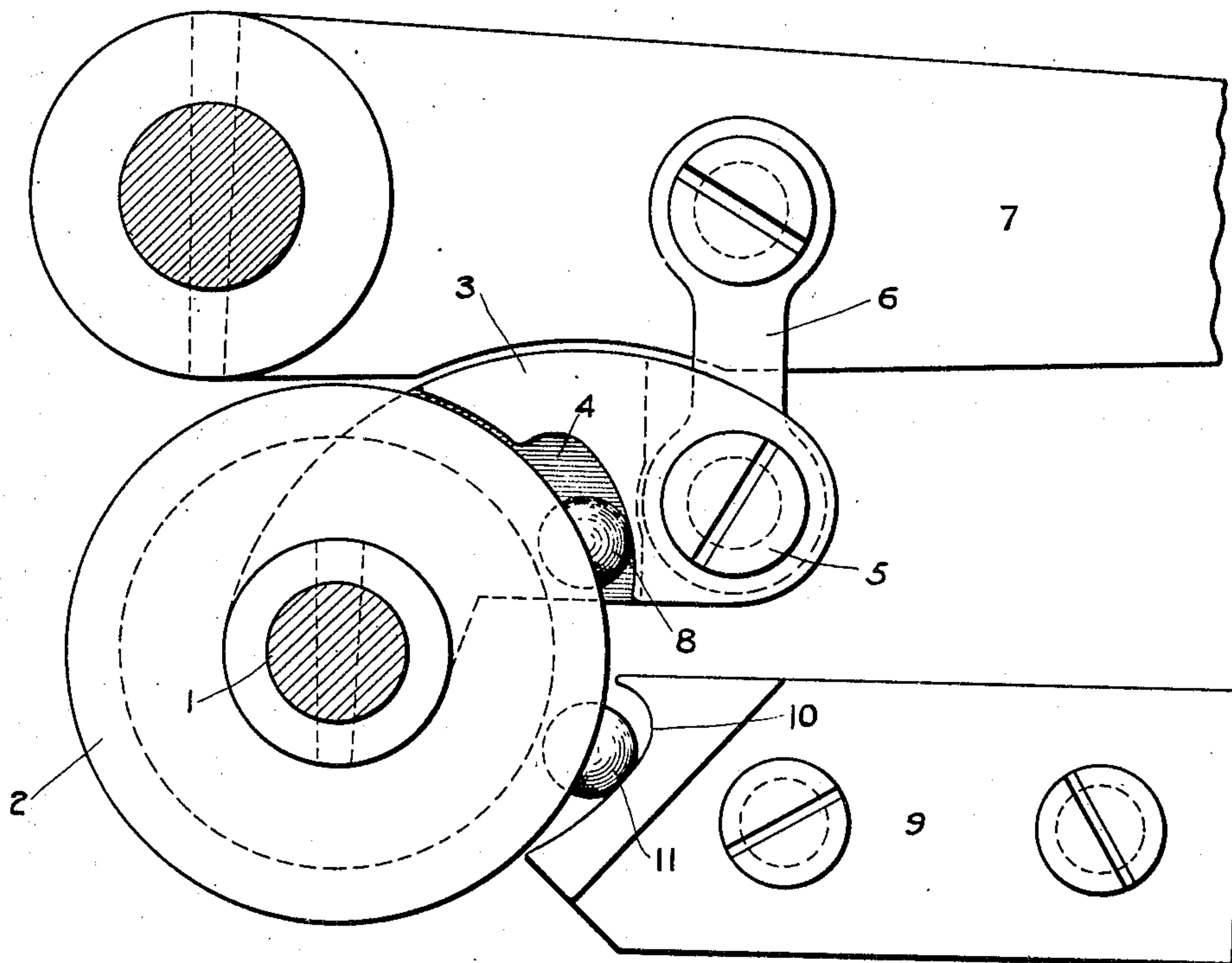
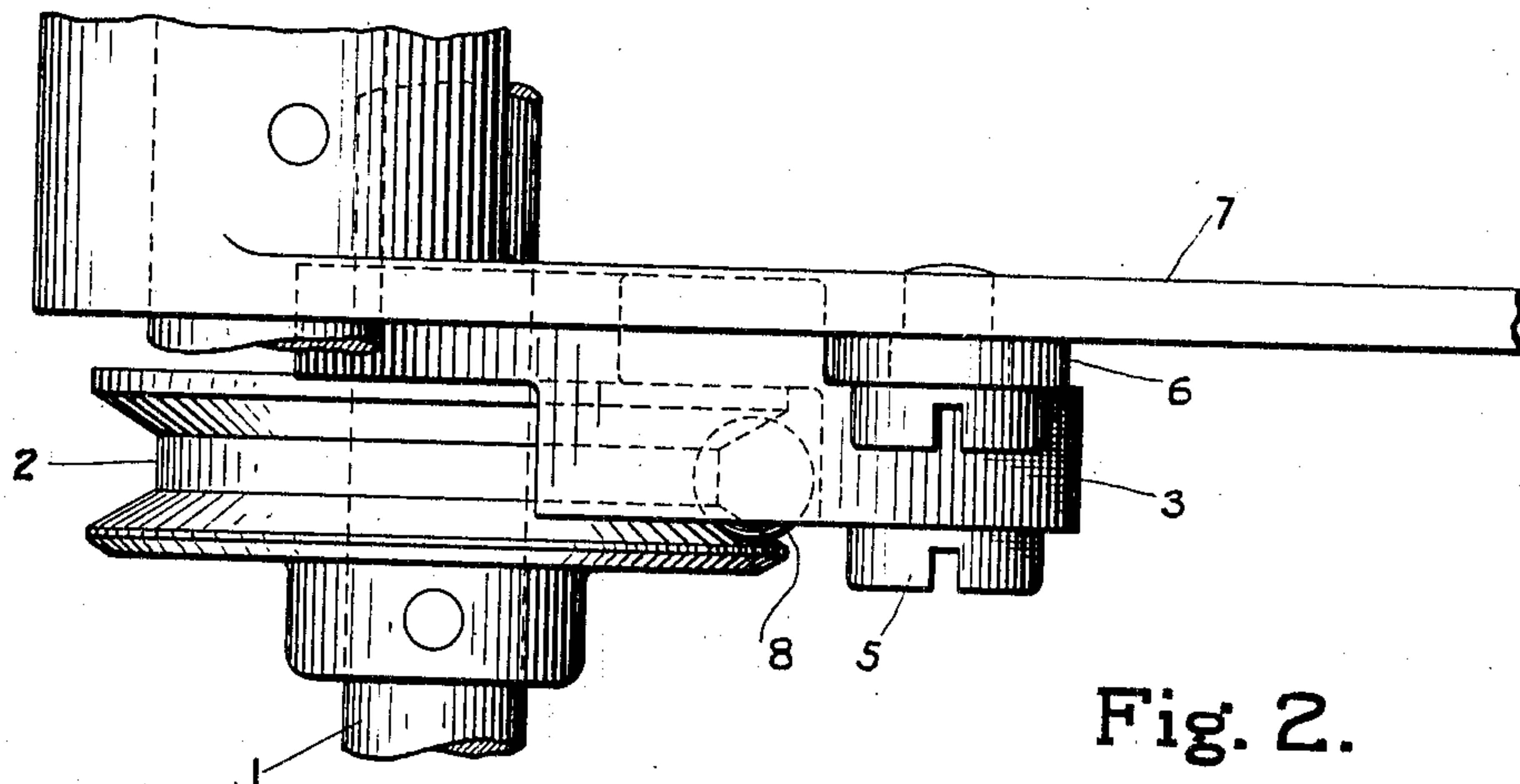


No. 871,373.

PATENTED NOV. 19, 1907.

C. W. SPONSEL.  
RIBBON FEEDING MECHANISM FOR TYPE WRITERS.  
APPLICATION FILED AUG. 18, 1905.



WITNESSES:  
*J. P. de Ruyter*  
*C. Wilson*

INVENTOR  
*C. W. Sponse*  
BY  
*Wayfield & Dues*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

CHARLES W. SPONSEL, OF HARTFORD, CONNECTICUT, ASSIGNOR TO PARKER MACHINE COMPANY, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

## RIBBON-FEEDING MECHANISM FOR TYPE-WRITERS.

No. 871,373.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed August 18, 1905. Serial No. 274,652.

*To all whom it may concern:*

Be it known that I, CHARLES W. SPONSEL, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Ribbon-Feeding Mechanism for Type-Writers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to typewriting machines and the like and although capable of use in many relations and in different types of machines is especially adapted for use in those known as "silent" typewriters and has for one of its objects to provide feeding means for the ribbon.

Another object is to provide a ribbon-feeding device adapted to operate silently. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in features of construction, combination of elements and arrangement of parts which will be exemplified in the mechanism hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is illustrated one of the several possible embodiments of my invention, Figure 1 is an elevation partly in section of the ribbon feeding mechanism, some of the parts being broken away. Fig. 2 is a plan view of the same partly in section.

Similar reference characters refer to similar parts throughout the several views.

As aiding in a clearer understanding of certain of the various features of my invention, it may here be noted that in machines of the above type it is essential that the mechanism be so constructed as to operate with as little noise as possible. I have, therefore, found it desirable to provide a silently operating means adapted to feed the ribbon.

Referring now to the drawing, the ribbon shaft 1 has fixedly positioned thereon a grooved wheel 2. An oscillating arm 3 is journaled upon shaft 1 and is provided with a cam groove 4, said arm 3 being pivoted at 5 to a link 6 which in turn is pivotally supported by rocker-arm 7. Rocker-arm 7 is journaled to a fixed part of the machine and

is adapted to be actuated by the key levers, spacing mechanism or other movable parts which are not shown herein as they comprise no essential part of my present invention. Oscillating arm 3 is provided with a ball 8 located in cam groove 4 which ball extends in the groove in wheel 2, said groove being so constructed that the ball is normally wedged between the grooved face of wheel 2 and the cam face of oscillating arm 3. In this position an upward movement of arm 3 will by reason of ball 8 being frictionally engaged with said arm cause a slight movement of wheel 2 resulting from the frictional engagement of ball 8 therewith.

In order to prevent a backward movement of wheel 2 a bracket 9 is provided having a cam groove 10 in which is located a second ball 11 also extending into the groove in wheel 2.

While in this embodiment of my invention I have preferably employed balls 8 and 11 operating in the grooved wheel 2, the oscillating arm 3 and bracket 9, I do not intend to limit myself to such employment as other suitable means, such as cylindrical rollers could be advantageously used in this relation. It may be here noted that I preferably harden the surfaces of the several grooves and also prefer to employ hardened steel balls in the above relation.

Having described my invention, the operation thereof which should be largely obvious, is substantially as follows: It will be understood that an upward impulse of oscillating arm 3 will cause shaft 2 to be rotated to a slight extent by reason of the wedging of ball 8 between grooved wheel 2 and the cam face of oscillating arm 3. At each forward impulse of wheel 2, ball 11 will be lifted out of contact with the grooved face of said wheel and when the movement thereof is arrested said ball 11 will wedge between said grooved face and the cam face of bracket 9, thus preventing a backward movement of wheel 2, and at the end of such impulse said ball 8 will by gravity fall back into such position as to again act as a connecting element between said grooved wheel and the oscillating arm.

It will thus be seen that I have provided a ribbon-feeding device which, while accomplishing the objects sought, is characterized by simplicity and efficiency, and one that



will operate silently inasmuch as impact or concussion of movable parts is substantially eliminated.

While I have shown and described my invention in connection with a machine of the above type, I do not intend to limit the application thereof exclusively to that type nor in fact to any type of machine, it being adapted, as to several of its features, for use in a variety of relations in many other forms of machines, although peculiarly useful in the relation herein shown.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein-described and all statements of the scope of the invention, which as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, in combination, rotatably mounted ribbon-feeding means, means adapted to rotate said first-mentioned means, means free from either of the above-mentioned means adapted to form a connection therebetween, a stationary member, and means free from said supporting member and carried thereby adapted to frictionally engage said ribbon-feeding means to prevent a reverse movement thereof during the operation of said second-mentioned means.

2. In a typewriting machine, in combination, rotatably mounted ribbon-feeding means, means adapted to rotate said first-mentioned means, means free from either of the above-mentioned means adapted to form a connection therebetween, a bracket provided with a cam groove, and means operating in said cam groove and carried thereby adapted to frictionally engage said ribbon-feeding means to prevent a backward movement thereof.

3. In a typewriting machine, in combination, means adapted to feed the ribbon, a member positioned thereon provided with an annular groove, movable means rotatably

mounted upon said ribbon-feeding means adapted to be actuated to operate said ribbon feeding means, said last named means being provided with a cam groove, means free from said last-mentioned means and also free from said ribbon-feeding means adapted to form a frictional connection therebetween, a bracket provided with a cam groove, and means free from said bracket and operating in said annular groove to frictionally prevent a backward movement of said ribbon-feeding means through an engagement with the walls of the cam groove in said bracket.

4. In a typewriting machine, in combination, a shaft adapted to feed the ribbon, an annular member provided with a concentric groove positioned upon said shaft, a movable member journaled upon said shaft and provided with a cam groove arranged adjacent the groove in said annular member, means free from both of said members and interposed therebetween to form a frictional connection whereby a movement of said second-mentioned means will operate to cause a movement of said shaft and thereby feed the ribbon, a bracket provided with a cam groove arranged adjacent the groove in said annular member, movable means free from said bracket and also free from said annular member adapted to form a frictional connection therebetween to prevent a backward movement of said ribbon-carrying shaft, and means for operating said second-mentioned member.

5. In a typewriting machine, in combination, a ribbon feeding shaft, an annular member provided with a peripheral groove fixed upon said shaft, an arm journaled at one end upon said shaft having a cam portion arranged adjacent the peripheral groove of said annular member, an actuating rocker lever to which the opposite end of said arm is pivotally attached, a fixed bracket having a cam portion arranged adjacent the groove of said annular member, a ball located in said groove adapted to engage the cam portion of said arm to form an actuating connection therebetween, and a second ball located in said groove and engaging the cam portion of said bracket to prevent a reverse rotation of said annular member.

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

C. W. SPONSEL.

Witnesses:

WM. H. HONISS,  
NELLIE PHOENIX.