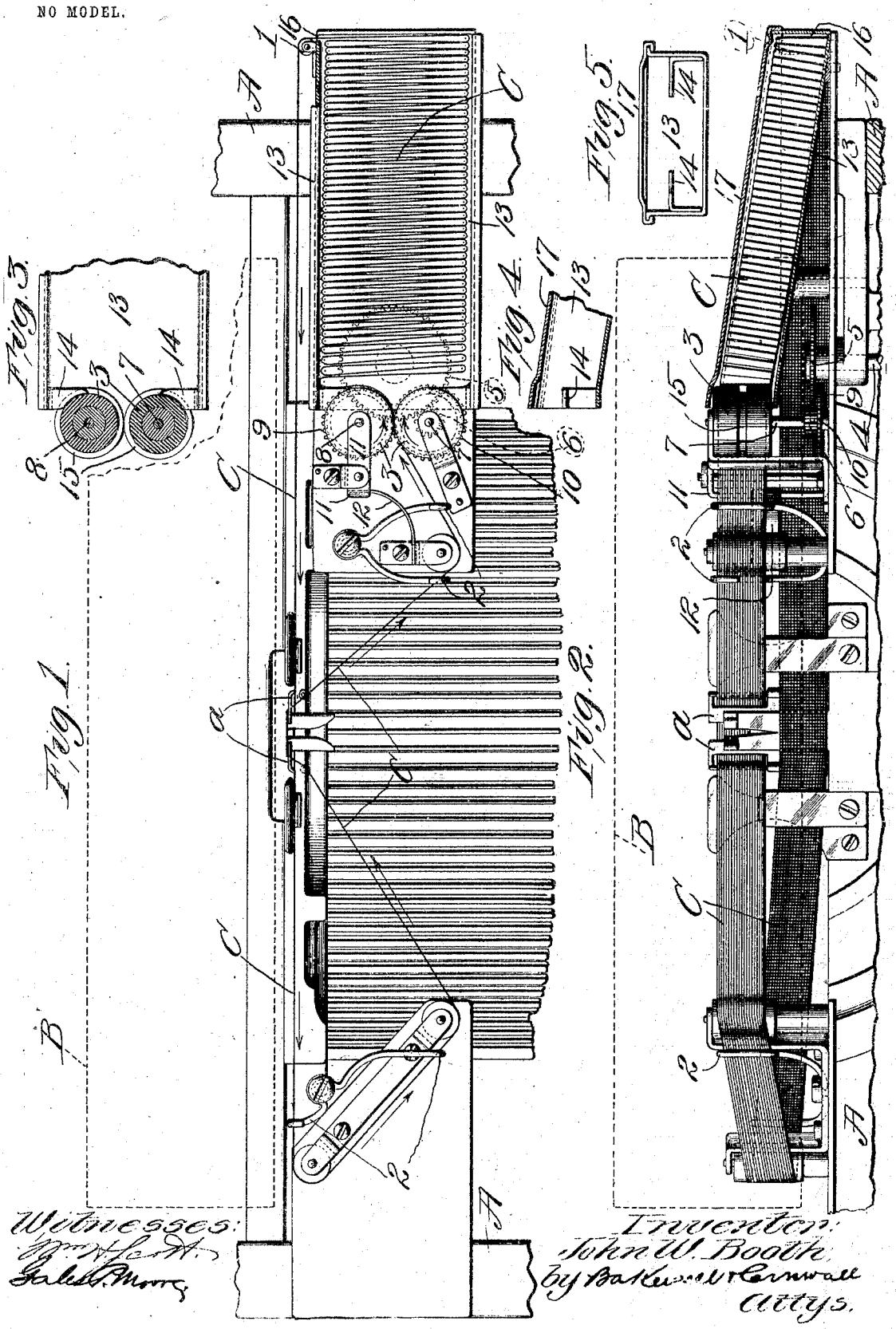
No. 764,342. PATENTED JULY 5, 1904.

J. W. BOOTH.

TYPE WRITING MACHINE.

APPLICATION FILED MAR. 25, 1903.

NO MODEL.



No. 764,342. Patented July 5, 1904.

UNITED STATES PATENT OFFICE.

JOHN W. BOOTH, OF WASHINGTON, MISSOURI.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 764,342, dated July 5, 1904.

Application filed March 25, 1903. Serial No. 149,437. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. BOOTH, a citizen of the United States, residing at Washington, Franklin county, Missouri, have invented a certain new and useful Improvement in Type-Writing Machines, 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, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of the ribbon mechanism, said view also showing a portion of the type-writing machine to which said mechanism is here illustrated as applied. Fig. 2 is a front elevation of the parts shown in Fig. 1, one side of the ribbon-receptacle being removed and the walls of such ribbon-receptacle being shown in section. Fig. 3 is a fragmentary detail looking from above, the rollers being shown in section, taken through the grooves thereof. Fig. 4 is a fragmentary elevation, partly in section, of the inner end of the ribbon-receptacle; and Fig. 5 is an end elevation showing said inner end of the ribbon-receptacle.

This invention relates to type-writing machines, and more particularly to the ribbon mechanism of such machines.

My object is to provide a type-writing machine with a ribbon mechanism for endless ribbons, the storage-receptacle being of simple and convenient construction and the feed-rolls being so located with respect to the receptacle that the incoming ribbon is engaged by first one roll and then the other for a considerable time after the ribbon enters the receptacle, whereby the ribbon is evenly laid in the receptacle in layers of substantially uniform length, thus storing the ribbon in the receptacle in such manner that it can be uniformly withdrawn from the receptacle.

To these ends and also to improve generally upon devices of the character indicated the invention consists in the various matters hereinafter described and claimed.

In the embodiment of the invention illustrated in the accompanying drawings the mechanism is shown as applied to an Underwood type-writing machine, the general construction of such machine being old and well known. It will be apparent, however, that the present mechanism can without departing from the spirit of this invention be applied to machines of other types than that illustrated.

Referring now more particularly to the drawings, A refers generally to the supporting structure, the platen-roller B being indicated by dotted lines, and C represents the ribbon, which is shown as an endless band, suitable guides *a*, such as those commonly found upon type-writing machines, being provided for properly supporting the ribbon at the point at which the type-bars operate. The ribbon also passes about other suitable guides 1 and 2, the guides 1 being shown as merely idle rollers and the guides 2 being illustrated as eyes or hooks in order to cause the ribbon to travel in lines at different elevations. The ribbon-guides will of course be varied to suit the particular type of machine to which the present mechanism is applied. At a suitable point in its length the ribbon passes between suitable driving-rolls 3, preferably constructed of soft rubber or other material, by means of which the rolls can properly grip the ribbon, and it will be manifest that as these rolls are rotated the ribbon is driven in a given direction. These driving-rolls receive their motion from a suitable shaft 4, which can be operated by the type-bars in a manner which is well understood, such a driving-shaft being commonly applied to ribbon mechanisms and this shaft being usually operated by the type-bars. As here shown, the driving-shaft 4 is provided with a gear 5, which meshes with a pinion 6 upon the shaft 7, upon which one of the driving-rolls 3 is mounted, said shaft being preferably fixedly located—*i. e.*, journaled in fixed supports. The shaft 8, which carries the coöperating driving-roll, is provided with a pinion 9, which meshes with a coöperating pinion 10 upon the said shaft 7, whereby through the connections indicated the gear 5 serves to oppositely drive the said driving-rolls, thus resulting in the desired feed of the ribbon. Preferably the shaft 8 is journaled in the arms of a pivoted frame 11, whereby

the driving-roll carried by said shaft 8 can be swung away from its coöperating roll in order to permit ready insertion and removal of the ribbon, and said pivoted frame is preferably held by a suitable spring 12 under tension against its coöperating driving-roll.

The ribbon-receptacle 13 comprises a box-like member open at its inner end, the ribbon being contained in said receptacle in layers which extend across the same, as clearly shown in Figs. 1 and 2. The driving-rolls 3 project for a considerable distance into the open end of said receptacle, and a considerable portion of the periphery of each of said guide-rolls within the receptacle is exposed to the incoming ribbon. Guide-arms 14, projecting inwardly from the side walls of the receptacle, are received in circumferential grooves 15 in the driving-rolls. The ribbon having been initially laid in the receptacle acts somewhat as a spring and tends to press against the arms 14 and the inner portions of the driving-rolls 3. As ribbon is fed into the receptacle by said rolls the incoming ribbon hugs the exposed periphery of the inner portion of a roll, and is thus carried by said roll toward one side of the receptacle, the ribbon being properly guided by the appropriate guide-arm after it leaves the roll. When the incoming ribbon reaches one side of the receptacle, its lateral movement is of course arrested, and the ribbon tends to buckle at the point between the rolls. This buckling throws the ribbon against the other roll, and this other roll, engaging the ribbon over a considerable portion of its periphery, carries the ribbon to the other side of the receptacle. Thus as a considerable portion of each roll extends within the receptacle and is exposed to the incoming ribbon the ribbon is for a considerable period engaged by a roll and is carried by this roll toward the side of the receptacle, whereby even and uniform laying of the ribbon results. At the rear of said receptacle is a ribbon-outlet 16, and the receptacle is preferably closed by means of a removable cover 17, which protects the ribbon and also prevents the same from being forced out of the receptacle.

The mechanism is simple in its construction and can be readily applied to the machines now upon the market.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

In a ribbon mechanism, a receptacle for storing a portion of the ribbon, said receptacle having side walls and a ribbon-outlet, feeding-rolls projecting into one end of said receptacle and provided in their peripheries with circumferential grooves, and guide-arms at substantially right angles to the side walls of said receptacle and tangential to the inner portions of the peripheries of said rolls, said arms being received in said circumferential grooves and extending between rolls and said side walls; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 23d day of March, 1903.

JOHN W. BOOTH.

Witnesses:
GALES P. MOORE,
GEORGE BAKEWELL.