L. BROWN.

TYPE WRITER ATTACHMENT.

APPLICATION FILED AUG. 22, 1910.

990,223.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.

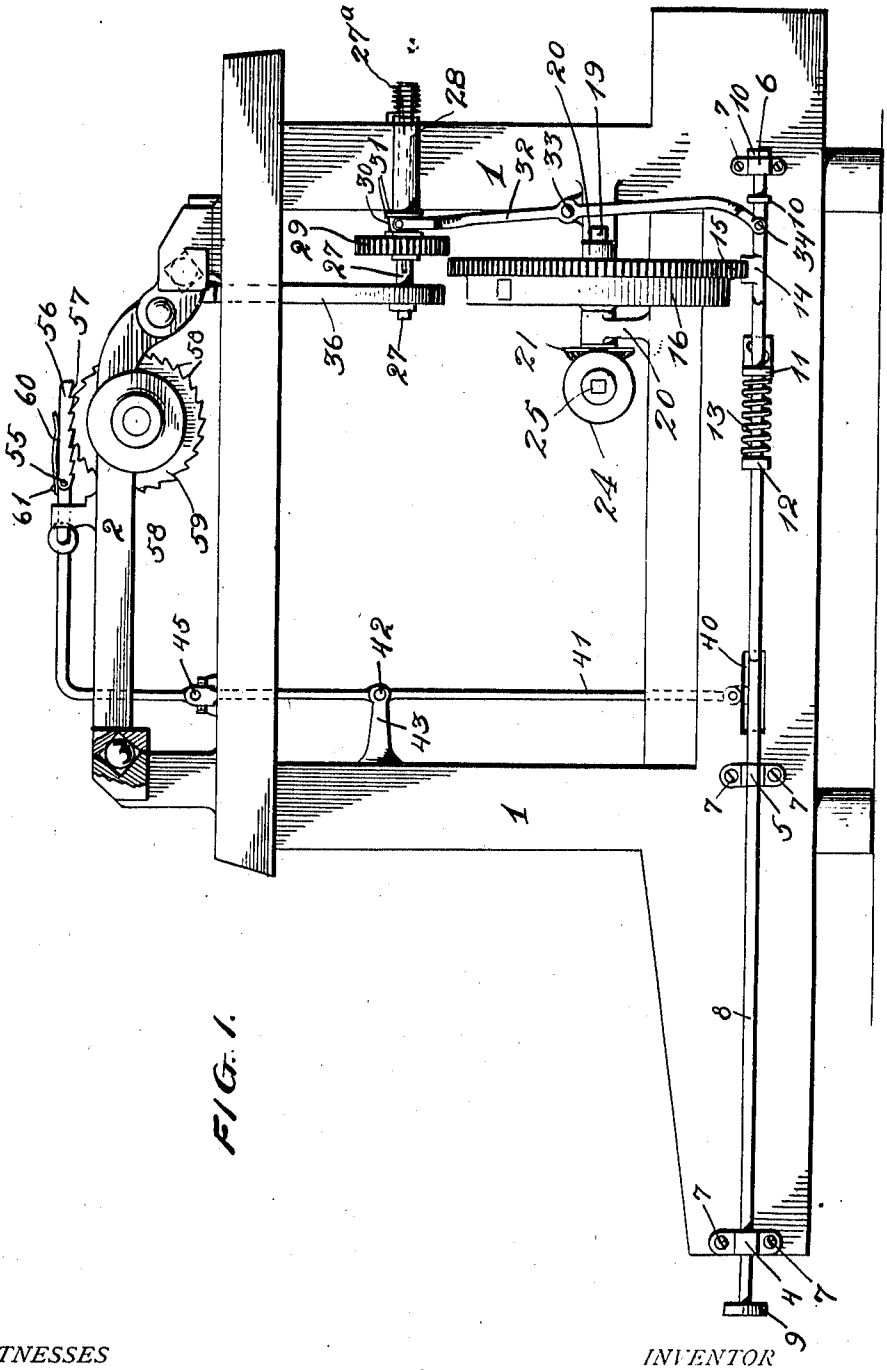

FIG. 1.

WITNESSES

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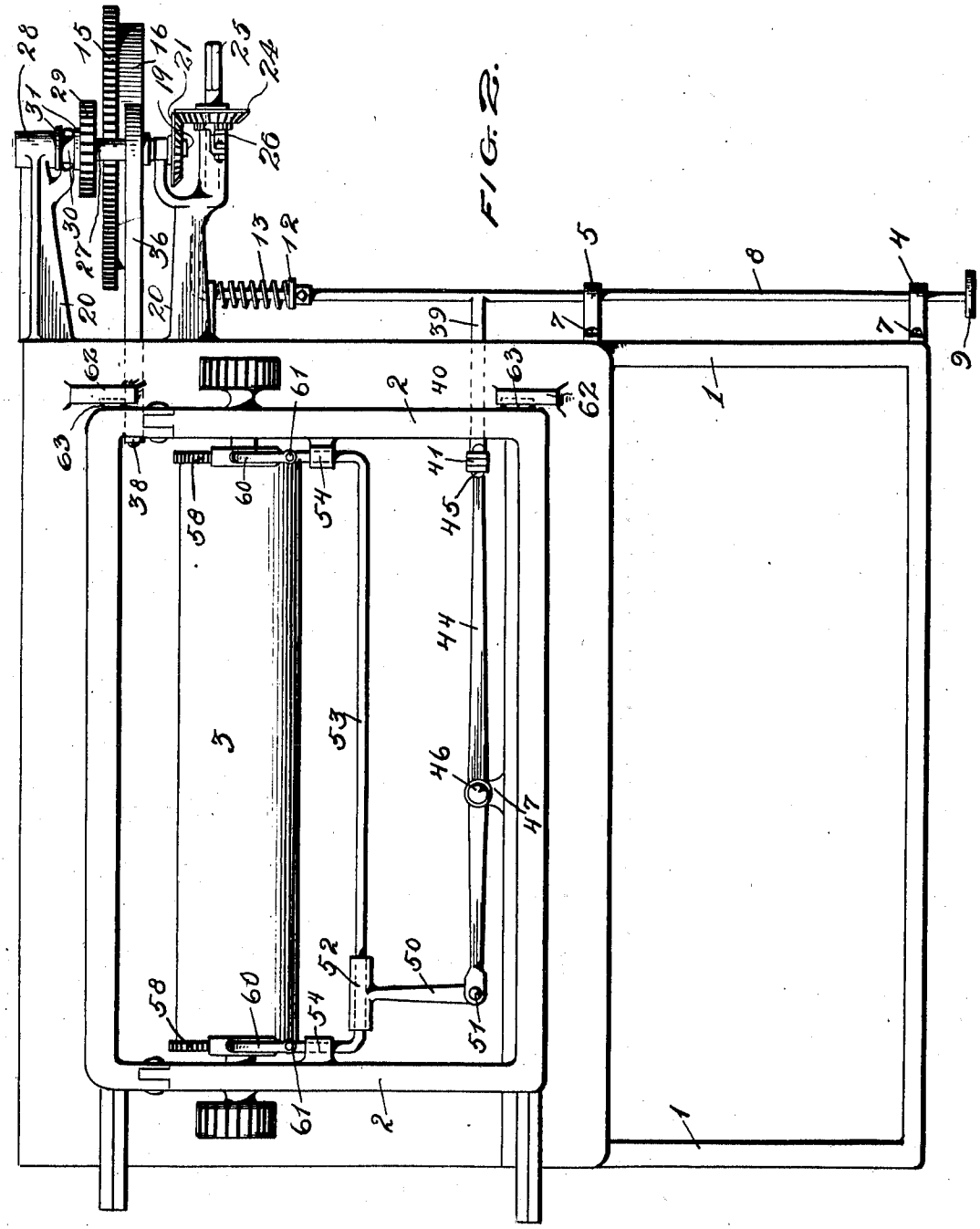
3 SHEETS—SHEET 2.

FIG. 2.



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3 SHEETS—SHEET 3.

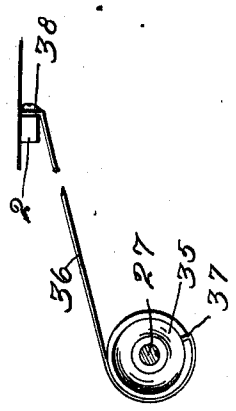

FIG. 6.

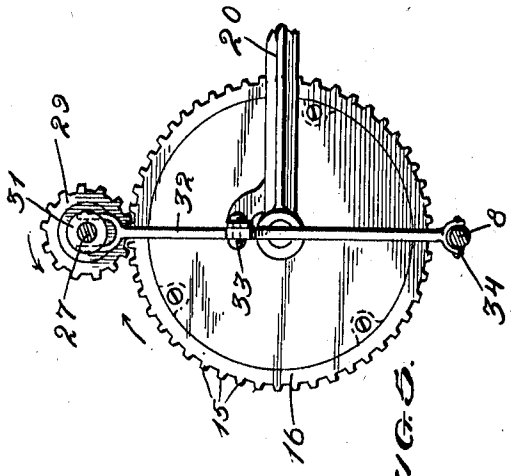

FIG. 5.

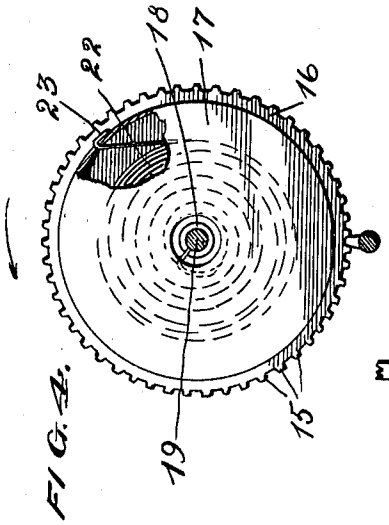

FIG. 4.

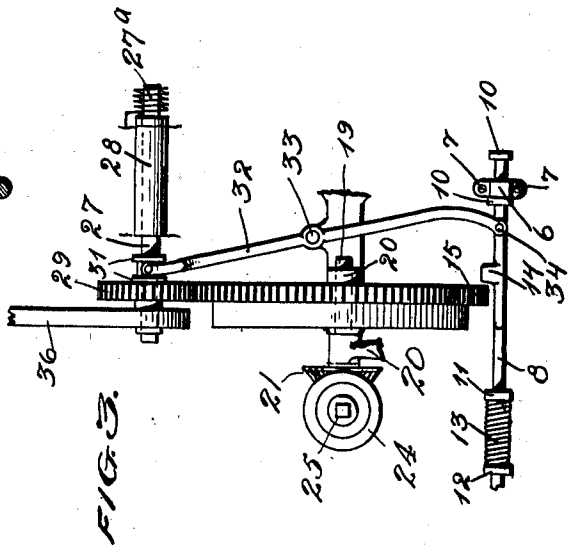

FIG. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

LAYTON BROWN, OF YOUNGSTOWN, OHIO, ASSIGNOR OF ONE-HALF TO FRANK L. ZIMMERMAN, OF YOUNGSTOWN, OHIO.

TYPE-WRITER ATTACHMENT.

990,223. Specification of Letters Patent. Patented Apr. 25, 1911.

Application filed August 22, 1910. Serial No. 578,441.

To all whom it may concern:

Be it known that I, LAYTON BROWN, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Type-Writer Attachments, of which the following is a specification.

My invention relates to means to be employed in connection with typewriters, which when operated will return the carriage to its starting position and at the same time rotate the platen.

An important object of this invention is to provide means of the above character, which are simple in construction, easily operated, and a time saver to the operator of a typewriter.

In carrying out my invention I provide any preferred or well known form of typewriter with a spring motor, which is stronger than the spring motor for effecting the escapement movement of the carriage. This spring motor is suitably connected with the carriage, so that when the carriage has reached the end of its escapement movement, the spring motor is released and said carriage automatically returned to its starting position. Simple means is provided to release the spring motor and at the same time render operative its connection with the carriage. Means are provided for rotating the platen upon the return of the carriage to its starting position, the last named means having connection with and being operated by the means for releasing the spring motor.

In the accompanying drawings forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same, Figure 1 is an end view of a typewriter equipped with means embodying my invention, Fig. 2 is a plan view of the same, Fig. 3 is a detail view of the spring motor and associated members, Fig. 4 is a left side view of the hollow gear of the spring motor, a portion thereof being shown broken away, Fig. 5 is a right side view of the same, and Fig. 6 is a detail view of a pulley and its connection with the carriage.

In the drawings wherein is illustrated a preferred embodiment of my invention, the numeral 1 designates the body frame of a typewriter of any preferred or well known type. Upon this body frame is longitudinally movably mounted a carriage 2, within which is rotatably mounted a platen 3. It is to be understood that the ordinary spring motor (not shown) is to be employed to effect the escapement movement of the carriage. No further detail description of the typewriter in general will be given.

The right end of the body frame 1 is provided upon its base with spaced brackets 4, 5 and 6, which are suitably secured upon said base, as shown at 7. These brackets slidably support an operating rod 8 carrying upon its forward end a key 9. The rod 8 is provided near its rear end with spaced flanges 10, disposed upon opposite sides of the bracket 6 for limiting the longitudinal movement of said rod. A bracket 11 is suitably secured to the base of the body frame 1, as shown in Fig. 1, and provided with an opening formed therethrough to loosely receive the rod 8. This rod is provided near the bracket 11 with a flange 12 fast upon the same, having engagement with a compressible coil spring 13 which also engages the bracket 11. The function of this coil spring is to normally retain the rod 8 in its most forward position. The rod 8 is off-set rearwardly of the bracket 11 and is provided upon this off-set portion with a tooth or lug 14 for engagement with teeth 15 carried by a hollow gear 16. This hollow gear has one side thereof closed by a removable circular plate 17. The gear 16 is rotatably mounted upon a sleeve 18, which is fast upon a shaft 19. This shaft 19 is horizontally disposed and suitably journaled through brackets or extensions 20 formed upon the body frame 1. A bevel gear 21 is rigidly mounted upon the shaft 19 forwardly of the hollow gear 16. Within the hollow gear 16 is arranged a coil spring 22 having its inner end fixedly secured to the sleeve 18 in any suitable manner, and its outer end fixedly secured to the periphery of the hollow gear 16, as shown at 23. The hollow gear 16 is normally held against rotation by the tooth 14, and when so held the spring 22 may be wound up by proper rotation of a bevel gear 24 disposed in engagement with the bevel gear 21. The bevel gear 24 is rigidly mounted upon a suitably supported shaft 25, having its free end formed square in cross-section for suitable engagement with a key, whereby said shaft may be readily rotated. The rotation of the shaft 25 for unwinding the spring 22 is pre-

vented by means of a pawl 26 having engagement with ratchet-teeth formed integral with the bevel gear 24 as shown. This pawl is pivotally mounted upon the bracket 20. Disposed above and near the gear 16 is a horizontal shaft 27 suitably journaled through a bracket 28 formed upon the body frame 1, as shown.

Upon the rotatable shaft 27 is splined a pinion 29 for movement into and out of engagement with the teeth 15 carried by the gear 16. The pinion 29 has rigid engagement with a sleeve 30 which is also splined upon the shaft 28 and is provided with spaced annular flanges 31, as shown. A shifting lever 32 is pivoted intermediate its ends, as shown at 33, to the body frame 1, and this shifting lever has its upper end bifurcated to form spaced tines which are disposed between the flanges 31. The lower end of the shifting lever 32 has pivotal connection, as shown at 34, with the off-set portion of the operating rod 8. From the construction of the above referred to parts, it is obvious that when the operating rod 8 is moved rearwardly the pinion 29 is first moved into engagement with the teeth 15 and upon further movement of this operating rod the tooth 14 disengages the teeth 15. The pinion 29 will then be rotated by the hollow gear 16, by virtue of the coil spring within the same, to return the carriage 2 to its starting position. In order that this rotation of the pinion 29 may be employed, as above stated, the shaft 27 is provided upon its inner end with a pulley 35 fast upon said shaft. This pulley has a suitably flexible strip 36 wound about the same, one end of said strip being fixedly secured to the pulley 35, as shown at 37, and the other end of said strip being fixedly secured to the right end of the carriage 2, as shown at 38.

From the description of the above referred to parts, it is obvious that when the pinion 29 is rotated in the direction of its arrow, the pulley 35 will be correspondingly rotated and the strip 36 wound upon said pulley to return the carriage to its starting position. Special attention is called to the fact that while the carriage 2 is moving to the left, which is the ordinary escapement movement, the pinion 29 is disengaged from the teeth 15, whereby this pinion will be free to rotate without effecting the rotation of the hollow gear 16, which is now locked against rotation by the tooth 14.

The operating rod 8 is provided near its center with a rigid inwardly extending arm 39, operating within an opening 40 formed through the base of the body frame 1. The inner end of the arm 39 has suitable pivotal connection with a swinging lever 41, which is fulcrumed intermediate its ends, as shown at 42, upon a bracket 43, having suitable connection with the body frame 1. The upper end of the swinging lever 41 is suitably pivotally connected with a horizontally swinging lever 44, as shown at 45. This lever 44 has pivotal connection intermediate its ends, as shown at 46, with a bracket 47, which is fast upon the body frame 1. The left end of the lever 44 is pivotally connected with an arm 50, as shown at 51. This arm carries a cylindrical sleeve 52, having an axial opening formed therethrough for loosely holding a U-shaped rod 53. The transverse ends of this U-shaped rod are slidably mounted through brackets 54 having rigid engagement with the carriage 2. The transverse ends of the U-shaped rod 53, have pivotal connections, as shown at 55, with fingers 56 carrying teeth 57 upon their lower sides. The teeth 57 engage teeth 58 formed upon disks 59, which are rigidly connected with the ends of the platen 3. The fingers 56 are pressed downwardly so that the teeth 57 engage the teeth 58, by means of leaf springs 60, suitably connected with said transverse ends, as shown at 61. Special attention is called to the fact that the arm 50 and its sleeve 52 does not interfere with the longitudinal movement of the U-shaped rod 53, which, as is obvious, must move longitudinally with the carriage 2.

Lugs 62 are formed upon the upper portion of the body frame, to limit the return movement of the carriage 2, and these lugs are provided with rubber buttons 63 to take up the shock when the carriage 2 is stopped by said lugs. It is to be understood that when the carriage 2 is moved a space the pinion 24 is rotated a cog, whereby said pinion 24 may be readily moved into mesh with the teeth of the gear 16, irrespective of the particular position assumed by the carriage. As clearly shown in Fig. 1, the shaft 27 carries a slight spring 27^a, one end of which is secured to the body frame, and the other end secured to the shaft 27. This spring tends to rotate pulley 35 in a direction opposite to that caused by the escapement movement of the carriage, whereby said strip 36 remains suitably tight and the gear 29 rotated a cog for each space movement of said carriage, as above stated.

In the operation of the machine, after the carriage 2 has completed its escapement movement, the operator presses the key 9 rearwardly to effect a corresponding movement of the operating rod 8. The movement of the rod 8 actuates the shifting lever 32, whereby the pinion 29 is first moved into mesh with the teeth 15, after which the tooth 14 releases the hollow gear 16. This gear is now rotated by the spring 22, causing the rotation of the pinion 29 and pulley 35. The flexible strip 36 is now wound upon the pulley 35, to return the carriage to its

starting position. The rearward longitudinal movement of the rod 8 also causes the swinging lever 41 to be actuated whereby the right end of the lever 44 is moved forwardly and the left end moved rearwardly. The rearward movement of the lever 44 is imparted to the arm 50, which moves the U-shaped rod 53, whereby the platen is rotated, as is necessary. After the carriage is thus returned to its starting position, the operating rod 8 is released, and the same returned to its most forward normal position by means of springs 13. This reverse movement of the rod 8 disengages the pinion 29 from the teeth 15, as clearly illustrated in Fig. 1. The teeth 57 now trip along the teeth 58 of the disks 59, and do not rotate the platen, when the rod 53 and arm 50 are moved forwardly.

I wish it understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that certain changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

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

1. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear for coöperating with said carriage, a driven gear, connecting means between said driven gear and said carriage, a shifting lever to move said driven gear into and out of engagement with said driving gear, and a device to move the shifting lever and carrying means to lock said driving gear against rotation.

2. The combination with the carriage of a typewriter, of a driven gear to coöperate therewith, connecting means between said gear and carriage, a driving gear to move the driven gear, a shifting lever to move the driven gear into and out of engagement with the driving gear, an operating rod to move the shifting lever, and means carried by said operating rod to lock the driving gear against rotation when the same is out of engagement with the driven gear.

3. The combination with the carriage of a typewriter, of a driven gear to coöperate therewith, connecting means between said driven gear and carriage, a driving gear to move the driven gear, a shifting lever to move the driven gear into and out of engagement with the driving gear, an operating rod to move the shifting lever and provided with means to lock the driving gear against rotation, and means to urge said operating lever in a direction to disengage the driven and driving gear.

4. The combination with the carriage of a typewriter and a platen carried thereby, of means to effect the return movement of said carriage, including a plurality of cooperating gears capable of having relative movement to engage and disengage each other, a shifting lever to effect this relative movement, a rod to move said shifting lever, and means actuated by said rod, to rotate the platen.

5. The combination with the carriage of a typewriter and a platen carried thereby, of means to effect the return movement of said carriage, including a plurality of cooperating gears capable of having relative movement to engage and disengage each other, means to effect said relative movement between said gears, and means to rotate the platen, said last named means having connection with the second named means to be actuated thereby.

6. The combination with the carriage of a typewriter and a platen carried thereby, of means to effect the return movement of said platen, including a plurality of cooperating gears capable of having relative movement to engage and disengage each other, a shifting lever to effect said relative movement, a rod to move said shifting lever, means connected with said rod to engage one of said gears for preventing the rotation thereof, and means actuated by said rod, to rotate the platen.

7. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear and operating rod arranged near diametrically opposite points of said driving gear, means connecting said operating rod and driven gear so that the driven gear is moved by said operating rod and in an opposite direction thereto, means connected with said operating rod to prevent the rotation of said driving gear, and means connecting said driven gear and carriage.

8. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear arranged above the driving gear to be moved into and out of engagement therewith, means connecting said driven gear and carriage, an operating rod movably mounted below said driving gear, means connected with said operating rod to prevent the rotation of said driving gear, and a shifting lever pivoted intermediate its ends and having connections with said driven gear and operating rod.

9. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear and operating rod arranged near diametrically opposite points of said driving gear, means connecting said operating lever and driven gear so that the driven gear is moved by said operating rod and in an opposite direction thereto, means to ro-

tate said platen having connection with said operating rod, means connected with said operating rod to prevent the rotation of said driving gear, and means connecting said driven gear and carriage.

10. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate therewith, a driven gear and operating rod arranged near diametrically opposite points of said driving gear, means connecting said operating rod and driven gear so that the driven gear is moved by said operating rod and in a direction opposite thereto, means to rotate said platen having connection with said operating rod, and means connecting said driven gear and carriage.

11. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear and operating rod arranged near diametrically opposite points of said driving gear, a shifting lever pivoted intermediate its ends and having connections with said driven gear and operating rod, means connected with said operating rod to prevent the rotation of said driving gear, and means connecting said driven gear and carriage.

12. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear arranged above the driving gear to be moved into and out of engagement therewith, an operating rod disposed below said driving gear, means connecting said driven gear and carriage, and a shifting lever pivoted intermediate its ends and having connections with said driven gear and operating rod.

13. The combination with the carriage of a typewriter and a platen carried thereby, of a driving gear to coöperate with said carriage, a driven gear and operating rod arranged near diametrically opposite points of said driving gear, a shifting lever pivoted intermediate its ends and having connections with said driven gear and operating rod, means connected with said operating rod to prevent the rotation of said driving gear, means for moving said operating rod in a direction to effect the disengagement of the driving and driven gears, and means connecting said driven gear and carriage.

14. The combination with the frame of a typewriter and a carriage movably mounted thereon, of a shaft rotatably mounted upon said frame, a flexible member connecting said shaft and carriage, an elastic member for rotating said shaft in a direction to tighten said flexible member, a gear splined upon said shaft, a second gear, and means to move the first named gear into and out of engagement with said second named gear.

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

LAYTON BROWN.

Witnesses:

FRANK L. ZIMMERMAN,

ETHEL SIBSON.