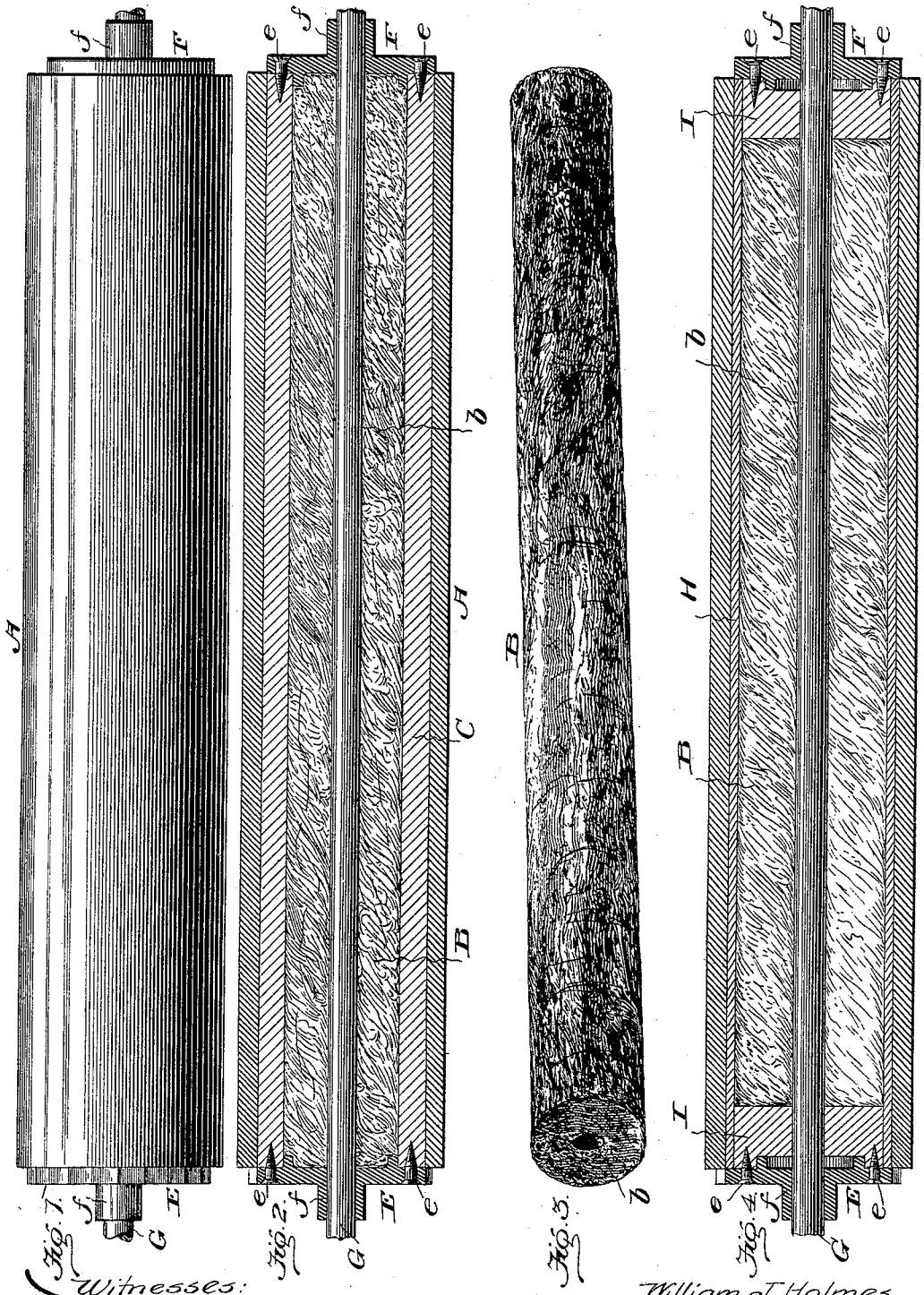
(No Model.)

W. J. HOLMES.

TYPE WRITING MACHINE CYLINDER.

No. 583,804. Patented June 1, 1897.



Witnesses:
Wm. C. Dashiell
W. E. Bemhard

William J. Holmes
Inventor
By Edson Bro's.
Atty's.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM J. HOLMES, OF UTICA, NEW YORK.

TYPE-WRITING-MACHINE CYLINDER.

SPECIFICATION forming part of Letters Patent No. 583,804, dated June 1, 1897.

Application filed February 11, 1896. Serial No. 578,875. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. HOLMES, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Cylinders 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 is a cylinder for type-writing machines; and the object that I have in view is the production of a simple, cheap cylinder which will reduce to a minimum the noise due to the impact of the type against the surface of the cylinder.

Experience with a type-writing machine equipped with a cylinder constructed in accordance with my invention has demonstrated that the noise resulting from the operation of the machine is much less than when the ordinary types of cylinders are mounted in the machine for the type to strike against. In short, the new cylinder makes the machine practically noiseless.

My improved cylinder consists of the combination of an imperforate cylindrical rubber printing-surface, a solid cork core which substantially fills the interior space of said cylindrical printing-surface and forms a noise-deadening medium therefor, and a spindle passing through and in contact with said cork core.

In the practical application of a cork core to the inside of an ordinary rubber cylinder which forms the printing-surface for some types of writing-machines provision must be made for the attachment of metallic heads or end pieces and the metallic spindle on which the cylinder is to be mounted for axial rotation.

One embodiment of my invention contemplates the use of a tube of wood or other fibrous material between the cork core and the external rubber cylinder and in the provision of a passage extending axially through the cork core, in combination with metallic end pieces or heads which are attached to the fibrous or wooden cylinder, and a spindle fitted in the axial opening of the cork core and in bearings in the metallic heads or end pieces of the cylinder.

In another and the preferred embodiment of my invention a metallic tube is used in lieu of the wooden tube, which metallic tube serves to inclose the cork core and is in turn housed within the rubber cylinder, and the open ends of this metallic tube are closed by wooden or fibrous plugs which afford a convenient means for holding the screws that serve to fasten the metallic heads or end pieces to the cylinder; and the invention further consists in the construction and combination of parts which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of a cylinder embodying my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail perspective view of the cork core detached from the cylinder. Fig. 4 is a longitudinal sectional view through another embodiment of the invention, in which the core is inclosed within a metallic tube.

Like letters of reference denote corresponding parts in all the figures of the drawings.

In the embodiment of my invention shown by Figs. 1 to 3, inclusive, it consists of an external rubber cylinder A, which constitutes the printing-surface for the impact of the type, a core of cork B, and a tube C, which is arranged between the cork core and the rubber cylinder to afford a convenient means for the attachment of the metallic heads or end pieces E F.

The cylinder A and the heads or end pieces E F are similar in all substantial respects to those used on ordinary type-writing machines which employ a movable carriage in which the cylinder is mounted in a way to present its surface for the type to strike against, or against the paper fitted around the cylinder; but the cylinder may be constructed to be used in connection with any other kind of type-writing machines.

The core B is made or composed, preferably, of a single piece of cork of appropriate length and diameter to fit tightly in the tube C, which in turn fits snugly in the rubber cylinder A, and through the cork core is provided a longitudinal axial opening or passage *b* for the purpose of accommodating the spindle G, on which, in some kinds of type-writing machines, the cylinder is to be mounted for

axial rotation, and which spindle affords a convenient means for the attachment or mounting the cylinder in the paper-carriage.

The tube C in Figs. 1 and 2 is made of wood or other fibrous material of such size as to properly fit within the rubber cylinder, and the ends of this fibrous tube are exposed to receive the screws *e*, which are usually employed to fasten the metallic heads to the cylinder, whereby the fibrous tube affords a convenient means for securely attaching the heads or end pieces. One of these metallic heads (the head E) in the ordinary well-known type of cylinder is formed with ratchet-teeth on its periphery to serve as the feeding-ratchet for turning the cylinder on its axis so as to feed the paper each time the carriage is returned to place to begin a new line; but the other metallic head or end piece F is a plain disk to close the end of the cylinder against which it is applied. As is usual, these metallic end pieces or heads are provided with integral hollow bosses *f*, which are in axial alinement with the passage *b* in the cork core, and through the hollow bosses the spindle G is passed, so that the metallic bosses serve as bearings by which the cylinder is rotatably mounted on the spindle. These metallic bearings take up the friction and wear which comes upon the cylinder due to its rotation when feeding the paper, so that the cork core is not subjected to any appreciable degree of wear and deterioration.

In the embodiment of my invention (illustrated by Fig. 4 of the drawings) the fibrous tube C is omitted, and in lieu thereof I use a metallic tube H, which serves to inclose the cork core and is itself inclosed within the rubber cylinder. When the metallic tube H is used, I prefer to make the cork core of somewhat less length than when it is used in connection with the fibrous tube C, in order to provide spaces in the ends of the metallic tube H to receive the plugs, which afford a secure means for holding the screws or other fastenings that attach the end pieces or disks E F to the cylinder. Each end of the metallic tube H may be closed by means of one or more wooden or fibrous plugs I, which are preferably forced tightly into the open ends of the tube H, up against the cork core, and arranged so as to be practically flush with the ends of said metallic tube. The end pieces or heads, constructed in the same way as in the ordinary cylinder and as shown by the drawings, are applied against the ends of the rubber cylinder, the metallic tube, and the fibrous plugs, and through suitable apertures in the said metallic heads are passed the screws, which embed themselves in the fibrous plugs and thus operate to securely fasten the heads or end pieces to the cylinder.

The chief advantage resulting from the use of a cylinder constructed in accordance with my invention is the comparative freedom from the noise due to the type striking against the surface of the cylinder, as the cork core offers a cushion for the impact or blow of the type and serves as a noise-deadening medium. Another advantage is the facility by which the rubber cylinder A when worn or played out can be replaced. It will be noted that the core, its jacket or inclosing-tube, and the metallic heads are attached or united together, and to replace a worn-out rubber cylinder it is only necessary to remove one of the end pieces or heads, detach the old cylinder, slip the device into a fresh new cylinder, and again attach the head to the core.

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

1. In a cylinder for type-writing machines, the combination of a cylindrical rubber printing-surface, a tube within the same, the noise-deadening core which fills the space within said tube and is provided with an axial opening, fibrous end plugs fitted in the tube against the noise-deadening core, the end bearing-pieces attached to the fibrous plugs, and a spindle passing through the bearing-pieces, the plugs, and said core and forming an interior support for the core and cylinder, all arranged and combined for service as set forth.

2. In a cylinder for type-writing machines, the combination of an imperforate cylindrical printing-surface, a tube fitted in said printing-surface, a noise-deadening core which substantially fills the interior space of said tube, and a spindle in contact with said core; the spindle being removable from the core, and the tube and core being removable bodily from the printing-surface, as and for the purposes described.

3. In a cylinder for type-writing machines, the combination with an imperforate cylindrical rubber printing-surface, of a noise-deadening core which substantially fills the interior space of said printing-surface, fibrous attaching means within said printing-surface, metallic end pieces fastened rigidly to said fibrous attaching means, and a spindle which passes through said metallic end pieces and through and in contact with the noise-deadening core, as and for the purposes described.

4. In a cylinder for type-writing machines, the combination of an imperforate, cylindrical, rubber printing-surface, a solid continuous cork core which substantially fills the interior space of said printing-surface and forms a noise-deadening medium and a resilient backing for said printing-surface, and a spindle passing through and in contact with said cork core, as and for the purposes described.

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

WILLIAM J. HOLMES.

Witnesses:
JOHN MCGUIRK,
J. GEO. SWERTFAGER.