(No Model.)

G. C. BLICKENSDERFER.

ROLLER OR PLATEN FOR TYPE WRITING MACHINES.

No. 442,603. Patented Dec. 16, 1890.

Fig. 1

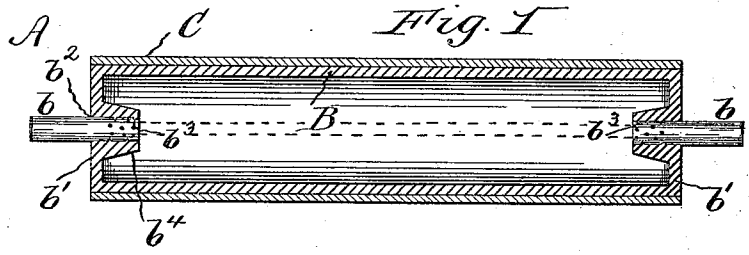


Fig. 2

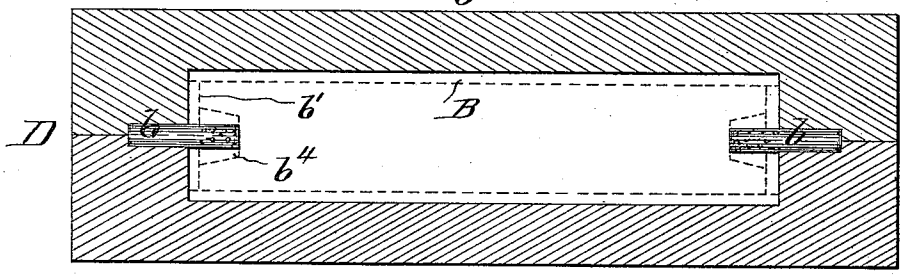


Fig. 3

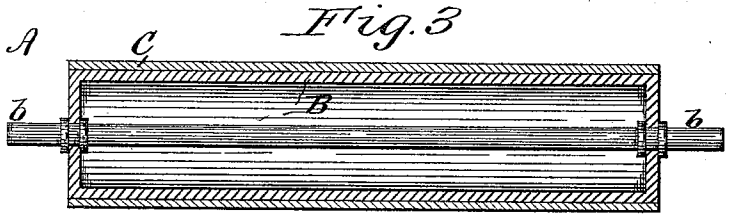
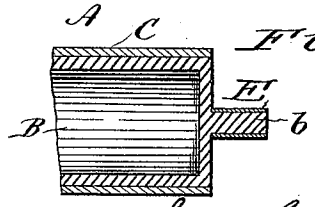


Fig. 4



Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE C. BLICKENSDERFER, OF STAMFORD, CONNECTICUT.

ROLLER OR PLATEN FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 442,603, dated December 16, 1890.

Application filed September 4, 1889. Serial No. 322,978. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. BLICKENSDERFER, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Rollers or Platens for Type-Writing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to hollow cylindrical rollers or platens for paper-holding carriages for type-writing machines, wherein the roller consists of an inner and outer shell, and the inner shell is provided with end journals; and it has for its objects to so improve this form of roller that it can be inexpensively made, is exceedingly durable, and of a light or minimum weight, and avoids undue wear of the type.

My invention accordingly consists of the combinations, constructions, and arrangements of parts, as hereinafter described in the specification, and pointed out in the claims.

Reference is had to the accompanying drawings, wherein Figure 1 is a longitudinal section of a roller embodying my improvements, showing one form of same. Fig. 2 is a like view of a mold, illustrating the manner of forming the hollow hard-rubber cylinder, and securing thereto in the mold the end or shaft journals of metals. Figs. 3, 4, and 5 are sectional elevations showing different constructions of rollers.

A represents the roller composed, essentially, of an inner hollow hard-rubber cylinder or tube B, having shaft or end journals *b b*, and an outer layer or covering of softer vulcanized rubber C. The cylinder or tube B is hollow to give the requisite strength to the roller, and being of hard rubber it is of a very light weight, so that its inertia, when it is to be moved longitudinally, is very readily overcome by a light pressure or force. The cylinder B may be blown or cast in a mold, and it has ends *b'*, with openings b^2 for its shaft-journals *b b*. Provision for said ends and journals may be made in various ways, and in the drawings I have illustrated a number of constructions and arrangements of the same.

In Fig. 1, which I deem one of the preferable forms of rollers or platens, the cylinder B has its ends *b'* blown integrally therewith, and in each end opening b^2 is secured a separate shaft-journal *b*, which journals are unconnected; or, in other words, the roller has no shaft running from end to end of the same, which further reduces the weight of the roller or platen. The manner of producing this described form of cylinder B, with ends *b'* and end journals *b*, is substantially as follows: A two-part or other mold D, as illustrated in Fig. 2, is made and the separate shaft-journals *b b* are inserted therein, as indicated. The inner ends b^3 of said journals are roughened, indented, perforated, annularly grooved, or otherwise correspondingly treated to allow the rubber of which the cylinder B is made, and as it is blown, to enter the recesses formed, as described, in said ends b^3, to obtain a tight grasp or hold thereon, and thereby prevent lengthwise movement of the journals independent of the cylinder and to cause both the cylinder and journals to rotate together. The mold being duly prepared with the journals *b b* and the supply of rubber and water or other liquid inserted therein, it is treated or heated in the usual manner, to blow therein, as indicated by dotted lines in Fig. 2, the cylinder B with integral ends *b'* and its firmly-connected journals *b*. If desired, the cylinder ends *b'* may be provided with inside hubs b^4 to give increased bearing for the journal ends b^3, and by so doing the cylinder ends *b'* may be made thin, as shown in Figs. 1 and 2.

The cylinder B when removed from the mold D requires little, if any, finishing, and it is subjected to treatment in the usual or other way to vulcanize thereon the outer covering or layer of softer rubber C, in lieu of which, however, said covering C may be a separately-formed tube and slipped over the cylinder B and cemented or otherwise connected thereto in any desired way.

If desired, the sectional or separate shaft-journals *b* may be connected by a thin or small bar or rod of a smaller diameter, as indicated by dotted lines, Fig. 1, or a shaft extending from end to end of the roller may be

substituted, as indicated in Fig. 3, in which case those portions or parts of the shaft passing through the end openings b^2 in the cylinder B will be roughened or otherwise treated, as hereinbefore described, to admit of firmly connecting the shaft to the cylinder.

Instead of using separate or metal shaft-journals b, as above set forth, hard-rubber journals may be substituted, in which case they are blown integral with the cylinder ends b', as illustrated in Fig. 4, and these hard-rubber journals when subject to undue wear or otherwise, as desired, may be covered with metal or other suitable sleeves E, as shown in Fig. 5. The ends b' may be solid, or they may be of skeleton or spoke form with outer rim and hub.

In describing my invention I have used the term "roller or platen." I do not mean to confine myself to the same having a circular form, as it may have any desired form in cross-section, as required for the machine to which it is to be applied.

What I claim is—

1. A roller for type-writing machines, consisting of a hollow shell of hard rubber, the ends and cylinder of which are formed or blown in one piece, journals on said ends, and a soft-rubber outer shell, substantially as set forth.

2. A roller for type-writing machines, which consists of an inner hard-rubber shell having ends provided with journals of the same material, and an outer coating of soft rubber, substantially as described.

3. A roller for type-writing machines, which consists of an inner hard-rubber shell having its ends and journals formed integral therewith and a soft-rubber outer shell, substantially as described.

4. A roller for type-writing machines, which consists of an inner shell of hard rubber with ends and journals of the same material, and said journals having metal sleeves thereon, substantially as described.

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

GEORGE C. BLICKENSDERFER.

Witnesses:
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J. C. VEDDER.