No. 791,549. PATENTED JUNE 6, 1905.

E. GROSBOIS.

TYPE WRITING MACHINE.

APPLICATION FILED MAY 2, 1903.

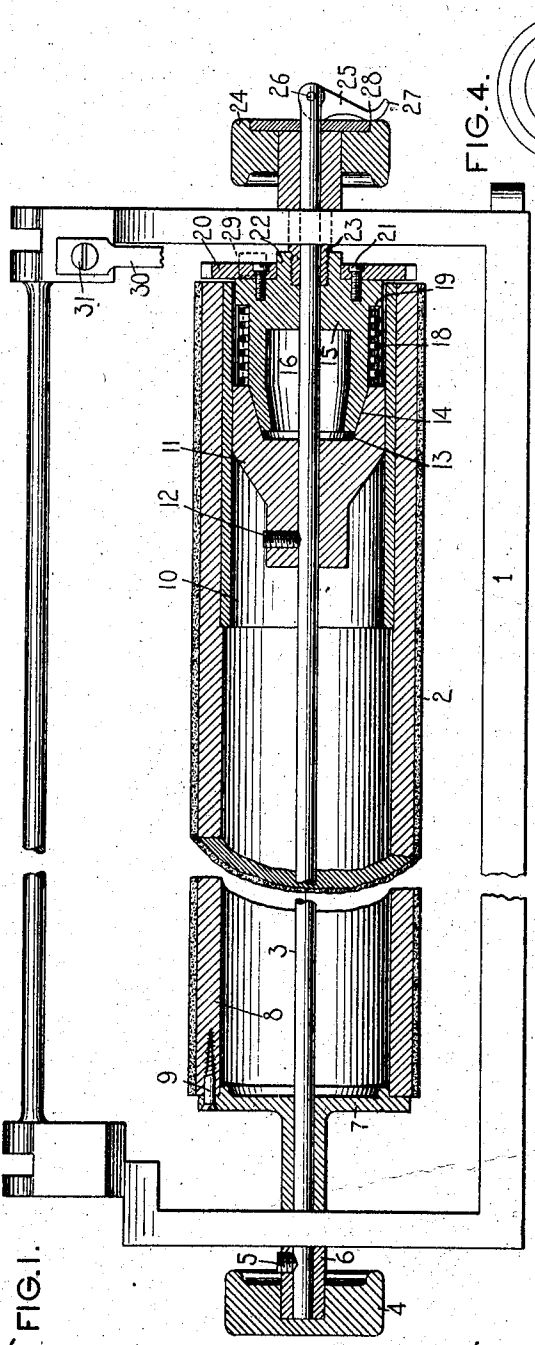


FIG. 1.

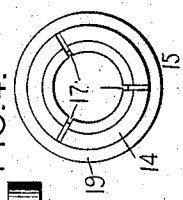


FIG. 4.

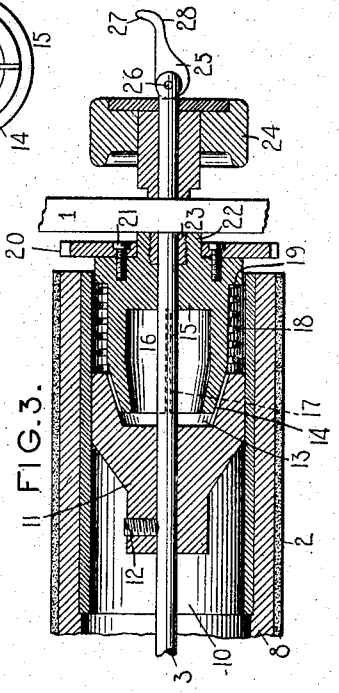


FIG. 3.

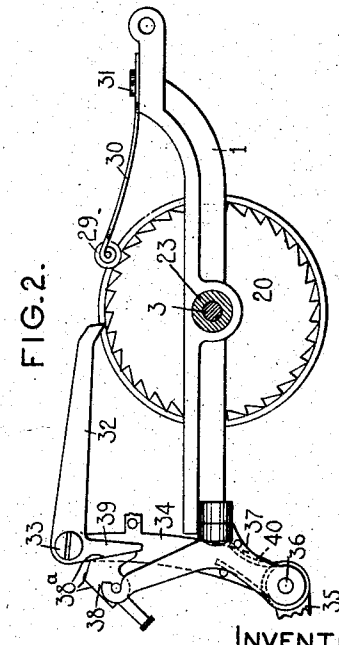


FIG. 2.

WITNESSES:

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No. 791,549. Patented June 6, 1905.

UNITED STATES PATENT OFFICE.

EMILE GROSBOIS, OF PARIS, FRANCE, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,549, dated June 6, 1905.

Application filed May 2, 1903. Serial No. 155,370.

To all whom it may concern:

Be it known that I, EMILE GROSBOIS, a citizen of France, and a resident of Paris, France, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to mechanism for connecting the platen to or disconnecting it from line-spacing mechanism at will to afford a regular or irregular feed or rotation of the platen, whereby either regular or fractional line-spacing may be effected; and the object of my invention is to provide simple, strong, and efficient mechanism of the character specified.

To the above and other ends, which will hereinafter appear, my invention consists in the novel features of construction, arrangements of parts, and combinations of devices, to be hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a plan view, with the platen and certain of its associated parts in section, of sufficient number of parts of a type-writing machine to illustrate my invention. Fig. 2 is a fragmentary detail end view of the same looking toward the right-hand end of the carriage. Fig. 3 is a fragmentary enlarged detail longitudinal sectional view taken through the right-hand end of the platen. Fig. 4 is a detail end view of one of the clutch members or sections.

I have shown my invention applied to a No. 6 Remington type-writing machine, though it should be understood that the invention may be embodied in other characters of writing-machines.

The platen-frame 1, which may be of any suitable construction, has mounted to revolve therein a platen 2, having a platen-shaft 3, that extends through bearings in the end bars of the platen-frame and is provided at its left-hand end with a hand-wheel 4, which may be secured to the shaft by a set-screw 5, received in a threaded opening in the collar 6 of the hand-wheel and bearing at its inner end against the platen-shaft, whereas the left-hand platen-head 7 is secured to the core 8 of the platen by screws 9 and is likewise secured to the platen-shaft, so that the left-hand finger-wheel, the platen-shaft, and the platen turn together. The right-hand end portion of the platen-core is preferably provided with a cylindrical bearing tube or sleeve 10, which may be made of metal and is seated in place in the core. Seated within the bearing-sleeve 10 is a clutch member 11, which is secured to the platen-shaft by a set-screw 12, that passes through a threaded opening in the clutch section or member and bears at its inner end upon the platen-shaft, so that the clutch-section is fixed with relation to the platen. This clutch member has an opening 13 in the outer end thereof, the sloping side walls of which provide a smooth friction engaging surface that coöperates with a corresponding friction-face 14 on the relatively movable conoidal clutch member 15, which is hollow throughout a portion of its length, as indicated at 16, and is slotted lengthwise, as indicated at 17 in Fig. 4, in order that a certain degree of resiliency may be afforded the engaging portion of the clutch-section in order that the parts may bind with greater tenacity when forced into engagement. It will be understood that both clutch-sections are preferably though not necessarily made of metal and that the engaging surfaces thereof may be ground in order to secure a firm frictional engagement between them, and from certain aspects of my invention these engaging surfaces may be provided with fine teeth. Surrounding the clutch-section 15 is a coil expansion-spring 18, that bears at one end against the clutch-section 11 and at its opposite end against a circular shoulder or flange 19, formed on the clutch-section 15 and which is fitted to slide within the bearing-sleeve 10.

On the outer side or end of the clutch-section 15 is secured a line-spacing ratchet-wheel 20, screws 21 securing the ratchet-wheel in place, and the central opening therein is received on a collar 22, that extends outwardly

from the clutch member 15, thus rigidly connecting the line-spacing ratchet-wheel to the clutch-section 15 and supporting it in place thereon. The collar 22 is internally threaded for the reception of a screw-threaded stem 23, that extends through an end bar of the platen-frame and is rigidly connected to a finger-wheel 24.

The platen-shaft 3 extends loosely through a central opening in the clutch member 15 and through the stem 23 and finger-wheel 24, and the outer end of the shaft, which extends beyond the finger-wheel 24, is bifurcated for the reception of a cam 25, which is pivoted to the shaft at 26 and is provided with a finger-piece 27, the edge 28 of which constitutes an abutment that is adapted to bear against the outer face of the finger-wheel, and thus limit the movement of the cam in one direction, as indicated in Fig. 1.

Coöperating with the teeth of the ratchet-wheel is the usual detent-roller 29, pivoted in the outer end of a spring 30, which is secured by the screw 31 to the platen-frame. A line-space feed-pawl 32 likewise coöperates with the teeth of the line-space ratchet-wheel 20 in order to effect a regular line-spacing movement of the platen. This line-space feed-pawl may be of any suitable construction, and in the present instance is shown pivoted at 33 upon the upright arm 34 of a hand-lever 35, which is pivoted at 36 to a forwardly-extending bracket-arm 37, extending from the platen-frame. The three contact-faces 38ª on a controlling-piece 38 coöperate with a depending arm 39 of the pawl in order to afford different extents of line-space feed movement of the platen, the extent of feed movement depending on which of the three faces of the controlling-piece 38 is in position to coöperate with the depending arm or finger 39 of the line-spacing pawl. A spring 40 restores the hand-lever 35 and the parts connected thereto in the normal positions after a line-space movement has been effected.

When the parts are in the positions represented in Fig. 1, the cam 25 will maintain the line-spacing ratchet-wheel and the clutch-section 15 against the tension of the spring 18 and in the position shown, and contact will be maintained between the engaging surfaces of the clutches, and the ratchet-wheel, the hand-wheel, line-spacing ratchet-wheel, and platen will be locked to rotate together. Should, however, the operator desire to provide a fractional line-space of the platen or to move a portion of the paper to the printing-line which cannot be attained with the aid of the ordinary line-spacing mechanism, it is merely necessary to move the cam-piece 25 to the position represented in Fig. 3, when the tension of the spring 18 will force the clutch member 15, together with the line-spacing ratchet-wheel 20, to slide along the platen-shaft to the position indicated in said figure, and the clutch-sections will be disengaged and the platen may be rotated to the desired extent through the left-hand finger-wheel 4, the line-spacing ratchet-wheel at this time remaining at rest and under pressure of the spring-detent 29.

It will be seen that the structure is such that both clutch-sections are centered on or are concentric with the axis on which the platen revolves and that the so-called "movable" clutch-section 15 moves longitudinally of the platen to connect the line-spacing ratchet-wheel to or disconnect it from the platen and that the device not only provides means for affording fractional line-spacing, but that it likewise distributes the wear over the entire face of the platen and not merely on fixed lines, as is the case where the ordinary line-spacing mechanism alone is employed.

It will be understood that the construction embodying my invention may by the mere movement of the cam 25 maintain the platen either connected to or disconnected from the ordinary line-spacing wheel for an indefinite period and that I have provided a simple, strong, cheap, and efficient structure for affording either a fractional or ordinary line-space movement of the platen at will and one in which the parts are not liable to become deranged or broken.

Various changes in detail construction may be made without departing from the spirit of my invention.

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

1. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a clutch-section connected to the line-spacing ratchet-wheel and movable therewith longitudinally of the platen, a second clutch-section fixed against movement to the platen, and hand-operated means for maintaining an engagement or disengagement of said clutch-sections as may be desired, by a mere setting of said means.

2. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a friction clutch member which is movable longitudinally of the platen and to which said line-spacing ratchet-wheel is secured, a co-operating friction clutch member secured against movement to the platen, a spring which tends to disconnect said clutch-sections, and hand-operated means for maintaining the clutch-sections in engagement by a mere setting of said hand-operated means.

3. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a friction clutch member which is movable longitudinally of the platen and to which said line-spacing ratchet-wheel is secured, a co-operating friction clutch member connected to the platen, a spring which tends to disconnect said clutch-sections, and means for indefinitely maintaining said movable clutch

member either engaged or disengaged one from the other as may be desired by a mere setting of said means.

4. In a type-writing machine, the combination of a platen, a platen-shaft, a clutch-section contained within the platen and fixed thereto, a coöperating relatively movable clutch-section contained within the platen and movable on the platen-shaft and longitudinally of the platen, a line-spacing wheel connected to the movable clutch-section, and means for moving the movable clutch-section and maintaining it in either the engaged or disengaged position as may be desired by a mere setting of said means.

5. In a type-writing machine, the combination of a platen, a platen-shaft to which the platen is secured, a clutch-section fixed to the platen-shaft, a coöperating relatively movable clutch-section movable on the platen-shaft in the direction of its length, a line-spacing wheel connected to the movable clutch-section, and means connected to the platen-shaft for moving the movable clutch-section.

6. In a type-writing machine, the combination of a platen, a platen-shaft to which the platen is secured, a finger-wheel secured to one end of the shaft and a finger-wheel at the other end which is adapted to slide thereon, a clutch member which is secured to the platen, and a relatively movable clutch-section and a line-spacing wheel connected to said movable finger-wheel.

7. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a platen-shaft to which the platen is secured, a finger-wheel secured to one end of the shaft, a finger-wheel at the other end of the shaft which is adapted to slide thereon, a clutch member which is secured to the platen, a relatively movable clutch-section connected to said movable finger-wheel, a spring for moving the movable clutch-section and the parts connected thereto in one direction, and hand-operated means connected to the platen-shaft and coöperating with the movable finger-wheel to move it and the parts connected thereto in an opposite direction.

8. In a type-writing machine, the combination of a platen, a clutch-section secured thereto, a coöperating clutch-section which is adapted to move longitudinally of the platen, and a hand-actuated cam that is connected to a part that is fixed to the platen, said cam being adapted to move said movable clutch-section longitudinally of the platen and to maintain said movable clutch-section in the position to which it is moved.

9. In a type-writing machine, the combination of a platen, a clutch-section secured thereto, a coöperating clutch-section which is adapted to move longitudinally of the platen, a spring interposed between said clutch-sections and which tends to disengage them, and a hand-actuated cam that is pivoted to a part that is fixed to the platen, said cam being adapted to move the movable clutch-section longitudinally of the platen against the tension of said spring and to maintain the movable clutch-section in the engaging position.

10. In a type-writing machine, the combination of a platen, a line-spacing wheel, a platen-shaft to which said platen is secured, a clutch-section fixed to the platen, a relatively movable clutch-section that slides on said shaft, and a hand-actuated cam connected to the shaft and affording a movement of the movable clutch-section.

11. In a type-writing machine, the combination of a platen, a platen-shaft, a finger-wheel secured to one end of said shaft, a finger-wheel at the other end thereof which is adapted to slide thereon longitudinally of the platen, a clutch-section secured to the platen, a coöperating relatively movable clutch-section which is adapted to slide on the platen-shaft and which is connected to said movable finger-wheel, a line-spacing wheel connected to said movable clutch-section, and a cam pivoted to the platen-shaft and bearing on said relatively movable finger-wheel to afford an engagement or disengagement of the clutch members.

12. In a type-writing machine, the combination of a platen, a platen-shaft, a finger-wheel secured to one end of said shaft, a finger-wheel at the other end thereof which is adapted to slide thereon longitudinally of the platen, a clutch-section secured to the platen-shaft, a coöperating relatively movable clutch-section which is adapted to slide on the platen-shaft and which is connected to said movable finger-wheel, a spring interposed between said clutch-sections and tending to maintain them disengaged, a line-spacing wheel secured to and carried by said movable clutch-section, and a cam pivoted to the platen-shaft and bearing on said relatively movable finger-wheel, to afford and maintain an engagement or disengagement of the clutch members.

13. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a conoidal clutch member to which the line-spacing ratchet-wheel is secured and which is movable longitudinally of the platen, a companion clutch-section that is secured to the platen, and means for affording a longitudinal movement of the said conoidal clutch-section and for maintaining it at either limit of its movement.

14. In a type-writing machine, the combination of a platen, a line-spacing ratchet-wheel, a slitted conoidal clutch member, a co-operating clutch member, one of said clutch members being connected to the line-spacing ratchet-wheel and the other to the platen, and means for affording an engagement and disengagement of said clutch members and for holding them either engaged or disengaged as may be desired.

15. In a type-writing machine, the combi-

nation of a platen, a platen-shaft, a line-spacing wheel, coöperating clutch members, one connected to the platen and the other centered and sliding on the platen-shaft, and one conoidal in form and the other recessed to receive the conoidal portion thereof, and means for affording a relative movement of said clutch-sections one to the other and for holding them either engaged or disengaged as may be desired.

16. The combination of a platen, a platen-shaft to which the platen is secured, a finger-wheel secured to one end of the platen-shaft, a finger-wheel loosely supported at the opposite end of the shaft and beyond which the shaft extends, a line-spacing wheel, a clutch-section secured to said line-spacing wheel, a coöperating clutch-section connected to the platen, connections between one of said clutch-sections and the loosely-mounted finger-wheel, and means connected to the shaft and bearing upon said loosely-mounted finger-wheel to afford a movement thereof to engage or disengage the clutch-sections.

17. The combination of a platen, a platen-shaft to which the platen is secured, a finger-wheel secured to one end of the platen-shaft, a finger-wheel loosely supported at the opposite end of the shaft, and adapted to move longitudinally thereon and beyond which the shaft extends, a line-spacing wheel, a clutch-section secured to said line-spacing wheel, a coöperating clutch-section connected to the platen, one of the clutch-sections being conoidal in form and the other recessed to receive it, a spring interposed between said clutch-sections, connections between one of said clutch-sections and the loosely-mounted finger-wheel, and a cam connected to the shaft and bearing upon said loosely-mounted finger-wheel to afford a movement thereof, to effect an engagement or disengagement of the clutch-sections.

18. In a type-writing machine, the combination of a platen, a platen-shaft secured thereto, a finger-wheel secured to one end of the platen-shaft, a finger-wheel loosely mounted and longitudinally movable on the other end of the platen-shaft and beyond which the platen-shaft extends, a conoidal friction clutch-section secured to and movable with said loosely-mounted finger-wheel, a line-spacing ratchet-wheel secured to and carried by said clutch-section, a coöperating clutch-section which is secured to the platen-shaft and is recessed to receive the conoidal clutch-section, an expansion-spring interposed between said clutch-sections, and a hand-operated cam pivoted to the platen-shaft beyond the movable finger-wheel to move it and the clutch-section connected thereto against the tension of said spring.

19. In a type-writing machine, the combination of a platen, an axle, a cone provided on said axle, a line-space ratchet-wheel provided with a coöperating cone, means for causing frictional engagement of the cones, and a spring tending to separate said cones.

Signed this 15th day of April, A. D. 1903.

EMILE GROSBOIS.

Witnesses:
JOHN BAKER,
AUGUSTUS E. INGRAM.