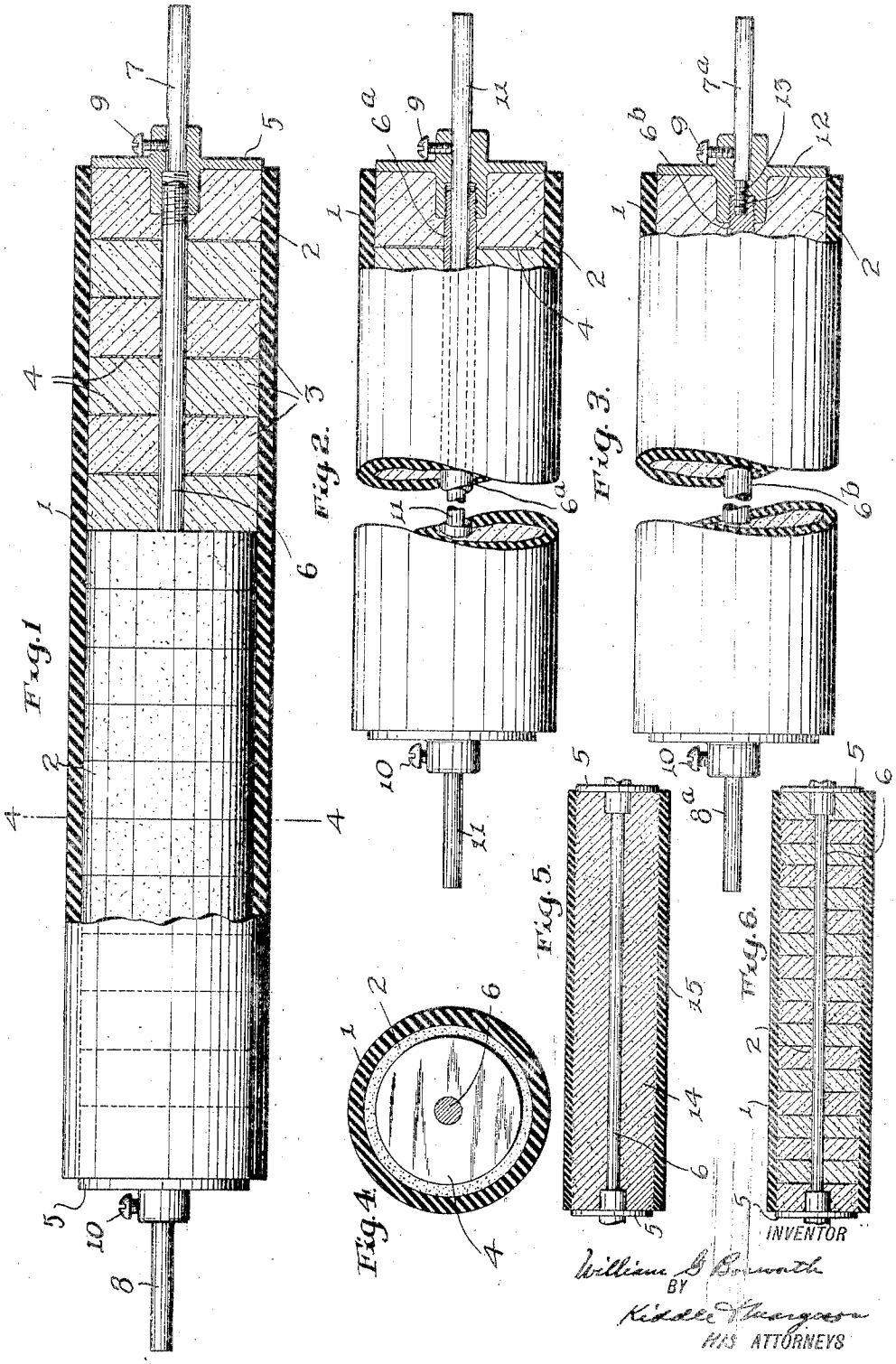
W. G. BOSWORTH.

TYPEWRITER ROLLER.

APPLICATION FILED MAY 8, 1918.

1,334,219. Patented Mar. 16, 1920.



INVENTOR

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TYPEWRITER-ROLLER.

1,334,219. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed May 8, 1918. Serial No. 233,228.

To all whom it may concern:

Be it known that I, WILLIAM G. BOSWORTH, a citizen of the United States, and a resident of the borough of Manhattan, in the city of New York, county and State of New York, have invented certain new and useful Improvements in Typewriter-Rollers, of which the following is a specification.

The invention relates to rollers used in typewriter machines and which rollers serve as a means for feeding the paper and for supporting the paper when the type imprint is being made thereupon. A roller of this type is frequently referred to as the platen or cylinder of the typewriter machine.

It is well known that in typewriter machines noise is experienced as the result of the incessant striking of the small type against the paper supported on the roller.

An object of the present invention is to construct a roller in such a manner that there will be emitted only a minimum amount of noise when the typewriter machine is in use, so that the roller will be durable for a comparatively long period of time, and so that the roller will enable the realizing of a high grade character of work during its life.

I have found that a roller having the desired characteristics can be made by forming a core, preferably of cylindrical sections arranged end to end, of baked compressed cork and by assembling in position on this cork core, or inner roller as it may be called, a suitable casing or outer shell.

According to the invention herein described a roller or platen can be made which will be comparatively noiseless and with a substantially true cylindrical surface, which roller or platen will be comparatively cheap to manufacture and will keep its shape for a comparatively long period of time, and which roller or platen will yield the desired results throughout said use.

The invention is directed to the features of construction above referred to as well as to others, all of which are clearly set forth and described herein.

As illustrating certain specific embodiments of the invention reference is made to the drawing forming a part of this specification and in which drawing,

Figure 1 shows in part sectional elevation an embodiment of my invention.

Fig. 2 is a part sectional elevational view of another embodiment of my invention.

Fig. 3 is a view similar to Fig. 2 of yet another embodiment of my invention.

Fig. 4 is a view taken substantially on the line 4—4 of Fig. 1.

Fig. 5 is a longitudinal sectional view of a further embodiment of my invention.

Fig. 6 is a longitudinal sectional view of a still further embodiment of my invention.

Referring now to the drawings in detail I have shown in Figs. 1, 2 and 3 a rubber casing or outer shell of the roller or platen and which I have designated 1, the core or inner roller in said figures being designated by 2. The core 2 comprises a number of cylindrical sections 3 arranged end to end longitudinally of the roller. Between adjacent ends of adjacent cylindrical sections I have shown a washer 4 preferably made of thin sheet lead. This lead washer serves in a way to deaden or dampen any sound vibrations which tend to be communicated from one cylindrical section to the next.

An inspection of Fig. 1 will make it clear that substantially the entire core or inner roller is made up of the cylindrical sections 3 and particularly the body portion of the roller. The sections 3 are strung upon a rod 6 with washers 4 between adjacent disks and held in place thereon by end plates 5, these plates being provided with screw threaded trunnions 14 engaging the rod 6. The movement of the plates 5 upon the rod is limited by the shoulder 15 in the bore of the trunnions, so that with the rod 6 cut to the correct length it is merely necessary to screw the plates 5 thereon until the shoulders 15 engage the outer ends thereof, no further adjustment being necessary. In this connection I wish to note that preferably the rod 6 is cut to such a length that when the plates 5 are screwed thereon to cause the shoulders 15 to engage the end of the rod the sections 3 are slightly compressed. Inserted in the outer ends of the trunnions 14 are rods 7 and 8, held in place by screws 9 and 10 respectively.

An important feature of the present invention resides in the particular material used for the core of the roller. For this purpose I have found baked compressed cork to be very satisfactory, although other materials could be substituted therefor, but

such materials are preferably subjected to a baking process. In this connection I might add that such a roller will not warp or crack, is impervious to moisture and will maintain its form indefinitely.

The cork which I have used in the present embodiment of my invention is first rendered in finely divided form, almost floury, or it may be granular or even coarser, and this finely divided cork is then compressed under a pressure approximating, for instance, 800 pounds to 1000 pounds to the square inch. This cork while being compressed is subjected to a temperature ranging for example as low as 350 degrees F. to as high as 800 degrees F. The resilience and resonance of the resulting product is largely dependent upon the compression and upon the temperature under which it is baked.

It will here be remarked that it is advisable in the construction of the roller or platen to have each cork section make a tight fit with the tying means, as with the tie-rod 6. The clamping of the cork sections between the end-plates also effects an embeding to a certain extent of the thin lead washers in the core sections engaged thereby. The rubber casing or outer shell 1 should make a tight fit with the core or inner roller upon which it is located. The roller or platen shown in Fig. 1 results in a construction that is comparatively noiseless and which will maintain its shape during a comparatively long period of continued use.

The roller or platen shown in Fig. 2 is substantially the same as the roller or platen shown in Fig. 1 with the exception that in Fig. 2 the tie-rod 6^a is hollow and the shaft members or trunnions for the roller are provided at the ends of a single shaft 11 extending through the hollow tie-rod 6^a and which is held in place by the screws 9 and 10.

The roller or platen shown in Fig. 3 is substantially the same as that shown in Fig. 1, with the exception that according to Fig. 3 the center core may or may not comprise cylindrical sections. In other words, the core shown in Fig. 3 may be a solid or one-piece core or a core made from several disks bound together as one by an adhesive substance taking the place of the metal washer formed of compressed baked cork made as heretofore described.

According to the construction shown in Fig. 3 the tie-rod 6^b is a solid member having sockets, as 12, therein into which there enter inner end portions 13 of a shaft member or trunnions 7^a or 8^a that are held in place by the screws 9 or 10. In this construction also the tie rod 6^b is cut to the proper length and the caps or plates 5 are screwed thereon until their shoulders 14 engage the ends thereof, the rods 6^b preferably being of such a length as to cause the plates 5 to compress the cork.

In Fig. 5 there is illustrated a roller or platen having a solid or one-piece core 14 of baked compressed cork, formed as herein described, and to this core 14 there is vulcanized an outer rubber casing 15. This rubber casing may be vulcanized to the core by heating the rubber casing, for example to approximately 140 degrees C. (284 degrees F.). As the vulcanizing temperature is lower than the temperature at which the cork was baked this vulcanizing operation can be readily performed after the core or inner roller has been completed and by properly conducting the vulcanizing operation the desired roller or platen can be produced with the outer casing properly vulcanized in place upon the core or inner roller.

In Fig. 6 there is shown a roller or platen wherein the core or inner roller is composed of a number of cylindrical sections. The core shown in Fig. 6 may be made the same as the core shown in Fig. 1 and described in connection with said figure. The rubber casing or outer shell of the roller or platen shown in Fig. 6 is vulcanized to the core or inner roller after the latter has been completed in the same manner as the outer shell shown and described in connection with Fig. 5 was vulcanized in place to its core or inner roller and therefore further description at this time of the construction shown in Fig. 6 is believed to be unnecessary. The shaft members or trunnions for the rollers or platens shown in Figs. 5 and 6 could be of any suitable construction, for example that shown in Figs. 1, 2 or 3.

In place of baked compressed cork any other substance or material in mechanical mixture may be used whose resonant qualities are reduced to a lower degree by the action of compression and baking as in the case of cork. It will be obvious also that the covering for my improved roller may be made of material other than rubber if desired.

It is of course evident that various modifications may be made in the shapes of the parts and otherwise within the purview of my invention and that the structure above described may be used in combination with devices other than typewriters.

It is to be understood that if desired, the baked, compressed, cork core may be dipped in any suitable material, such as shellac for example, to coat the same with a covering to take the place of the shell such as already described.

What I claim is:

1. As an article of manufacture, a typewriter roller or platen core composed of baked compressed cork.

2. As an article of manufacture a typewriter roller or platen comprising a core of baked cork and an outer shell thereupon.

3. A typewriter roller or platen having a core which comprises baked compressed cork and which core is surrounded by an outer casing or shell of vulcanized rubber.

4. As an article of manufacture a typewriter roller or platen comprising a core of baked compressed cork, a rod extending through said core and plates secured to said rod whereby the core may be compressed, the amount of compression of said core being limited by stop mechanism with which the plates are provided engaging said rod.

5. A typewriter roller or platen comprising baked compressed cork cylindrical sections arranged end to end lengthwise of the roller, and a vulcanized rubber casing fitting the exterior of said core.

6. A typewriter roller or platen comprising baked compressed cork cylindrical sections with sound deadening washers between the adjacent ends of adjacent sections, and a casing fitting the exterior of said core.

7. A typewriter roller or platen comprising end plates, a tie rod extending from end-plate to end-plate, baked compressed cork cylindrical sections on said tie rod, sound deadening material between adjacent cork sections, said cork sections being compressed by the said end-plates, the amount of compression being limited by stop mechanism with which the plates are provided, engaging the ends of said tie rod.

8. As an article of manufacture, a typewriter roller or platen comprising a core of baked compressed cork and a covering for said core.

9. A typewriter roller or platen comprising a core of baked compressed cork, and an outer shell comprising a rubber and cork vulcanized composition.

10. As an article of manufacture, a typewriter roller or platen comprising a core of baked, compressed cork having an outer shell upon the same.

This specification signed and witnessed this 2d day of May, A. D. 1918.

WILLIAM G. BOSWORTH.

Signed in the presence of—

EDWIN A. PACKARD,

G. MCGRANN.