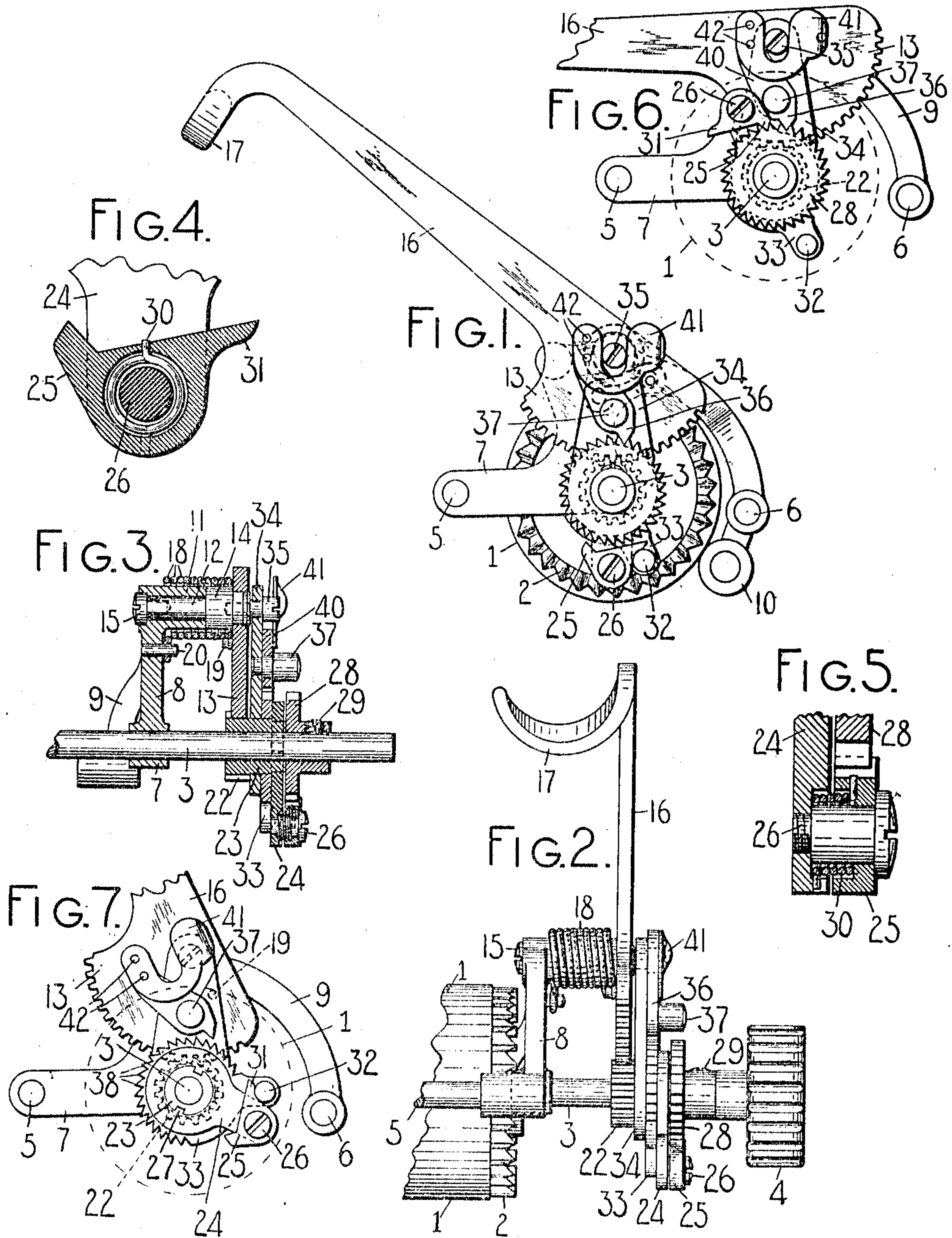


A. J. BRIGGS & H. C. FORD.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 24, 1908.

955,942.

Patented Apr. 26, 1910.



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THE SMITH PREMIER TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A COR-
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TYPE-WRITING MACHINE.

955,942.

Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed March 24, 1908. Serial No. 423,013.

To all whom it may concern:

Be it known that we, ARTHUR J. BRIGGS and HANNIBAL C. FORD, citizens of the United States, and residents of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Our invention relates to typewriting machines and more particularly to paper feed mechanism.

Our invention has for its principal object to provide an improved adjustable device for advancing the paper, when it is first inserted into the machine, with accuracy and rapidity to position for writing the first line on the sheet. The device is also useful wherever it is desired to feed the paper a considerable distance as from one printing position to another or to feed the paper out of the machine when the writing is complete.

To the above and other ends which will hereinafter appear, our invention consists in certain features of construction and combinations and arrangements of parts, all of which will be fully set forth hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a right hand end view of the platen and the platen frame of a Smith Premier typewriter with our improvements applied thereto, the parts being shown in normal position. Fig. 2, is a front view of the same. Fig. 3 is a vertical section of parts shown in Fig. 2. Figs. 4 and 5 are enlarged sections, taken on planes normal to each other, of a certain pawl and some of the connected parts. Fig. 6 is an end view showing the parts in operated position. Fig. 7, is a similar view but with parts removed and with other parts shown disconnected for the purpose of adjustment.

We have shown our invention applied to a Smith Premier typewriter but it will be evident that said invention is applicable or readily adaptable to various other styles of typewriting machines.

The Smith Premier machine has a roller platen 1, to the right-hand end of which is secured a line space wheel 2, with which cooperate a detent roller and a line space pawl, which parts, however, are not shown

in the present instance. The platen has a shaft 3 on which it is rigidly mounted, and at each of its ends said shaft is provided with a finger wheel 4. The shaft 3 is journaled in a platen frame which comprises two frame rods 5 and 6 in front and rear, respectively, of the platen and said frame rods are connected with end pieces 7, the right-hand one of which is shown in the drawings. Each of said end pieces 7 includes a forwardly directed arm to which the frame rod 5 is connected, an upwardly extended arm 8 (Fig. 3) and an arm 9 which curves backward and downward from the arm 8 and has the frame rod 6 connected with its lower end. These end pieces and the frame rods 5 and 6 are rigidly connected together to form a platen frame in which the platen shaft is journaled. A paper feed roller 10, diagrammatically shown in Fig. 1, is mounted on arms pivoted to the frame rod 6 and is pressed by spring means into contact with the platen.

Directly above the platen shaft 3 we form the end piece of the platen frame with a boss 11 (Fig. 3) in which is journaled a short shaft 12 having rigidly mounted on its right-hand end a segmental gear 13. The shaft 12 is formed with an enlarged part 14 (Fig. 3) which abuts against the right-hand end of the boss 11 and prevents endwise motion of the shaft in one direction, and endwise motion of said shaft in the other direction is prevented by the head of a screw 15 which is threaded into the left-hand end of the shaft. The segmental gear 13 is mounted on the reduced end of the shaft which is then riveted up as indicated in Fig. 3 to hold the gear sector in place. Said gear sector is formed with an extension 16 terminating in a handle 17 whereby the gear sector is operated. A spring 18, coiled about the boss 11 is connected at one end with a pin 19 on the sector 13 and at the other end with a pin 20 on the arm 8 of the platen frame, and said spring tends to move the arm 16 toward the back of the machine. The gear segment 13 meshes with a pinion 22 which is loosely mounted on the platen shaft 3. Said pinion has an elongated hub or sleeve 23, the right-hand end of which is reduced to form a shoulder and on said reduced end of said sleeve there is rigidly

mounted an arm 24 having a pawl 25 pivoted thereto on a pivot screw 26. As shown in Fig. 7 this arm 24 has small lugs 27 projecting into slots or notches in the sleeve 23 in order to insure that the arm have no rotary motion except with the sleeve. The pawl 25 is adapted to engage and operate a ratchet wheel 28 rigidly secured to the shaft 3 by a set screw 29 threaded through the hub of said ratchet wheel. In Fig. 7 the finger wheel 4 and the ratchet wheel 28 are removed in order better to show the construction of the parts to the left thereof.

Fig. 4 is a section through the pawl 25 on a vertical plane extending fore and aft of the machine, and Fig. 5 is a section through this pawl transversely of the machine. As shown in these enlarged views, the pawl is provided with a spring 30 which is seated in cavities formed in the adjacent faces of the pawl 25 and the arm 24 and coiled about the pivot screw 26, the spring being connected at one end with the pawl and at the other end with the arm. As shown in Fig. 5 the screw 26 is a shouldered and headed pivot screw, the reduced end of which is threaded into the arm 24. The spring 30 tends to press the pawl 25 into engagement with the ratchet wheel 28. The pawl is formed with a tail piece 31 which normally engages an adjustable stop, and throwout device 32, consisting of a pin or stud projecting toward the right from an adjustable device or plate 33 which is loosely mounted on the sleeve 23 inside the arm 24. Another plate 34 is loosely mounted on said sleeve 23 between the plate 33 and the teeth of the pinion 22 and this plate 34 is prevented from turning about the platen axis by a shouldered screw 35 which passes through a suitable hole in the plate 34 and is threaded into the end of the shaft 12 of the gear segment 13. The screw 35 passes loosely through the plate 34 and the construction is such that said plate does not interfere with the rotation either of the shaft 12 or of the pinion 22, but the plate itself cannot turn. A retaining dog 36 is pivoted to the plate 34 on a shouldered stud 37 which is riveted to the plate 34 as shown in Fig. 3, and the point of this dog engages a series of ratchet teeth 38 in the adjustable plate 33 to retain said adjustable plate in any position to which it may be adjusted. The dog 36 is formed with an upwardly extending tail 40 which normally rests against the side of the head of the screw 35 to limit the motion of the dog, as shown in Fig. 6. A U-shaped plate spring 41 is secured to this arm 40 by rivets 42 and the rear branch of this plate spring is normally snapped in behind the screw head 35 so as to prevent motion of the dog in either direction, but this detent may be sprung outward so as to allow the dog to be moved to the position shown in Fig. 7

where said dog is out of engagement with the ratchet teeth 38. When the parts are in this position the plate 33 may be turned about the sleeve 23 to any one of a large number of different positions, and it may be retained in any adjusted position by throwing the dog 36 back into engagement with the ratchet teeth, the detent 41 snapping in behind the screw head 35. The ratchet wheel 28 is formed with the same number of ratchet teeth as the line space wheel 2 and the ratchet teeth 38 on the plate 33 are spaced to correspond with those on the ratchet wheel 28 and said line space wheel.

The parts normally stand in the position shown in Fig. 1, the arm 16 being held up as far as it will go by the spring 18. The motion of the arm in this direction is limited by the stop 32 which arrests the pawl 25 and throws it out of engagement with the ratchet wheel 28 so that said pawl is normally out of engagement with the wheel, and does not interfere with the rotation of the platen in either direction. If the handle 17 be pulled forward and downward, the pinion 22 will be rotated toward the back of the machine, carrying the arm 24 and pawl 25 around in unison with the pinion. As soon as the tail 31 of the pawl 25 moves away from the stop 32, said pawl snaps into engagement with the ratchet 28 and carries said ratchet and the platen shaft and platen around in line space direction. This motion may continue until the pawl 25 strikes the head of the pivot stud 37 which is elongated as shown in Fig. 3 to form a stop for this pawl. The engagement of the pawl with this stop 37 jams the pawl into the escape-wheel and thus prevents overthrow of the platen and positively arrests the pawl, the handle 17 and the platen. When the handle is released the parts are restored to the position shown in Fig. 1 by the spring 18, the pawl 25 snapping idly over the ratchet teeth until said pawl is lifted out of engagement with said teeth by its tail 31 engaging the stop 32. It will be seen that the platen may thus be rotated for a considerable distance by a single motion of the handle 17 and that said rotation is in line space direction and that the extent of this rotation of the platen is exactly predetermined by the mechanism.

The extent of rotation imparted to the platen by the handle 17 may be regulated by adjusting the plate 33 in the manner which has been described. For example, this plate is shown in different adjustments in Figs. 1 and 7. When the plate is adjusted as shown in Fig. 7 the extent of rotation is obviously greater than when it is adjusted as shown in Fig. 1. As the spacing of the ratchet teeth 38 corresponds to that of the teeth of the line space wheel 2, the device may be set to turn the platen through a dis-

tance corresponding to any desired number of teeth of the line space wheel within the capacity of the device. The mechanism can if desired be set to feed the paper only a distance of one or two or three teeth of the line space wheel, so that said device is capable of use for ordinary line spacing.

This device is very useful in many relations, as, for example, where the machine is used for writing letters on letter-head paper. A sheet of such paper may be placed in position to be fed into the machine with its leading edge arrested by the feed roller 10, and the handle 17 may then be depressed with the result that the first writing line on the sheet of paper will be brought to the printing position at a single stroke and without care or especial attention on the part of the operator. The device is adjustable for different depths of letter-head by adjusting the plate 33. The device is also useful where the machine is employed in making out bills which have a uniform depth of letter-head. The device is also obviously useful in any sort of work where it is desired to impart a considerable extent of forward motion to the platen and to predetermine exactly the extent of such motion. When a letter has been written the paper may be fed out of the machine by either a single stroke of the handle 17 or, if necessary, by a quick succession of strokes of said handle, and the paper would thus be fed out of the machine much more quickly and easily than by manipulating the finger wheel 4.

Various changes may be made in the details of construction and arrangements without departing from our invention.

What we claim as new and desire to secure by Letters Patent is:—

1. In a typewriting machine, the combination of a rotary platen, a pinion normally disconnected from the platen, a hand operated rack meshing with said pinion, and means for connecting the platen with the pinion to cause the pinion to rotate the platen when the rack is operated.

2. In a typewriting machine, the combination of a rotary platen, a pinion normally disconnected from the platen, a hand operated rack meshing with said pinion, means for connecting the platen with the pinion to cause the platen to rotate with the pinion when the rack is operated, means for automatically returning said rack to normal position, and means for disconnecting said pinion from said shaft when said rack returns to normal position, so as to leave said shaft free to turn in either direction.

3. In a typewriting machine, the combination of a rotary platen, a pinion normally disconnected from the platen, a hand operated rack meshing with said pinion, means for connecting the platen with the pinion to cause the platen to be rotated by the pinion

when the rack is operated, and means for limiting the extent of motion of said rack and pinion.

4. In a typewriting machine, the combination of a rotary platen, a pinion normally disconnected from the platen, a hand operated rack meshing with said pinion, means for connecting the platen with the pinion to cause the platen to be rotated by the pinion when the rack is operated, and two relatively adjustable stops for arresting the motion of said rack and pinion in both directions.

5. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a hand operated rack meshing with said pinion, and means for automatically connecting the platen shaft with the pinion to cause the platen to be rotated by the pinion when the rack is operated.

6. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a hand operated rack meshing with said pinion, a toothed wheel fixed on the platen shaft, and means for operatively connecting the said pinion with said toothed wheel when the rack is operated.

7. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a hand operated rack meshing with said pinion, a toothed wheel fixed on the platen shaft, a pawl connected with said pinion, and means for moving said pawl into engagement with said toothed wheel when said rack is operated and for disconnecting said pawl from said toothed wheel at the end of the operation of said rack.

8. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a hand operated rack meshing with said pinion, a toothed wheel fixed on the shaft, a pawl connected with said pinion and spring pressed into engagement with said toothed wheel, and an arresting and disconnecting device for arresting said pinion at the end of its motion in one direction and disconnecting said pawl from said toothed wheel.

9. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a rack engaging said pinion, a handle for moving said rack in one direction, a spring for returning said rack, and means for causing said pinion to turn said platen when the rack is operated by said handle.

10. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a rack engaging said pinion, a handle for moving said rack in one direction, a spring for returning said rack, means for causing said pinion to turn said platen when the rack is operated by said handle, and means for freeing said platen

from said pinion when said handle is restored to normal position to leave said platen free to be turned in either direction independently of said pinion.

- 5 11. In a typewriting machine, the combination of a rotary platen, a platen frame, a pinion loose on the platen shaft, a segmental rack journaled on the platen frame and meshing with said pinion, a hand operated arm on said rack, a toothed wheel fixed to the platen shaft, a pawl connected with said pinion, and a stop adjustable about said platen shaft for arresting the pawl and disconnecting it from said toothed wheel.
- 15 12. In a typewriting machine, the combination of a rotary platen, a toothed wheel fixed on the platen shaft, a pinion loose on the platen shaft, a pawl connected with said pinion and adapted to engage said toothed wheel, a stationary device loosely mounted on one end of the hub of said pinion and carrying a retaining device, an adjustable member loosely mounted on the hub of said pinion and having teeth adapted to be engaged by said retaining device, a stop and disconnecting device for said pawl on said adjustable member, and means for rotating said pinion.
- 20 13. In a typewriting machine, the combination of a rotary platen, a platen frame, a toothed wheel fixed on the platen shaft, a pinion loose on the platen shaft, a pawl connected with said pinion and adapted to engage said toothed wheel, a gear journaled in the platen frame and meshing with said pinion, a stationary part loosely mounted on the hub of said pinion and on the axis of said gear, a retaining device mounted on said stationary part, an adjustable stop and disconnecting device for said pawl loosely mounted on the hub of said pinion and having teeth adapted to be engaged by said retaining device, and means for rotating said gear.
- 30 14. In a typewriting machine, the combination of a rotary platen, a platen frame, a toothed wheel fixed on the platen shaft, a pinion loose on the platen shaft, a pawl connected with said pinion and adapted to engage said toothed wheel, a gear journaled in the platen frame and meshing with said
- 35 40 45 50

pinion, a stationary part loosely mounted on the hub of said pinion and on the axis of said gear, a retaining device mounted on said stationary part, an adjustable stop and disconnecting device for said pawl loosely mounted on the hub of said pinion and having teeth adapted to be engaged by said retaining device, a stop for said pawl carried by said stationary part, and means for rotating said gear.

15. In a typewriting machine, the combination of a rotary platen, a platen frame, a toothed wheel fixed on the platen shaft, a pinion loose on the platen shaft, a pawl connected with said pinion and adapted to engage said toothed wheel, a gear journaled in the platen frame and meshing with said pinion, a stationary part loosely mounted on the hub of said pinion and on the axis of said gear, a retaining dog pivoted on said stationary part, a latch for holding said dog in operative position, an adjustable stop and disconnecting device for said pawl loosely mounted on the hub of said pinion and having teeth adapted to be engaged by said retaining dog, and means for rotating said gear.

16. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, means for rotating said pinion, means for connecting said platen with said pinion to cause the platen to be rotated by the pinion, and means comprising two cooperating stops for arresting such rotation of the platen.

17. In a typewriting machine, the combination of a rotary platen, a pinion loose on the platen shaft, a hand operated rack meshing with said pinion, means for connecting said platen with said pinion to cause the platen to be rotated by the pinion when the rack is operated, and means comprising two cooperating stops for arresting such rotation of the platen.

Signed at Syracuse, in the county of Onondaga, and State of New York, this 20th day of March A. D. 1908.

ARTHUR J. BRIGGS.
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Witnesses:

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E. L. SNYDER.