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RIBBON SPOOL DEVICE FOR TYPE WRITING MACHINES.

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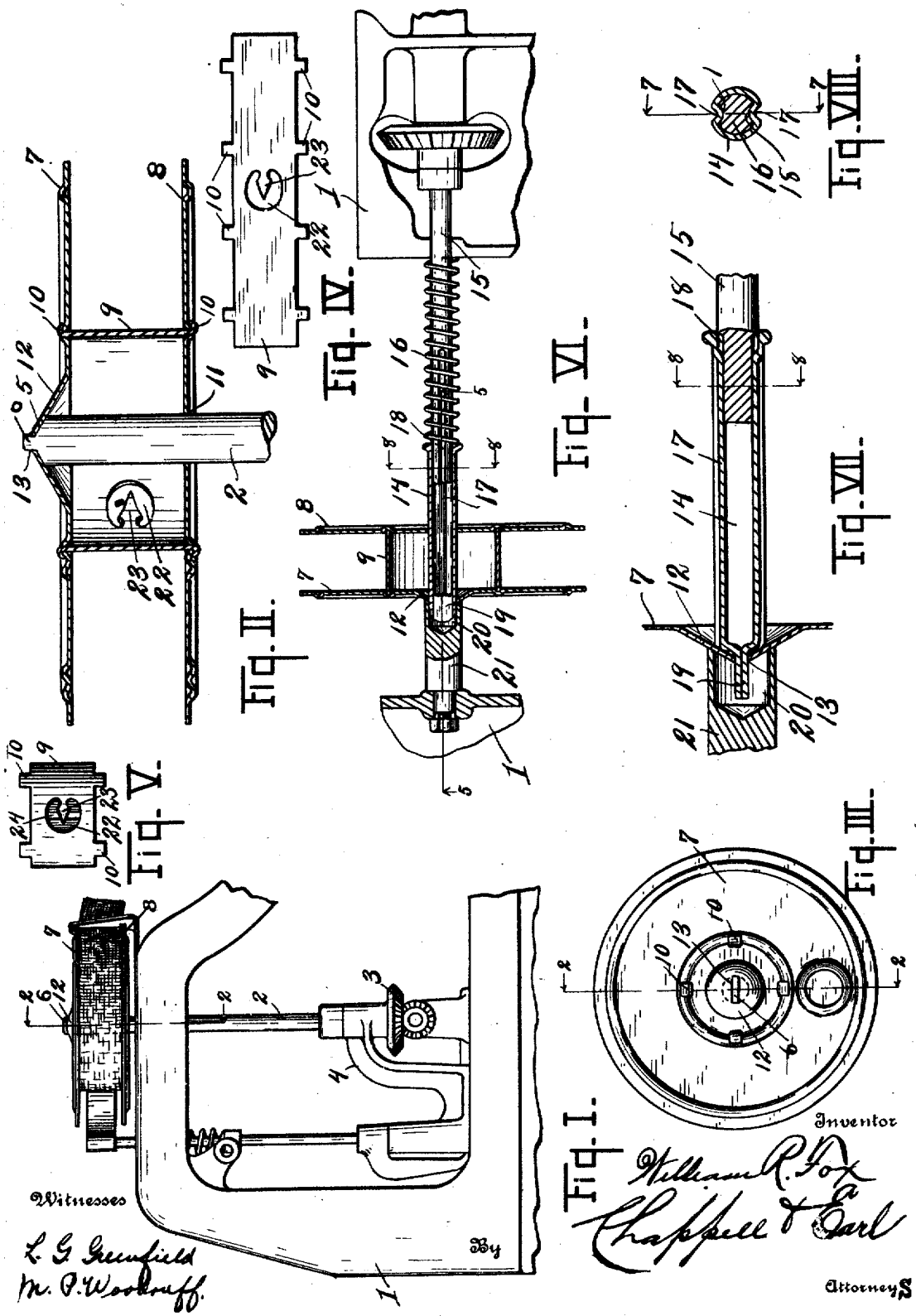

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RIBBON-SPOOL DEVICE FOR TYPE-WRITING MACHINES.

1,014,962. Specification of Letters Patent. Patented Jan. 16, 1912.

Application filed June 5, 1911. Serial No. 631,244.

To all whom it may concern:

Be it known that I, WILLIAM R. FOX, a citizen of the United States, residing at Grand Rapids, Michigan, have invented certain new and useful Improvements in Ribbon-Spool Devices for Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in ribbon spool devices for typewriting machines.

The objects of this invention are: First, to provide such a ribbon spool that is very easily applied, which is very economical to produce and which is very effectively supported when in position. Second, to provide an improved construction of barrel in a ribbon spool to which the ribbon can be readily attached and which is especially adapted to the ribbon reverse attachments.

Objects pertaining to details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is fully illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is a detail elevation view of a portion of a typewriter with one of my improved ribbon spools in position on a vertical ribbon shaft. Fig. II is an enlarged detail vertical sectional view taken on a line corresponding to line 2—2 of Figs. I and III, showing the ribbon attaching hook and details of construction. Fig. III is an enlarged detail plan view of the spool appearing in Figs. I and II. Fig. IV is a detail view somewhat enlarged, of the barrel blank. Fig. V is a detail view somewhat enlarged, of the spool barrel with the flanges removed. Fig. VI is a detail view of the spool on a specially adapted horizontal ribbon shaft structure. Fig. VII is a detail sectional view on a line corresponding to line 5—5 of Fig. VI. Fig. VIII is a detail transverse sectional view on a line corresponding to line 8—8 of Figs. VI and VII.

In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines and similar numerals of reference refer to similar parts throughout the several views.

Considering the numbered parts of the drawing, the frame of the typewriter is always indicated by the reference numeral 1. Within the frame is the vertical ribbon spool shaft 2, which is driven by the gears 3, the same being supported in bracket 4. This vertical shaft 2 is shouldered at 5 with sloping shoulders and terminates in a flat rectangular projection 6 at the center of the shaft at the top. The spool is made up of a top flange 7 and a bottom flange 8 joined together by a barrel 9, having engaging lugs 10—10 at the top and bottom for coupling these flanges together. The lower flange 8 is perforated centrally at 11 to receive the shaft 2, and the upper flange is conical at the center 12 which contains a central rectangular opening 13 to receive the rectangular end 6 of the shaft, so that in applying the spool it is only necessary to drop it onto the end of the shaft, when as soon as the shaft turns, owing to the conical form, the spool will move to the central position so that it will drop into place and be engaged by the shaft, and no further attention need be given to the spool than to drop it onto the shaft. The barrel 9 of the spool being made of sheet metal, it very readily lends itself to the formation of the attaching device which consists of a hook 23 which is formed by punching out an aperture 22 in the body of the same, and rolling it up as indicated. In this way the ribbon can be inserted through the aperture and will be engaged by the hook 23. The barrel is not made quite complete, the ends being a little separated, forming a space 24, as seen in Fig. V. This is of advantage and makes the structure specially adapted for the tripping devices for reversing the ribbon on the Fox typewriter. This particular arrangement of detail is of importance on this account because of its great economy and simplicity, and because also it is a very effective device.

In applying the structure to a horizontal shaft, a little more attention is necessary than is required to place the same on a vertical ribbon shaft.

In Fig. VI I show a horizontal shaft adapted to this improved spool. A sleeve 14 fits on the shaft 15 and is capable of longitudinal adjustment, being guided thereon

by the rib 17 engaging the longitudinal grooves 18, the sleeve being urged outwardly by the spring 16. The outer end of the sleeve 14 is compressed at 19 to form the rectangular projection at the end of the shaft, which projects into the slot 13 in the conical side 12 of the spool. The short shaft 21 is recessed at 20 to receive the projection 19, these parts definitely appearing in Figs. VI and VII and VIII. To insert the spool, the shaft sleeve 14 is pushed against the spring 16, the spool is inserted, and the sleeve is urged to position by the spring.

From this description it will be seen that my structure is capable of considerable modification and is adapted for various uses and relations in a typewriter.

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

1. In a typewriting machine, the combination of a ribbon spool comprising side flanges, one of which projects conically outward with a non-circular central aperture; and a sheet metal barrel connecting said flanges, open at one side, consisting of a scroll of sheet metal, said barrel having an aperture formed in the side thereof and containing a hook member formed within said aperture and integral with said barrel for engaging the end of the ribbon, coacting for the purpose specified.

2. In a typewriting machine, the combination of a ribbon spool comprising side flanges; and a barrel connecting said flanges, consisting of a scroll of sheet metal, open at one side, said sheet metal scroll having an aperture formed in the side thereof and containing a hook member formed within said aperture and integral with said barrel for engaging the end of the ribbon, coacting for the purpose specified.

3. In a typewriting machine, the combination of a ribbon spool comprising side flanges; and a barrel connecting said flanges, consisting of a scroll of sheet metal, having an aperture formed in the side thereof and containing a hook member formed within said aperture and integral with said barrel for engaging the end of the ribbon, coacting for the purpose specified.

4. In a typewriting machine, the combination of a ribbon spool comprising a scroll-like barrel and side flanges, one of which side flanges projects conically outward with a non-circular central aperture, the said conical flange projection being disposed to guide the spool onto the spool shaft.

5. In a spool for a typewriter, the combination of flanges secured together by a suitable barrel, one flange having a conical projection and a central oblong slot, and a ribbon spool shaft with a rectangular shouldered end to engage said oblong slot, as specified.

6. In a ribbon spool for a typewriter, the combination of flanges secured together by a suitable barrel, one flange having a conical projection and a non-circular opening, and a ribbon spool shaft with the end non-circular in cross section to engage said slot, as specified.

7. In a ribbon spool for a typewriter, the combination of flanges secured together by a suitable barrel of a scroll of sheet metal, one flange having a conical projection adapted to guide the spool into working position on the ribbon shaft by coacting with the end of the shaft within the barrel, as specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

WILLIAM R. FOX. [L. S.]

Witnesses:

KATHRYN NIBLACK,

LENA CHURCH.