

No. 613,178.

Patented Oct. 25, 1898.

H. H. UNZ.
TYPE WRITER.

(Application filed Nov. 7, 1888.)

(No Model.)

2 Sheets—Sheet 1.

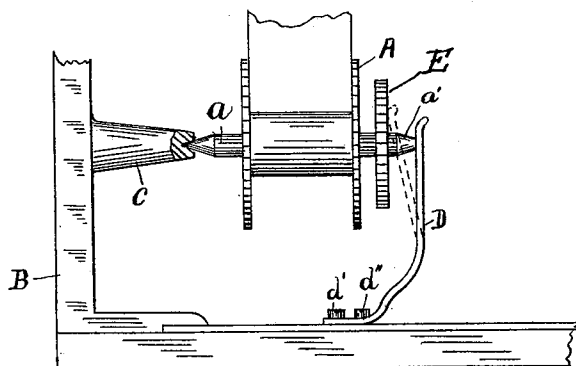


Fig. 4.

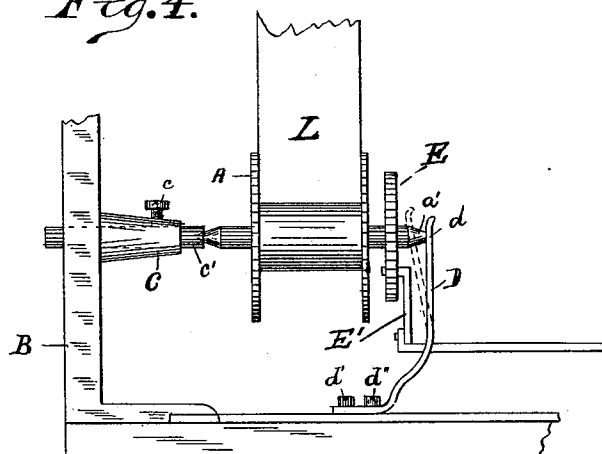


Fig. 1.

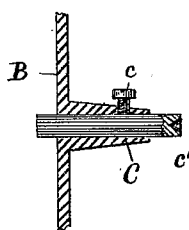


Fig. 2.

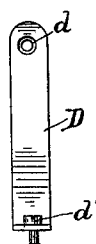


Fig. 3.

WITNESSES:

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INVENTOR

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No. 613,178.

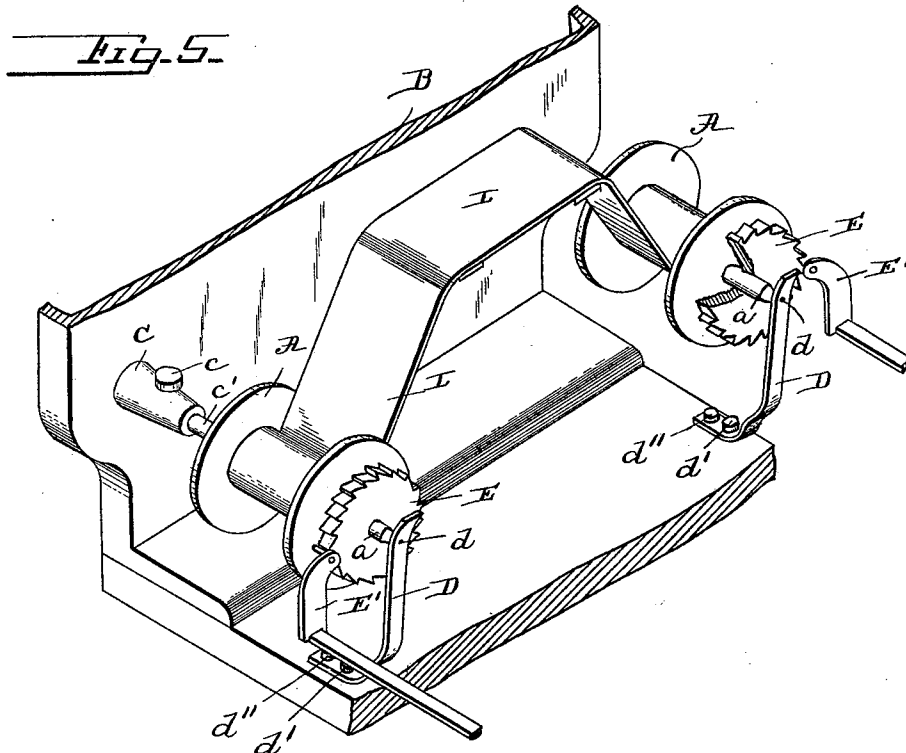
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2 Sheets—Sheet 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY H. UNZ, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
NATIONAL TYPE WRITER COMPANY, OF PENNSYLVANIA.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 613,178, dated October 25, 1898.

Application filed November 7, 1888. Serial No. 290,221. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. UNZ, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Methods of Attachment of Ribbon-Spools to Type-Writers, of which the following is a true and exact description, due reference being had to the drawings which accompany and form a part of this specification.

My invention has for its object to provide supports for the shafts of the ribbon-spools of a type-writer, so that the ribbon-spools, with their carried ribbon, can be readily connected and easily removed from the machine by the manipulation of the spools.

In the drawings, Figure 1 is a side elevation showing the ribbon-spool and its supports on the type-writing machine. Fig. 2 is a section of one of the supports. Fig. 3 is a view of the other support. Fig. 4 is a view of Fig. 1 with movable piece *c* discarded. Fig. 5 is a perspective view of the two ribbon-spools, the ribbon, and the supports for said spools.

Similar letters denote similar parts.

A represents the ribbon-spools, of the ordinary construction.

B represents a portion of the main frame of the machine.

C represents one of the supports for the ribbon-spools. This support C is hollow and has a movable piece *c'* secured within said hollow end. The shafts *a* of the ribbon-spools A are conical at their ends, and one of these conical ends of each shaft enters the hollow end of the movable piece *c'*. This piece *c'* is secured by the set-screw *c*.

D represents the outer support of the ribbon-spools, secured to the main frame at *d'* *d''*. This support in my improvement is made flexible and of sufficient strength to support the ribbon-spools. The end *a'* of each of the shafts *a* rests in an orifice *d* in the support D, the resiliency of which support holds the ribbon-spools in a fixed position between the supports C and D.

I can discard the movable piece *c'*, in which case the shafts of the ribbon-spools are supported between the support D and the support C, as shown in Fig. 4. When the ribbon-spools are off the machine and it is de-

sired to put them in place, the ends of the shafts *a* are placed in the hollow ends of the supports C, the other ends of the shafts *a* are pressed down against the flexible support D until they rest in the orifice *d* in said supports, and the shafts of the ribbon-spools are held between the supports C and supports D by the resiliency of the supports D.

When it is desired to remove the ribbon-spools and their shafts, the flexible supports are pushed forward and the spools and their shafts may thus be readily withdrawn.

The movable piece *c'* may be made to project more or less from the fixed portion of the support C, so as to increase or decrease the tension of the flexible support D on the shafts of the ribbon-spools. L is the ribbon upon said spools. The resilient supports, acting upon the shafts of the spools, hold the ribbon taut, and thus by my improved construction I am enabled not only to readily remove the spools, but also to hold the ribbon taut when said spools are in position upon the machine. By this construction the spools, with their carried ribbon, may be detached from the machine by manipulation of the spools.

E E are the ratchet-wheels, and E' E' the pawls, which together form a driving mechanism.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a type-writing machine, in combination, ribbon-spools, a ribbon passing from spool to spool, driving mechanism for said spools, shafts for said spools, a support for each shaft, said spools being detachable from the machine by manipulation of the spools.

2. In a type-writing machine, in combination, ribbon-spools, a ribbon passing from spool to spool, driving mechanism for said spools, shafts upon which said spools are mounted, fixed supports on the main frame, one for one end of each of the shafts, and a resilient support for the other end of each of the shafts whereby the ribbon-spools may be removed by manipulation of the spools.

3. In a type-writing machine, in combination, a ribbon-spool, a ribbon upon said spool, a shaft on said ribbon-spool, and a hollow projection upon the main frame, a movable

piece in said projection, means substantially as described to secure said movable piece in said projection, said movable piece having a hollowed end in which one end of the shaft of said ribbon-spool rests, and means substantially as described to support the other end of said shaft.

4. In a type-writing machine, in combination, a ribbon-spool, a ribbon upon said spool, a shaft on the said ribbon-spool, a projection from the main frame of the machine, said projection being hollow, and a support adapted to rest and move in said projection, said support being adapted to support one end of said shaft and means to retain said support in a fixed position, and means substantially as described to support the other end of said shaft.

5. In a type-writing machine, in combination, a ribbon-spool, a ribbon upon said spool, a shaft on said ribbon-spool, a projection from the main frame of the machine, said projection being hollow and a support adapted to rest and move in said projection, said support being adapted to support one end of said shaft, and a thumb-screw which passes through said projection and against said support, and means substantially as described to support the other end of said shaft.

In testimony of which invention I have hereunto set my hand at Philadelphia, Pennsylvania.

HENRY H. UNZ.

Witnesses:

RICHD. S. CHILD, Jr.,
ABNER J. DAVIS.