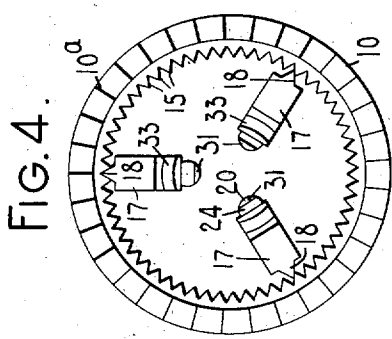
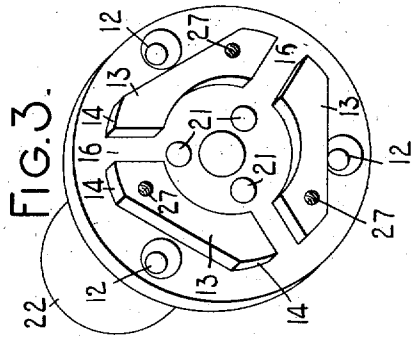
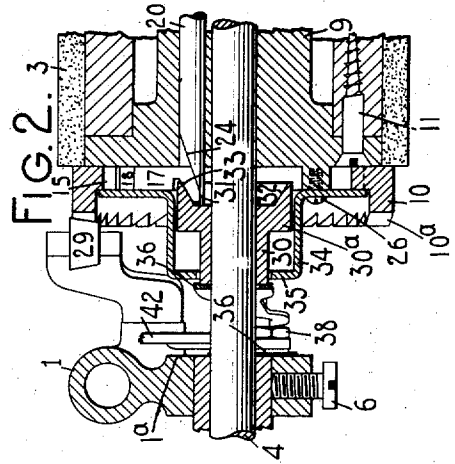
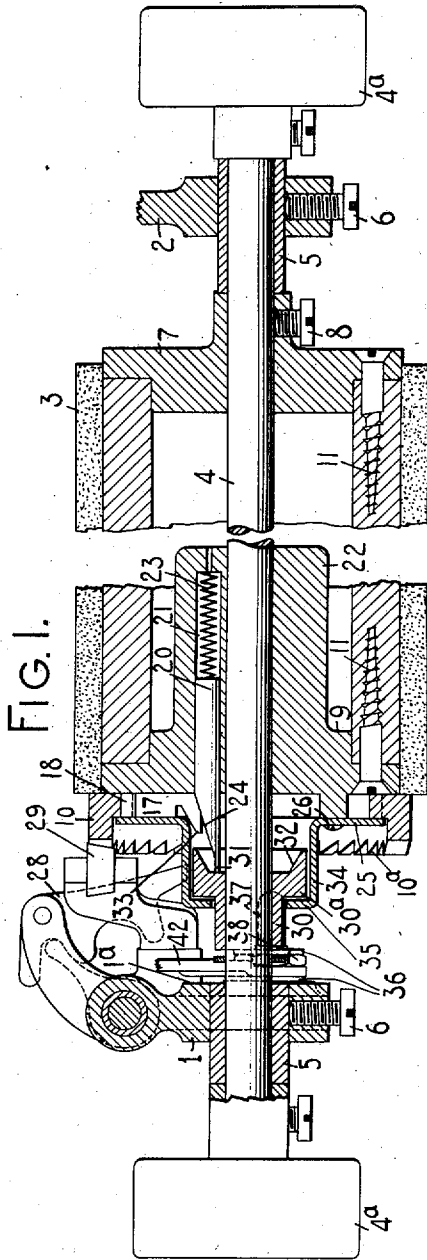


E. E. BARNEY.
TYPE WRITING MACHINE.
APPLICATION FILED MAR. 17, 1909.

954,912.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

E. M. Wells

R. H. Strother

INVENTOR:

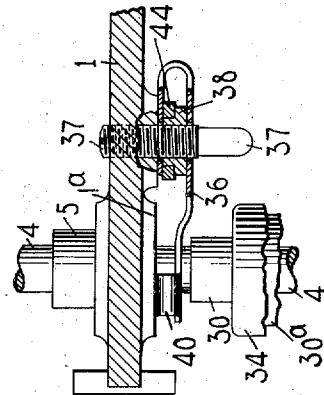
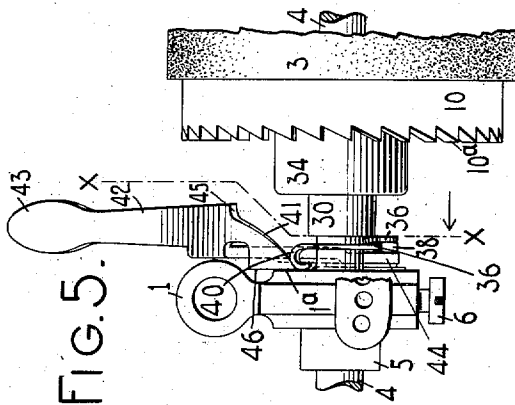
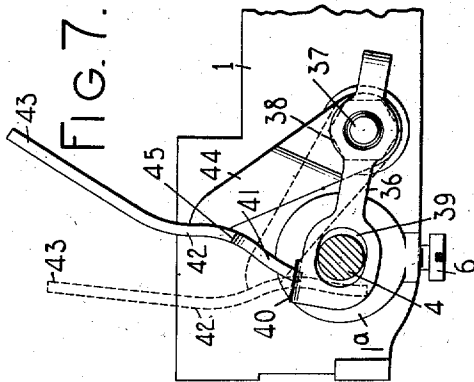
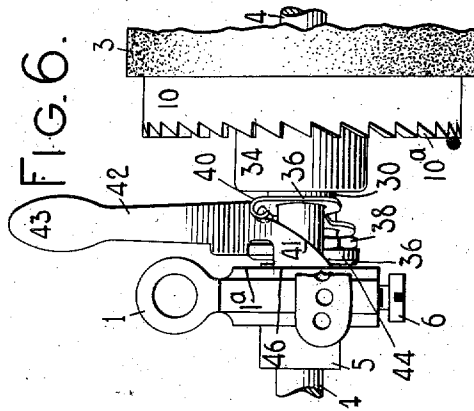
Edwin E. Barney

By Jacob F. Felt

HIS ATTORNEY

954,912.

2 SHEETS—SHEET 2.



WITNESSES:
E. M. Wells.
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UNITED STATES PATENT OFFICE.

EDWIN E. BARNEY, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-WRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

954,912.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed March 17, 1909. Serial No. 483,956.

To all whom it may concern:

Be it known that I, EDWIN E. BARNEY, a citizen of the United States, and resident 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.

My invention relates to typewriting machines and more particularly to fractional line spacing devices involving platen clutches, and the invention has for its principal object to provide improved means for operating platen clutches.

My invention consists in certain features of construction and combinations and arrangements of parts, all of which will be fully set forth herein and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal central section through the platen of a typewriting machine having my invention embodied therein, part of the carriage being also shown and parts being broken away, and the clutch shown in normal or clutching position. Fig. 2 is a similar view of the end of the platen on which the line space wheel is mounted and some of the connected parts, but showing the clutch in released position. Fig. 3 is an isometric view of one of the platen heads. Fig. 4 is a face view of the line space wheel and the dogs and wedges of the clutch. Figs. 5 and 6 are fragmentary front views showing the operating devices for the platen clutch, Fig. 5 showing the parts in normal or clutching position and Fig. 6 showing the parts in released position. Fig. 7 is a fragmentary view in section on the line $x-x$ of Fig. 5 and looking in the direction of the arrow at said line. In this figure the parts are shown in full lines in normal position and in broken lines in operated or releasing position. Fig. 8 is a fragmentary top view partly in irregular section and with parts broken away.

My invention is applicable or adaptable to various styles of typewriting machines and to various sorts of platen clutches, but I have here shown it applied to a Monarch typewriter and to a platen clutch like that shown in the British patent to Fell No. 28,219 of 1906. The platen clutch shown in said British patent, like most other platen clutches, is operated to release the platen

from the line space wheel by moving a part longitudinally of the platen axle. It is one of the purposes of the present invention to make certain improvements in devices for operating these clutches by a lever or other device that is mounted in the platen frame and situated in a more convenient position than these longitudinally movable parts and that moves in another direction and will be automatically retained in either of the positions to which it is set, thus leaving the hands of the operator free to turn the platen or to adjust the paper or to do whatever else may be necessary while the clutch is disconnected. Operating devices that have to be moved by hand longitudinally of the platen, have usually involved a divided platen axle or some modification of the bearings or supports of the platen, which tend to complicate the mechanism and to weaken important parts of said mechanism. In some forms of these platen clutches the platen knob or finger wheel itself is movable longitudinally; in others the platen shaft by means of the finger wheel. If the knob that has to be pushed is situated at the left-hand end of the platen, then, when said knob is operated, there is a liability to move the platen backward in letter space direction. One of the purposes of my invention is to operate the platen clutch by means not open to any of these several objections.

The carriage of the Monarch typewriter comprises two end pieces or brackets 1 and 2 which support the platen 3. Said platen is provided with a shaft 4 which is journaled in bearing bushings 5 which pass through suitable openings in the brackets 1 and 2 where they are rigidly secured by set screws 6. The platen is provided with a right-hand platen head 7 which is rigidly fixed to the shaft 4 by means of a set screw 8. In this machine the line space wheel is at the left-hand end of the platen and the left-hand platen head 9 has the line space wheel 10 mounted thereon. The platen heads are secured to the wooden core of the platen by screws 11 which pass through holes 12 in the platen heads. The shaft 4 is provided at its ends with the usual finger wheels 4^a. The left-hand face of the platen head 9 is formed with three projections 13 having bearing surfaces 14 on which the line space wheel bears in such fashion that when the clutch is released the line space

wheel and platen head are free to turn the one with relation to the other. The line space wheel has an internal flange in which internal V-shaped teeth 15 are formed and it is the points of these teeth that ride on the bearing surfaces 14. Three rectangular radial openings 16 between the projections 13, serve as guide-ways for dogs 17 which are mounted in said openings 16 with freedom to slide radially in and out. Each of these dogs has at its outer end a chisel or V-shaped tooth 18 adapted to enter the notches between the teeth 15 of the line space wheel. These dogs are normally pressed into engagement with the teeth 15 by means of wedges 20 which are seated in holes 21 formed longitudinally of the platen in an inward extension 22 of the platen head 9. The wedges 20 are pressed toward the left by coiled springs 23 compressed between the bottoms of the holes 21 and the ends of the wedges 20. Each of said wedges has an inclined or wedge face 24 which contacts with a similarly inclined face on the inner end of the corresponding dog 17. The spacing of the teeth 18 of the dogs and of the teeth 15 of the line space wheel, is such that in no relative positions of the platen and line space wheel can more than one of the teeth 18 be bottomed in one of the notches between the teeth 15. In Fig. 4 the parts are shown in such a position that one of said teeth 18 is pressed to the bottom of one of the notches. When the platen and line space wheel happen to occupy this relative position it will be noted that one of the other teeth 18 is pressed against one of the teeth 15 in such a way as to prevent relative motion of the line space wheel and platen in one direction and the third tooth 18 engages one of the teeth 15 in such a way as to prevent relative motion of these parts in the other direction. The parts are so designed that in any relative position of the line space wheel and platen at least one of the teeth 18 will prevent motion of the platen relatively to the line space wheel in one direction and at least one of said teeth will prevent relative motion of the parts in the other direction, so that said line space wheel and platen are locked together to turn in unison. The angle of the inclined part 24 of each of the wedges is such that pressure inward on the corresponding dog 17 will not cam the wedge toward the right, so that the dog is positively locked in its engaged position.

A retaining plate 25 is mounted on the platen head 9, being secured to the faces of the flanges or projections 14 by screws 26 threaded into screw-holes 27 in said flanges. This retaining plate closes the openings 16 so as to retain the dogs 17 in place in said openings and it also lies over the internally toothed flange of the line space wheel, thus

retaining said line space wheel in position. The line space wheel 10 may have crown ratchet teeth 10^a which are engaged by the line space pawl 28 and also by the usual detent roller 29.

In order to release the platen clutch, a sleeve 30 is slidably mounted on the shaft 4 to the left of the platen head 9 and this sleeve at its right-hand end is enlarged into a disk 30^a which is adapted to engage leftward prolongations 31 of the wedges 20 so that when the disk is moved toward the right it pushes all of said wedges toward the right and releases the dogs 17 from said wedges, leaving said dogs free to move inward toward the shaft 4 to a sufficient extent to release them from the teeth 15. The disk 30^a is formed with an internal coned surface 32 which, when said disk is moved toward the right, is adapted to engage inclined surfaces 33 formed on the toes of the dogs 17, the construction being such that the coned surface 32 cams the dogs 17 positively inward out of engagement with the teeth 15.

The retaining plate 25 is formed with a cup shaped part 34 having an inturned flange, 35. Said cup shaped part 34 receives the enlarged inner disk-like end of the sleeve 30 and said sleeve at its left-hand end is constructed and arranged to slide through the central opening in the inturned flange 35. The parts are normally held in the positions shown in Fig. 1 by the tension of the springs 23. In order to slide the sleeve 30 toward the right and thus release the clutch, said sleeve contacts at its left-hand end with a spring plate or arm 36, the form of which will be best understood by reference to Figs. 7 and 8. This spring is made U-shaped and at one end it is mounted on a screw 37 back of the platen axle, being clamped between the carriage bracket 1 and a nut 38 which is threaded on to said screw. In the present instance this screw 37 is rounded at its inner end and is used to jam the line space pawl 28 into the ratchet wheel at the end of the line spacing stroke of said pawl. The tension of the free end of the spring 36 is exerted to move the free end of said spring toward the left. The inner fold of said spring is perforated to surround the screw 37 and at its forward end said spring is also perforated at 39 to surround the platen shaft 4. At its extreme forward end the spring 36 is formed with a rounded part 40 which coöperates with a cam edge 41 formed on a lever 42 which lever has a handle part or finger 43. The lever 42 is made of sheet metal and has an arm 44 which is pivoted as shown in Figs. 7 and 8 on a round reduced part of the nut 38, said lever being held between the enlarged head of the nut on the one hand and the outer fold of the spring 36 on the other hand with freedom to rock about its pivot. The

lever 42 is normally held in the position shown in Fig. 5 by the tension of the spring 36 but when the lever is pulled toward the front of the machine it cams said spring 36 toward the right and said spring carries the sleeve 30 with it toward the right, thus releasing the clutch. I prefer not to have the cam 41 act directly on the sleeve 30 which sleeve rotates with the platen and I have therefore interposed between the cam and sleeve the forward end of the spring, which is a part mounted in the platen frame with freedom to move longitudinally of the platen, and which is held against turning with the platen. The upper part of the cam edge 41 terminates in a dwell and a rounded stop portion 45. The cam part of the lever has its left-hand edge 46 straight and this straight part of the lever contacts with the boss 1^a on the bracket 1 or with the end of the bushing 5 so that the lever is not cramped in its bearing on the nut 38. As the upper part of the cam edge 41 is a dwell, the lever 42 will remain in the position shown in Fig. 6 until it is pushed back by hand so that when the platen clutch is released it will remain in released position until restored to normal position by moving the handle 43 toward the rear of the machine.

The present invention is an improvement on the construction forming the subject-matter of the application of Jacob Felbel, filed March 1st, 1909, Serial No. 480,548. By pivoting the handle and cam back of or eccentric to the platen shaft I am enabled to give a longer throw to the cam for a given extent of motion of the free end of the handle than in the prior construction. This enables me to use a cam having a more gradual inclination than in said prior construction, with the result that the cam operates with less friction. Moreover, I have reduced the number of rubbing surfaces which also reduces the friction. The construction as a whole works with the application of much less power; and the handle, on its return stroke, snaps back when only lightly struck by the hand of the operator, thus saving time in restoring the clutch.

It will be noted that when the parts are in normal position the spring 36 is out of contact with the end of the sleeve 30. This allows a slight lost motion between the spring and the sleeve which gives the handle 43 an easy start. This lost motion also insures that the tension of the spring 36 shall never be exerted against that of the springs 23 when the clutch is in its normal or clutching position.

It will be seen that the means provided for operating the platen clutch are extremely simple and inexpensive to manufacture and that they are very convenient in

operation. It will, of course, be understood that the devices described may be readily applied or adapted to other forms of platen clutch than that shown in the drawings. It will also be understood that various changes may be made in the details of construction and arrangement without departing from my invention.

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

1. In a typewriting machine, the combination of a rotary platen, a line space wheel, a releasable clutch normally locking said line space wheel and platen to turn together, a handle pivoted to the platen frame at a distance from the platen axle and having its pivotal axis parallel to the axis of the platen so as to move in a plane transverse to the platen axis for releasing said clutch, and means intermediate said handle and said clutch for transmitting motion from said handle to said clutch.

2. In a typewriting machine, the combination of a rotary platen, a line space wheel for said platen, a releasable clutch for normally causing said platen and line space wheel to turn together, a handle arranged to be operated in a plane transverse to the platen axis, a part mounted on the platen frame for motion longitudinally of the platen and operated by said handle, and means operated by said part for moving a part of said clutch longitudinally of the platen in order to release said clutch.

3. In a typewriting machine, the combination of a rotary platen, a line space wheel for said platen, a releasable clutch for normally causing said platen and line space wheel to turn together, a handle arranged to be operated in a plane transverse to the platen axis, and a cam pivoted eccentrically of the platen axis and operated by said handle for moving a part of said clutch longitudinally of the platen in order to release said clutch.

4. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting said line space wheel and platen, a device mounted directly on the platen frame and free to move endwise of the platen but held against turning about the platen axis, means operated by said device for releasing said clutch, and a handle mounted in the platen frame for operating said device.

5. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting said line space wheel and platen, a device mounted directly on the platen frame and free to move endwise of the platen but held against turning about the platen axis, means operated by said device for releasing said clutch, and a handle mounted in the platen frame for operating said device, there being

lost motion between said clutch and said endwise movable device.

6. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting said line space wheel and platen, means for releasing said clutch comprising a part movable endwise of the platen, and means for operating said releasing means including a plate spring and a cam movable transversely of the platen and operating said spring.

7. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting said line space wheel and platen, means for releasing said clutch comprising a part movable endwise of the platen, and means for operating said releasing means including a plate spring and a cam movable transversely of the platen and operating said spring, the tension of said spring being exerted on said cam to hold said handle in normal position.

8. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting

said line space wheel and platen, a handle pivoted behind the platen shaft and having its pivotal axis parallel to the axis of the platen, a cam connected with said handle, and means operated by said cam for releasing said clutch.

9. In a typewriting machine, the combination of a platen, a line space wheel for said platen, a releasable clutch connecting said line space wheel and platen, a sleeve slidable longitudinally of the platen shaft for releasing said clutch, a plate-like part mounted directly on the platen frame and embracing said platen shaft and adapted to operate said sleeve, means preventing said plate-like part from turning with the platen, a handle mounted in the platen frame, and means operated by said handle to move said plate-like part longitudinally of the platen to release the clutch.

Signed at Syracuse, in the county of Onondaga and State of New York this 13th day of March A. D. 1909.

EDWIN E. BARNEY.

Witnesses:

G. B. BRAND,
W. C. HAY.