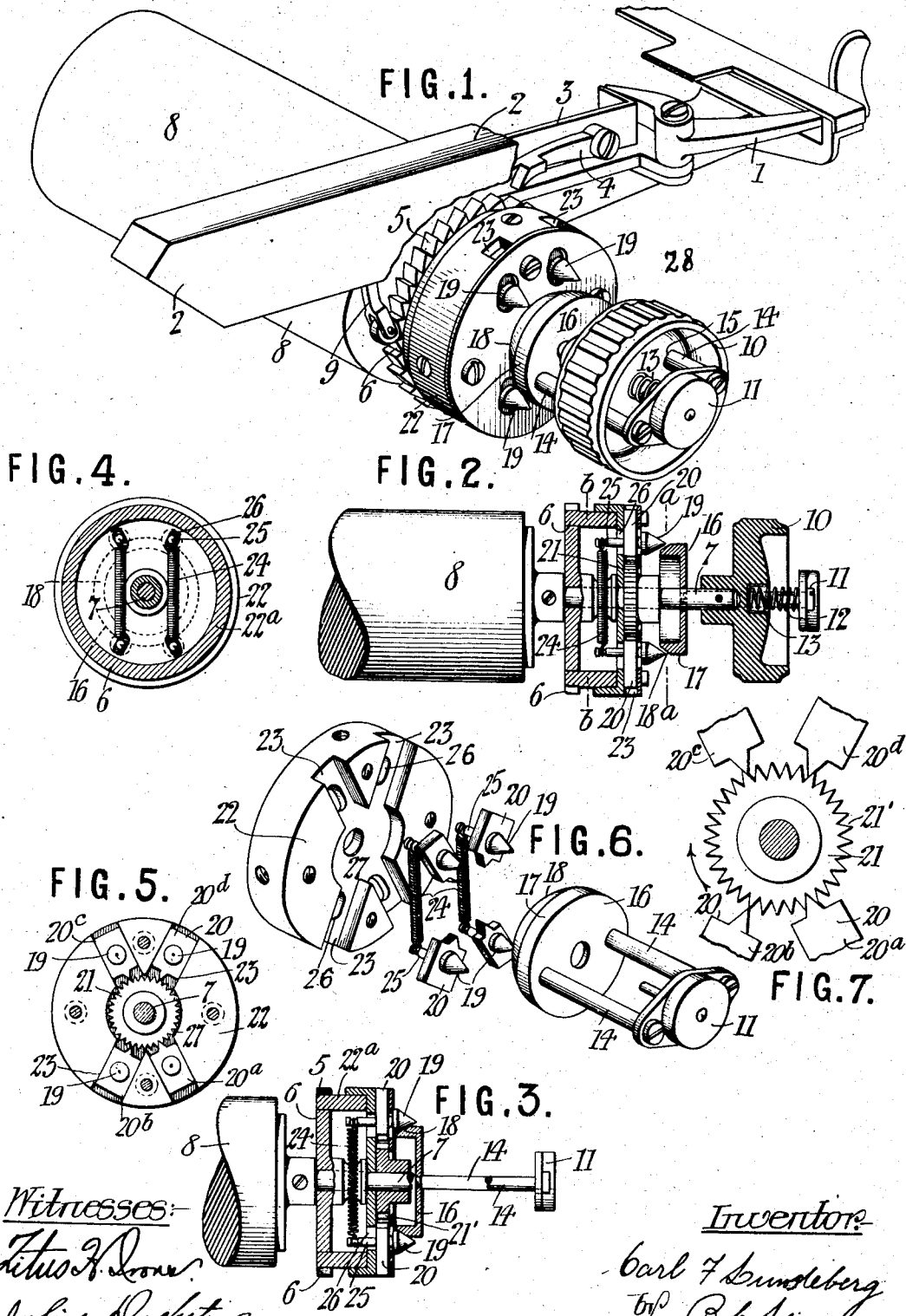


C. F. LUNDEBERG.
TYPE WRITING MACHINE.
APPLICATION FILED MAY 28, 1912.

1,062,019.

Patented May 20, 1913.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

1,062,019.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed May 28, 1912. Serial No. 700,158.

To all whom it may concern:

Be it known that I, CARL F. LUNDEBERG, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to typewriting machines, and more particularly to line-spacing mechanisms wherein the platen may be released or unclutched from the line-space wheel, and adjusted relatively thereto so as to move the paper any desired fraction of a full line-space.

The principal object of the present invention is to provide between the platen and line-space wheel, a releasable connection, which is simple in construction, inexpensive, neat in appearance, and readily applicable to existing types of machines.

The line-space wheel is loose and has attached thereto a head having dogs slidable in ways formed therein. These dogs have wedge shaped teeth engaging the teeth of a wheel connected to the platen and situated in a recess in the head. On one side the dogs have pins projecting therefrom through slots in the head, the pins of opposite dogs being connected to each other by springs holding the dogs in engagement with the toothed wheel. On the opposite side the dogs have conical projections which are engaged by a disk having a beveled rim, to throw the dogs out of contact with the toothed wheel so as to permit adjustment of the platen relative to the line-space wheel.

A cover plate is fastened to the head and incloses the dogs and toothed wheel.

Other features and advantages will hereinafter appear.

In the accompanying drawings, Figure 1 is a perspective view of the line-spacing mechanism of an Underwood writing machine with the present invention applied thereto. Fig. 2 is a sectional elevation illustrating the parts of the connection or coupling in engagement. Fig. 3 is a sectional elevation partly broken away, illustrating the parts of the connection or coupling out of engagement. Fig. 4 is a section taken along line *b-b* of Fig. 2. Fig. 5 is a section taken along line *a-a* of Fig. 2. Fig. 6 is a detail perspective view showing parts of the coupling detached from each other.

Fig. 7 is a diagrammatic view illustrating the spacing of the dogs relative to the teeth of the wheel.

The usual line-space operating lever 1 is mounted on the carriage 2 of a typewriting machine and actuates a bar 3 carrying a pawl 4 engaging the teeth 5 of line-space wheel 6 connected to the platen axle 7, upon which is fixed the platen 8. Detent 9, engaging the teeth of the line-space wheel, holds the latter in adjusted line-spacing position. All of this mechanism is found in the usual type of Underwood writing machine.

The line-space wheel is loose upon the platen axle 7 and is connected to and disconnected from the axle as follows: Projecting outward from the platen turning knob 10 is a finger-piece 11 held outwardly by a spring 12 seated in a recess 13 formed in the knob. Connected to this finger-piece is a pair of rods 14 passing freely through apertures 15 formed in the knob. At their inner ends, these rods are connected to a disk 16 slidably mounted on platen shaft 7 and formed with a flange or rim 17 having a beveled edge 18 adapted to engage a plurality of conical pins or projections 19 extending from dogs 20. The latter have wedge shaped teeth engaging the correspondingly shaped teeth 21' of a wheel 21 secured to the platen axle.

Normally the dogs 20 are held in engagement with toothed wheel 21 by springs hereinafter to be described. When finger-piece 11 is pressed inward by the operator against the tension of spring 12, the disk 16 is slid along the shaft bringing the beveled face 18 into engagement with the conical projections 19, and disengaging the dogs from the teeth of the wheel. These dogs 20 are slidably mounted in radial ways 23 formed in a head 22 secured to a rim 22^a extending from the line-space wheel, and are normally held in engagement with the toothed wheel 21 by springs 24 attached to pins 25 projecting inwardly from the dogs through slots 26 formed in head 22 at the bottom of the ways. These pins 25 extend within the rim 22^a, which, together with the plate 22 and line-space wheel 6, forms a casing completely inclosing the pins and the springs 24. The ends of the latter are connected to the pins of opposite dogs drawing them toward each other into engagement with the toothed

wheel 21. The latter is seated in a recess 27 formed in the head 22 in continuation with the ways 23, and together with the dogs, is covered by a cover plate 28 secured to the head.

Referring to Fig. 7, illustrating the spacing of the dogs relatively to the teeth of the wheel, dog 20^a is illustrated as fully seated, dog 20^b is one half of a tooth space from seating position, while dogs 20^c and 20^d respectively engage a forward and a rear face of a dog, considering forward as the direction indicated by the arrow. In any position of adjustment of the toothed wheel, one dog engages a forward and another dog a rear face of a tooth, thus clamping the toothed wheel 21 securely against rotation relative to the line-space wheel.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, a revoluble platen, a line-space wheel loose on the platen axle having a rim extending therefrom, a head attached to said rim, dogs mounted in radial ways in said head, said dogs having pins projecting within said rim, springs engaging said pins, and a toothed wheel connected to said platen and engaged by said dogs, said toothed wheel being situated in a recess in said head.
2. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a head secured to said wheel, said head having radial ways formed therein, and a central recess in continuation with said ways, a toothed wheel connected to the axle and situated within said recess, and a plurality of dogs slidably mounted in said ways and movable radially inward into engagement with said toothed wheel.
3. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a head secured to said wheel, said head having radial ways formed therein, and a central recess in continuation with said ways, a toothed wheel connected to the axle and situated within said recess, a plurality of dogs slidably mounted in said ways and movable radially inward to engage said toothed wheel, projections extending outwardly from said dogs, and a member having a beveled edge slidably mounted on the platen axle and adapted to engage said projections and move them radially outward to released position.
4. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a rim secured to said wheel, a head secured to said rim, a plurality of dogs mounted on said head, a toothed wheel secured to the axle and engaged by the dogs, projections extending from said dogs within said rim,

springs fastened to the projections of opposite dogs to hold them in engagement with the toothed wheel, projections extending outwardly from said dogs, and a disk having a beveled edge slidably mounted on the platen axle and adapted to engage said outwardly extending projections to force the dogs out of engagement with the wheel.

5. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a rim secured to said wheel, a head secured to said rim, a plurality of dogs mounted on said head, a toothed wheel secured to the axle and engaged by the dogs, springs to hold the dogs in engagement with the toothed wheel, conical projections extending outwardly from said dogs, and a disk having a beveled edge slidably mounted on the platen axle and adapted to engage said outwardly extending conical projections, to force the dogs out of engagement with the wheel.

6. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a head secured to said wheel, said head having radial ways formed therein and a central recess in continuation with said ways, the opposite ways being substantially in longitudinal alinement and extending completely across the face of the head, a toothed wheel connected to the axle and situated within said recess, and dogs slidably mounted in said ways engaging said toothed wheel.

7. In a typewriting machine, a platen axle, a line-space wheel loose on said axle, a head secured to said wheel, said head having radial ways formed therein and a central recess in continuation with said ways, a toothed wheel connected to the axle and situated within said recess, a plurality of dogs slidably mounted in said ways and movable radially inward into engagement with said toothed wheel, and a cover plate secured to said head to inclose the dogs and toothed wheel.

8. In a typewriting machine, the combination of a platen and its axle, a line-space wheel loose on the axle, a head on said axle, a flange connecting said head and line-space wheel, said head being formed in its outer face with radial recesses or ways and a central recess, a toothed wheel seated in said central recess and secured to the platen axle, sliding dogs mounted in said ways and adapted to cooperate with said toothed wheel, said dogs having projections extending through openings in said head, springs connected to the said extensions and located in the space between said head and the line-space wheel, and means for operating said dogs in opposition to said springs.

9. The combination with a platen and a line-space wheel, of a connecting clutch comprising a notched wheel, a series of dogs movable independently of one another to engage said notched wheel to lock the line-

space wheel to the platen, a disk having radial grooves in which the dogs are slidable, and means on the side of the disk opposite the said grooves to move said dogs to effective positions; said dogs having cams projected through slots in the disk, whereby they may be operated; and a finger piece having a part to engage all of said cams to cam the dogs in a manner to release the platen.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."