June 22, 1926. 1,590,138

J. H. WAGENHORST

MANDREL FOR BATTERY JARS

Filed Feb. 24, 1919

Fig-1

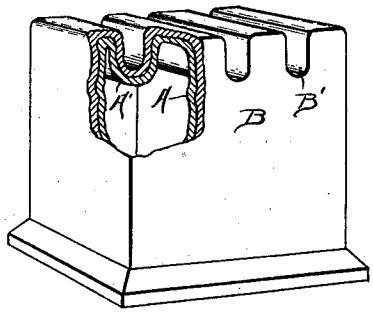
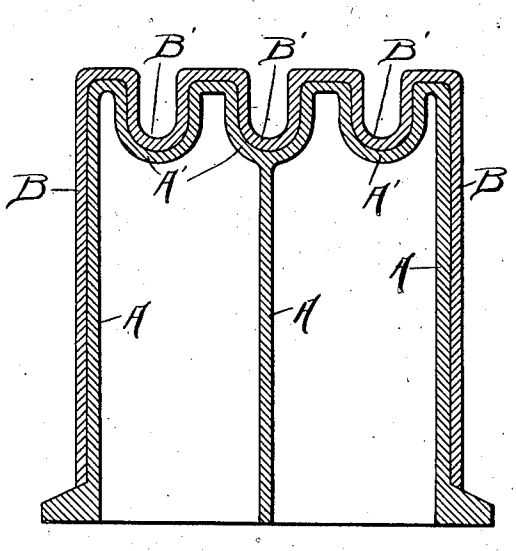


Fig-2



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MANDREL FOR BATTERY JARS.

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This invention relates generally to mandrels for making hard rubber jars for storage batteries.

Heretofore mandrels or forms have been made of cast iron, and the forming surface thereof was machined and polished in order to provide a smooth surface, and consequently a mandrel or form made in this manner was very expensive.

Furthermore a cast iron mandrel or form was subject to attack from the various ingredients of the rubber compound, and constant care was required in order to keep the surfaces perfectly smooth and prevent scaling or tearing off of a portion of the molded article when the mandrel or form was withdrawn.

The object of my invention, therefore, is to avoid this defect and provide a mandrel or form which can be quickly and easily manufactured, one which does not require any machining, and one which will not deteriorate under use; and with this object in view my invention consists in providing a mandrel or form of lead having arranged therein a core or base of cast iron, or other suitable rigid material, capable of withstanding the pressure placed upon said mandrel or form while the material is being moulded upon the exterior thereof.

The invention consists also in certain details hereinafter fully described and pointed out in the claim.

In the drawings forming a part of this specification Fig. 1 is a perspective view of a mandrel constructed in accordance with my invention, one corner of said mandrel being shown in section in order to disclose the two thicknesses of different metals; and Fig. 2 is a vertical sectional view of a mandrel or form constructed in accordance with my invention.

Referring to the drawings A indicates the core or base which is preferably of cast iron and its exterior is made of the contour or shape of the ultimate mandrel but slightly smaller than the finished article, and if desired this core or base can be formed with one or more reenforcing partitions as most clearly shown in Fig. 2. The core is also provided with an outwardly extending base flange A^2 which serves to keep the mandrels spaced apart in the vulcanizer so that the rubber articles being vulcanized will not contact with one another and this base flange also provides means for holding the mandrel while the vulcanized article is being stripped therefrom.

Covering the exterior of this cast iron core or base is an envelope or skin B of lead, this outer covering envelope or skin being placed completely over and made to completely cover the cast iron base or core as most clearly shown.

Thus it will be noted that the cast iron base is made with transverse indentations A′ and the lead covering is pressed into the same as most clearly shown at B′, this form being made in this manner in order to produce the transverse ridges or ribs in the bottom of the jar, but it will be understood that the same method of manufacture is followed in connection with various types of mandrels, that is, the cast metal base or core has the general shape and contour of the mandrel and the ultimate finished shape and dimension is provided by the lead covering or skin which completely envelops the cast metal base or core.

The lead covering takes a perfectly smooth slippery finish and the mandrel as a whole can be quickly and easily withdrawn from the molded article without any danger whatever of scaling or stripping the inner edges thereof, and the lead covering is not injuriously affected in the least by the chemical ingredients of the rubber compound and if anything is improved.

It will be understood, that in operation, a blank sheet of rubber is folded by proper mechanical appliances about the mandrel, and pressure applied thereto in order to properly shape the article, in this instance the battery jar.

An entire mandrel of lead would not have sufficient rigidity to withstand the pressures placed thereon and consequently a core of cast metal is needed to withstand these pressures, but having a rigid back of cast metal, the thin coating or covering of lead will not be indented or injured in the least by such pressure.

Consequently a thoroughly practical and efficient mandrel can be provided at a com-

paratively small cost and one which will not require constant care and treatment in order to maintain the same in efficient condition.

Having thus described my invention, what I claim is:—

A mandrel for forming rubber battery jars comprising an iron core having a base flange and a leaden envelope providing a surface unaffected by the chemicals of the rubber compound, said envelope covering the side and top walls of said core and extending down to and terminating at said base flange.

In testimony whereof, I hereunto affix my signature.

JAMES H. WAGENHORST.