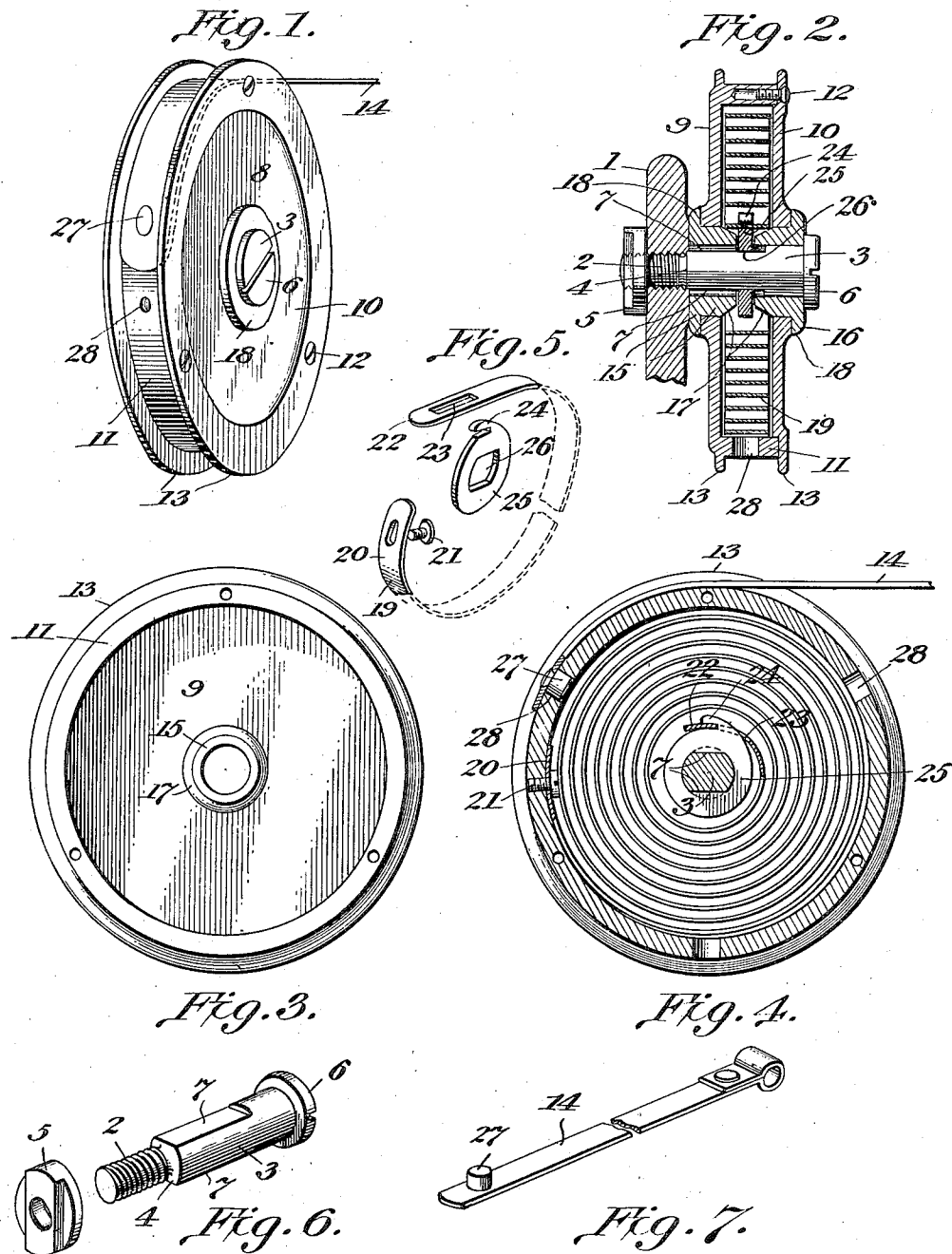


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POWER BARREL FOR TYPE WRITING MACHINES.
APPLICATION FILED FEB. 6, 1911.

1,182,261.

Patented May 9, 1916.



WITNESSES.

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POWER-BARREL FOR TYPE-WRITING MACHINES.

1,182,261.

Specification of Letters Patent.

Patented May 9, 1916.

Application filed February 6, 1911. Serial No. 606,932.

To all whom it may concern:

Be it known that I, HARRY A. FOOTHORAP, a citizen of the United States of America, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Power-Barrels for Type-Writing Machines, of which the following is a specification.

10 This invention relates to power barrels for type-writers and similar machines in which a carriage is propelled by a spring drum.

Heretofore power barrels and drums of the character specified have merely comprised a casing rotating on a fixed spindle and propelled by a spring connected at its opposite ends to the barrel and spindle and tending to rotate the barrel which is connected to one end of a flexible tape the opposite end of which is connected to the carriage. The strain imposed by the power barrel upon the spindle has been sufficient to create considerable friction, with the result that the barrel has speedily become useless by reason of the enlargement of the openings in its side walls through which the spindle passes. It has also been common to attach the inner end of the spring to the spindle by means of a screw or the like and the end of the tape to the periphery or rim of the barrel by crimping the tape and passing the crimped portion through a slot in the rim. Objections have been raised to both of these latter features, and the primary objects of the present invention are therefore three-fold, as follows: 1. To provide a power barrel with removable wear portions or bushings capable of resisting wear for a considerable period and which when ultimately worn can be replaced readily and at low cost. 2. To provide a simple and efficient means of attaching the end of the motor spring to the spindle whereby the spring may be retained without employment of screws or the like and in a manner to facilitate the assembling and repair of the drum. 3. To provide simple and efficient means for detachably and adjustably connecting the end of the tape to the periphery of the drum.

In the accompanying drawings—Figure 1 is a perspective view of a power barrel or drum constructed in accordance with my invention. Fig. 2 is a sectional view thereof.

Fig. 3 is a side elevation of the inner barrel section and bushing. Fig. 4 is a sectional view taken at right angles to the line of section of Fig. 2. Fig. 5 is a perspective view of the ends of the motor spring and the attaching devices therefor. Fig. 6 is a detail perspective view of the spindle and nut, and Fig. 7 is a detail perspective view of the spring band with the middle portion thereof broken out.

1 indicates a portion of the frame of a typewriter, as for instance the well known Elliott-Fisher machine, upon which a carriage, not shown, is mounted and propelled by the power barrel or spring drum to be described. Through the illustrated portion of the frame 1 is screwed the threaded reduced end 2 of a spindle 3 having a shoulder 4 which is drawn against one side of the frame 1 by a nut 5 screwed upon the inner end of the spindle. At its outer end the spindle 3 is formed with a head 6 and is provided with diametrically opposite flattened portions 7 which extend from the shoulder 4 to points somewhat removed from the head 6.

Mounted to rotate on the spindle 3 between the head 6 and the frame 1 is a power barrel or spring drum 8 comprising inner and outer disk-shaped plates or sections 9 and 10, the former having extended therefrom an annular flange 11 which constitutes the rim or periphery of the drum and to which is screwed as by screws 12 the outer plate or section 10. The barrel is provided with peripheral guide flanges 13 one of which is formed on each of the sections or plates 9 or 10 to guide the carriage tape 14 as the latter is wound upon the barrel in a manner to be described. The plates or barrel sections 9 and 10 are preferably die castings and are formed with axial openings into which are forced hardened steel bushings or bushing sections 15 and 16 preferably having tapered inner ends 17 to facilitate their introduction and annular abutment flanges 18 which abut against the outer sides of the plates 9 and 10.

Within the power barrel thus formed is wound a motor spring 19 having one end 20 secured to the inner face of the rim 11 as by a screw 21 and having its opposite or inner end 22 provided with a slot or opening 23 designed to engage a hook 24 formed on a hook plate 25. The hook plate 25 has the form of a small metal disk with the hook

24 projecting from the periphery thereof and provided with an opening 26 substantially corresponding in form to the flattened portion of the spindle 3. When slipped to its place on the spindle the hook plate 25 is accommodated between the inner ends of the bushings 15 and 16 and is thereby accurately centered between the inner and outer walls of the barrel so as to retain the motor spring in properly centered position and out of frictional contact with the adjacent walls of the barrel or casing.

To effect the attachment of the carriage propelling tape 14 to the barrel, said tape is provided at or adjacent to its extremity with an attaching stud 27 extending at right angles to the tape and designed to be fitted into any one of a series of radial openings or sockets 28 formed in the rim or peripheral wall 11 of the barrel.

It will now be observed that in the event of wear the barrel can be quickly removed from the machine by unscrewing the nut 5 and withdrawing the spindle and thereafter the worn section or sections of the bushing may be replaced. Similarly, if access to the spring is desired, it can be quickly obtained by removing the barrel in the manner specified and withdrawing the screws 12 to release the outer plate of the barrel or casing. If it is desired to increase or decrease the tension on the tape this may be done by simply withdrawing the stud 27 from the barrel, then turning the latter in the desired direction until the tension of the motor spring is secured, after which the stud may be slipped into the adjacent opening or socket 28 to securely attach the tape to the barrel without the liability of continual breakage which is occasioned by the usual crimping of the tape to effect its attachment.

It will be seen from the foregoing that I have produced a simple, efficient and economical form of power barrel which is easy of assemblage and repair, but while the illustrated embodiment of the invention appears at this time to be preferable, I reserve the right to effect such modifications as may come properly within the scope of the protection prayed.

What I claim is:—

1. In combination with a spindle, a power barrel comprising separable side sections, bushings removably secured in the side sections, means engaging the bushings to prevent end-wise movement thereof on the spindle, a spring located within the barrel and secured at one end thereto, and means located between the inner ends of the bushings for detachably securing the other end to the spindle.

2. The combination with a drum, of a spring within the drum tending to rotate the same in one direction, a tape adapted to be

wound upon the drum by the rotation thereof, under the impulse of the spring, and freely withdrawable interfitting means for detachably connecting the end of the tape and the periphery of the drum at any one of a series of points extending around the periphery of the drum, whereby the tension on the tape may be readily adjusted by detaching the end of the tape from the drum, rotating the drum in either direction to regulate the tension of the spring, and thereafter connecting the end of the tape and the drum by the interfitting means, either at the same point of the drum or at one of the other points at which provision is made for the connection.

3. The combination with a fixed spindle having a flattened portion, of a power barrel rotatable on the spindle, a hook plate engaging the flattened portion of the spindle, and a spring having one end in engagement with the hook plate and its opposite end secured to the power barrel.

4. The combination with a fixed spindle having a flattened portion and a head, of a power barrel comprising separable side sections, a bushing section axially secured in each side section, a hook plate carried by the flattened portion of the spindle and retained between the bushing sections, and a spring engaging the hook plate at one end and connected to the power barrel at its opposite end.

5. The combination with a spring drum having a series of openings extending around its periphery, of a flexible tape having a stud adapted to be removably received by any one of said openings.

6. The combination with a fixed spindle, of a power barrel rotatable thereon, a spring inclosed by the power barrel and having connection with the spindle and barrel, and a flexible tape having a stud, said power barrel having a series of radially disposed openings extended around the periphery and adapted to receive the stud.

7. The combination with a fixed spindle having a flattened portion, of a power barrel comprising separable side sections, a spring inclosed by the power barrel and connected thereto at one end, and a plate fitted upon the flattened portion of the spindle and engaging the other end of the spring.

8. The combination with a drum having a series of radial openings extending inwardly from its periphery, of a spring within the drum tending to rotate the drum in one direction, a tape adapted to be wound upon the drum by the rotation thereof under the impulse of the spring, and a stud carried by the tape and freely insertible in any one of the radial openings to secure the tape to the drum and freely withdrawable from said opening, whereby the tension on the tape may be readily adjusted by withdrawing the

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stud thereof from an opening in the drum, rotating the drum in either direction to regulate the tension of the spring, and thereafter inserting the stud in an opening to
5 again attach the tape to the drum.

9. The combination with a spindle, of a power barrel comprising separable side sections, a bushing section axially secured in each side section to rotate on the spindle, a
10 spring secured at one end to the barrel and a member for securing the other end of the spring to the spindle, said member being loosely mounted on the spindle and retained in place by the bushing sections.

15 10. The combination with a spindle hav-

ing a flattened portion, of a power barrel, bushing sections axially secured in the power barrel and rotatable on the spindle, a plate mounted on the flattened portion of the spindle and retained in place by the bushing
20 sections and a spring having one end secured to the barrel and its opposite end detachably connected to the plate.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY A. FOOTHORAP.

Witnesses:

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