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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITING MACHINE.

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To all whom it may concern:

Be it known that we, EDWARD BURNS and  
GEORGE H. HORTON, both citizens of the  
United States, and residing in the city of  
Hartford, county of Hartford, and State of  
Connecticut, have invented certain new and  
useful Improvements in Type-Writing Ma-  
chines, of which the following is a specifica-  
tion.

This invention relates to devices for re-  
leasably connecting the platen to the line-  
space wheel of a typewriting machine, to  
permit the platen to be rotated independ-  
ently of the line-space wheel.

The principal object of this invention, is  
to provide, at a low cost, a simple and du-  
rable device of this character readily appli-  
cable to existing machines.

In the form of the invention illustrated  
in the drawings, the line-space wheel, which  
is loose upon the platen axle, is provided  
with a friction ring or drum. A number of  
dogs bite the inner periphery of the drum  
to connect the line-space wheel to the platen.

The dogs are set by a finger-wheel which is  
loosely mounted on the platen axle, to slide  
therealong, and incloses the dogs, and is in-  
ternally tapered or cone-shaped to exert a  
wedging action on the dogs, to cause them  
to turn and bite the friction ring. The  
finger wheel, which is also revoluble on the  
platen axle, has projections which bear  
against helical wedge or cam surfaces  
formed on the face of a collar fixed on the  
platen axle, so that when the finger-wheel is  
turned it is caused to slide along the axle to  
act on the dogs.

In the accompanying drawings, Figure 1  
is a view of the platen and platen frame of  
an Underwood front strike writing ma-  
chine, with the present improvements ap-  
plied thereto. Fig. 2 is a view partly in  
section and partly in outside elevation of  
the improved device showing the position of  
the several parts when the line-space wheel  
is released from the platen. Fig. 3 is a  
view similar to Fig. 2, but showing the posi-  
tion of the several parts when the line-space  
wheel is actively connected to the platen.  
Figs. 4 and 5 show perspective views of  
parts of the invention.

The usual cylindrical platen 1 is fixed to  
an axle 2, whereby it is journaled in a platen  
frame 3, said axle 2 having fixed upon its  
ends the usual hand wheels 4 for rotating

the platen. Loose upon the platen axle 2,  
outside of the platen frame 3, is a toothed  
line-space wheel 5, usually engaged by a  
spring detent 6. Fixed to, or formed on,  
the line-space wheel 5, is a friction ring or  
drum 7, forming part of the clutching mech-  
anism. A supporting disk 8 is fixed on the  
platen axle 2 within said drum 7, and car-  
ries a plurality of equally spaced horizontal  
dogs or levers 9 (preferably three) ful-  
crumed in notches 9<sup>a</sup> formed on its circum-  
ference, to bite the inner periphery of the  
drum 7, for connecting the line-space wheel  
to the platen.

The dogs 9 are operated by a special fin-  
ger-wheel 10, which is loosely mounted on  
the platen axle 2, and constructed in the  
form of a drum inclosing the long arms of  
the dogs 9, and also capping the drum 7.  
Part of the length of the finger-wheel 10 is  
internally tapered or cone-shaped, as shown  
at 11, Figs. 2 and 3, to enable the wheel by  
an axial movement to depress or force in-  
wardly the ends 12 of the dogs, to cause the  
jaws 13 to bite the inner periphery of the  
friction ring 7, as shown in Fig. 3.

For effecting its axial movement, the fin-  
ger-wheel 10 has projections 14, formed on  
its outer end, which bear against helical  
wedges or cam surfaces 15, formed on the  
inner end of a hub 16 of hand wheel 4, fixed  
on the platen axle 2, so that when the finger-  
wheel 10 is revolved in one direction, it is  
caused by said cams 15 to travel along the  
platen axle 2, until the tapered or cone-  
shaped portion 11 sets the dogs 9.

When the devices are in the locked posi-  
tions, the projections 14, on the finger-wheel  
10 may rest, without any tendency to slip,  
upon flats or dwells 17, formed at the ter-  
minations of the wedge or cam-shaped sur-  
faces 15 on the hub 16, thus preventing any  
accidental backward movement of the finger-  
wheel 10. A stop 18 is provided to limit the  
locking movement of the finger wheel 10.

Having thus described my invention, I  
claim:

1. In a typewriting machine, the combina-  
tion with a platen and an axle therefor, of a  
line-space wheel, a friction ring or drum  
loosely mounted on the platen axle, a disk  
or plate fixed on the platen axle, a plurality  
of dogs or levers fulcrumed at intervals on  
the circumference of the disk and lying  
along parallel to the platen axle, and manu-



ally operable means to cause said dogs to bite the inner periphery of said drum, to connect the line-space wheel to the platen.

2. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel, a friction ring or drum loosely mounted on the platen axle, a disk or plate fixed on the platen axle, a plurality of dogs or levers fulcrumed at intervals on the circumference of the disk and lying along parallel to the platen axle, and manually operable means to cause said dogs to bite the inner periphery of said drum, to connect the line-space wheel to the platen; said manually operable means including an axially movable finger-wheel loosely revoluble on the platen axle and constructed in the form of a drum inclosing the dogs and internally coned to vibrate the dogs.

3. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel, a friction ring or drum loosely mounted on the platen axle, a disk or plate fixed on the platen axle, a plurality of dogs or levers fulcrumed at intervals on the circumference of the disk and lying along parallel to the platen axle, and manually operable means to cause said dogs to bite the inner periphery of said drum, to connect the line-space wheel to the platen; said manually operable means including an axially movable finger-wheel loosely revoluble on the platen axle and constructed in the form of a drum inclosing the dogs and internally coned to vibrate the dogs; a collar or hub being fixed on the platen axle, and having its face formed with a helical wedge or cam surface to be engaged by a projection formed on the finger-wheel, to cause the latter, when revolved, to move along the platen axle.

4. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel, a friction ring or drum loosely mounted on the platen axle, a disk or plate fixed on the platen axle, a plurality of dogs or levers fulcrumed at intervals on the circumference of the disk and lying along parallel to the platen axle, and manually operable means to cause said dogs to bite the inner periphery of said drum, to connect the line-space wheel to the platen; said manually operable means including an axially movable finger wheel loosely revoluble on the platen axle and constructed in the form of a drum inclosing the dogs and internally coned to vibrate the dogs; a collar or hub being fixed on the platen axle, and having its face formed with a helical wedge or cam surface to be engaged by a projection formed on the finger-wheel, to cause the latter, when revolved, to move along the platen axle, means being also provided to prevent accidental releasing or backward movement of the finger-wheel when the device is in the locked position.

5. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel, a friction ring or drum loosely mounted on the platen axle, a disk or plate fixed on the platen axle, a plurality of dogs or levers fulcrumed at intervals on the circumference of the disk and lying along parallel to the platen axle, and manually operable means to cause said dogs to bite the inner periphery of said drum, to connect the line-space wheel to the platen; said manually operable means including an axially movable finger-wheel loosely revoluble on the platen axle and constructed in the form of a drum inclosing the dogs and internally coned to vibrate the dogs; a collar or hub being fixed on the platen axle, and having its face formed with a helical wedge or cam surface to be engaged by a projection formed on the finger-wheel, to cause the latter, when revolved, to move along the platen axle, means being also provided to prevent accidental releasing or backward movement of the finger-wheel when the device is in the locked position, consisting of a flat or dwell formed at the termination of the helical wedge or cam surface on the collar or hub, on which said projection bears without tendency to slip.

6. In a typewriting machine, the combination with a platen and a line-space wheel revoluble relatively to the platen, of a friction ring or drum upon the line-space wheel, a dog to engage said friction ring, a finger wheel which is both revoluble and movable axially of the line-space wheel, an internal cone being provided on said finger wheel, to engage said dog, and means to give said finger-wheel an axial movement during its revolution to cause the dog to bite the friction ring.

7. In a typewriting machine, the combination with a platen and a line-space wheel revoluble relatively to the platen, of a friction ring or drum upon the line-space wheel, a dog to engage said friction ring, and a device which is movable axially of the line-space wheel, an internal cone being provided on said device to engage said dog and by an axial movement to cause the dog to bite the friction ring.

8. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel loose upon the axle, a friction ring or drum provided upon the line-space wheel, a dog having a support upon the axle, a finger-wheel loose upon the axle for movement around and along the same, said finger-wheel having an internal shoulder to engage said dog, and means to cause said finger-wheel to slide along the axle during its revolution thereon; said finger-wheel having an internal shoulder to engage the dog, and one of said shoulder and dog elements being inclined to the other,



to cause the sliding movement of the finger wheel to effect a biting action of the dog upon the friction ring.

9. In a typewriting machine, the combination with a platen and a line-space wheel revoluble relatively to the platen and having a friction ring or drum, of a loose finger wheel revoluble independently of the line-space wheel and platen, means to cause said finger-wheel to move axially of the line-space wheel when the finger-wheel is revolved, and means to enable said finger-wheel by its axial movement to lock the line-space wheel to the platen.

10. In a typewriting machine, the combination with a platen and a line-space wheel

revoluble relatively to the platen and having a friction ring or drum, of a loose finger-wheel revoluble independently of the line-space wheel and platen, means to cause said finger-wheel to move axially of the line-space wheel when the finger-wheel is revolved, and means to enable said finger-wheel by its axial movement to lock the line-space wheel to the platen; means being also provided to enable said finger wheel to lock itself against accidental backward or releasing movement.

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Witnesses:

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