and allowing one lever to travel a predetermined distance before actuating the companion lever, means for retaining one of the levers depressed until the carriage is returned.

13. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, platen-rotating devices operated by one of the levers, a carriage-return device and a device restraining the carriage-return device operated by the other lever, means connecting the levers whereby one of the levers may be operated by the other or both may be operated independently, and means for retaining the lever operating the restraining device in a depressed position during the return of the carriage.

14. In a type-writer, the combination of a carriage and a platen thereon, platen-rotating devices on the carriage, a carriage-return device and a device restraining the carriage-return device, with levers fulcrumed on the machine substantially parallel, one of the levers in operative relation to the device restraining the carriage-return device, and the other lever operatively connected to the platen-rotating device, means operatively

connecting the levers whereby movement of one of the levers actuates the other lever to rotate the platen and free the carriage-return device, and means retaining the lever operating the carriage-return device in a depressed position during the return of the carriage.

15. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, devices connecting the levers whereby movement of one of the levers imparts motion to the companion lever, with means allowing the said levers to be operated independently, platen-rotating devices operated by one of the levers, and devices restraining a carriage-return device operated by the other lever, means retaining the lever operating the said restraining device in a depressed position during the return of the carriage.

16. In a type-writer, the combination of levers fulcrumed on the machine substantially parallel, means operatively connecting the levers whereby movement of one of the levers imparts motion to the other lever, and means allowing the levers to be operated independently, platen-rotating means actuated by one of the levers, a carriage-return device and means restraining the carriage-return device operated by the other lever, means retaining the lever operating the restraining device in a position whereby the said restraining device is disengaged until the carriage is returned.

17. In a type-writer, the combination of a reciprocating carriage and a platen thereon, platen-rotating devices on the carriage, a shaft bearing crank members, operative connections between the platen-rotating device and the said shaft, levers fulcrumed on the machine and having keys at the keyboard, with said crank members adjacent to and in operative relation to the said levers.

18. In a type-writer, the combination of a reciprocating carriage and a platen thereon, platen-rotating devices and a vibrating member on the carriage, a shaft on the machine, crank members on the shaft, devices operatively connecting said shaft and vibrating member, operable means connecting the platen-rotating devices and vibrating member, levers fulcrumed on the machine adjacent to and in operative relation with the crank members and acting to rotate the platen.

19. In a type-writer, the combination of a carriage and a platen thereon, a platen-rotating device and a vibrating member supported on the carriage, operative connections between said device and vibrating member, a shaft journaled on the machine, crank members on the shaft, devices connecting said shaft and vibrating member, key-bearing levers fulcrumed on the machine adjacent to and in a position to engage the said crank members.

20. In a type-writer, the combination of a carriage and a platen thereon, platen-rotating devices on the carriage, a rock-shaft on the machine, a member on the rock-shaft, an
5 antifriction-bearing on the member, a shaft journaled on the machine, crank members on the shaft, levers fulcrumed on the machine adjacent to and in position to engage said crank members, operable means connecting

the devices whereby the mechanism acts to rotate the platen.

In testimony whereof I have signed this specification in the presence of two witnesses.

MARSHALL J. PAYNE.

Witnesses:

GEORGE KENNARD,
A. H. SPRINKEL.