Jan. 15, 1924. 1,480,927

R. BERGER

MOUNTING FOR PAPER ROLLERS OF COPYING MACHINES

Filed Feb. 26, 1923

Fig. 1.

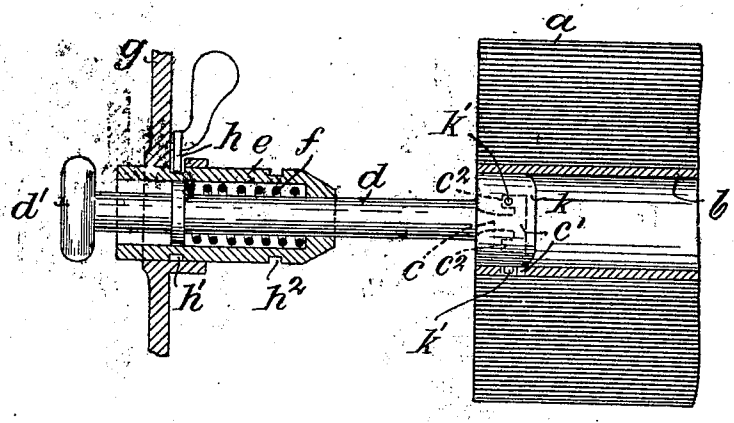
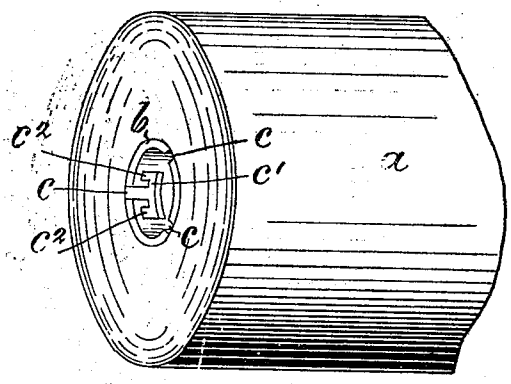


Fig. 2.



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Patented Jan. 15, 1924. 1,480,927

UNITED STATES PATENT OFFICE.

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MOUNTING FOR PAPER ROLLERS OF COPYING MACHINES.

Application filed February 26, 1923. Serial No. 621,489.

To whom it may concern:

Be it known that I, RICHARD BERGER, a citizen of Germany, and a resident of Bonn-on-the-Rhine, Germany, have invented certain new and useful Improvements in Mountings for Paper Rollers of Copying Machines, of which the following is a specification.

The object of the present invention is to provide an improved mounting for the paper-supporting rollers of copying machines, with the object of permitting the mounting to be used with only a particular construction of copying paper roller and thus preventing the use of paper rolls other than those for which the machine is intended and which might be detrimental to efficient operation of the copying machine.

Various methods of mounting the paper roll, with the aforesaid object in view, have already been proposed, but such mountings have been complicated, thus increasing the cost of the machine. They were also generally very inconvenient to manipulate so that difficulty was experienced in fitting the paper roller in correct position in the machine. This difficulty was also accentuated when the machine was used with different paper rolls, differing either in size or in colour. Some of the previously known mountings were so constructed that once the paper-supporting roller was mounted in the machine, it could not be removed without destroying the spool or core of the paper roll.

The present invention provides a very simple and reliable mounting such that no difficulty is experienced in fitting or removing the paper roll.

According to the present invention the paper-supporting roller has a hollow end and a plurality of bayonet slots therein engaged by projections on a plug axially spring-controlled and rotatably mounted. The plug fits in the hollow end of the paper-supporting roller and is coupled thereto by sliding the plug into the hollow end of the paper roller and thereupon giving the plug a slight turn.

In order that the invention may be more clearly understood, reference is hereinafter made to the accompanying drawings illustrating one construction of my improved mounting.

Fig. 1 shows the mounting in vertical section, and

Fig. 2 is a perspective end view of the paper roller.

The paper a is wound upon a paper-supporting roller b which may consist of a pasteboard tube, in one end of which a plurality of slots are provided. On the drawings I have shown three T shaped slots, each consisting of a longitudinally extending portion c extending from the outer end of the roller b, a branch c' at right angles to the longitudinal portion c and a longitudinal continuation c^2 of the branch c', the continuation c^2 returning towards the end of the roller.

The journal d for the paper roller is mounted in a housing e and controlled by a spring f. The housing e is axially slidable through an aperture in the frame g and is secured in one of two different positions by means of a locking bar h which engages one or other of the annular grooves h' and h^2 in the housing e. The two grooves h' and h^2 are provided to enable the mounting to be used for paper rolls of two different widths, say for quarto and folio size. The journal d carries a plug k of the same diameter as the internal diameter of the paper roller b. The plug k is provided with three radial projections k' located to engage the three T shaped slots.

In order to insert the paper roll, the journal d is first of all moved outwardly by means of a hand grip d' in order that the end of the paper roll (not shown) may be fitted on to a fixed or other suitable journal. When the paper roller has been fitted into its correct position, the journal d is pushed inwardly in order to slide the plug k into the paper roller d. The journal d is then rotated in either direction until the operator can tell by the resistance that the projections k' have been brought up against the end of the branches c'. The journal d or hand grip d' is then released and the spring f automatically returns the journal d and plug k, causing the projections k' to ride along the longitudinal continuation c^2 of the branch c'. The paper roll is then absolutely and firmly held in position and is not liable to be displaced accidentally by vibration or the like.

It is not essential that the slots should be

T shaped as shown on the drawing. The slots may be L shaped or in the form of a bayonet joint. The T shaped slot is, however, preferable as the operator does not require to hesitate in the rotation of the journal *d*, since with the T shaped slot, the journal can be rotated in either direction. The engagement of the projections with the longitudinal continuation c^2 of the slot under the action of the spring *f* prevents any accidental displacement of the paper roll.

Claims:

1. In a copying machine, a paper-supporting roller having a hollow end and a plurality of bayonet slots therein, each slot opening into the end of the roller, a plug adapted to fit into the said hollow end, projections on said plug for engaging said slots and an axially spring-controlled and rotatable support for said plug.

2. In a copying machine, a paper-supporting roller having a hollow end and a plurality of slots therein, each slot being T-shaped, the vertical limb of the T extending inwardly from the end of the roller, a plug adapted to fit into the said hollow end, projections on said plug for engaging said slots and an axially spring-controlled and rotatable support for said plug.

3. In a copying machine, a paper-supporting roller having a hollow end and a plurality of slots therein, each slot consisting of a portion extending longitudinally inwardly from the end of the roller, a branch at the inner end of and at right angles to said longitudinal portion and a longitudinal continuation of said branch returning towards the end of the roller, a plug adapted to fit into the said hollow end, projections on said plug for engaging said slots and an axially spring-controlled and rotatable support for said plug.

The foregoing specification signed at Cologne, Germany, this 3rd day of January, 1923.

RICHARD BERGER.