

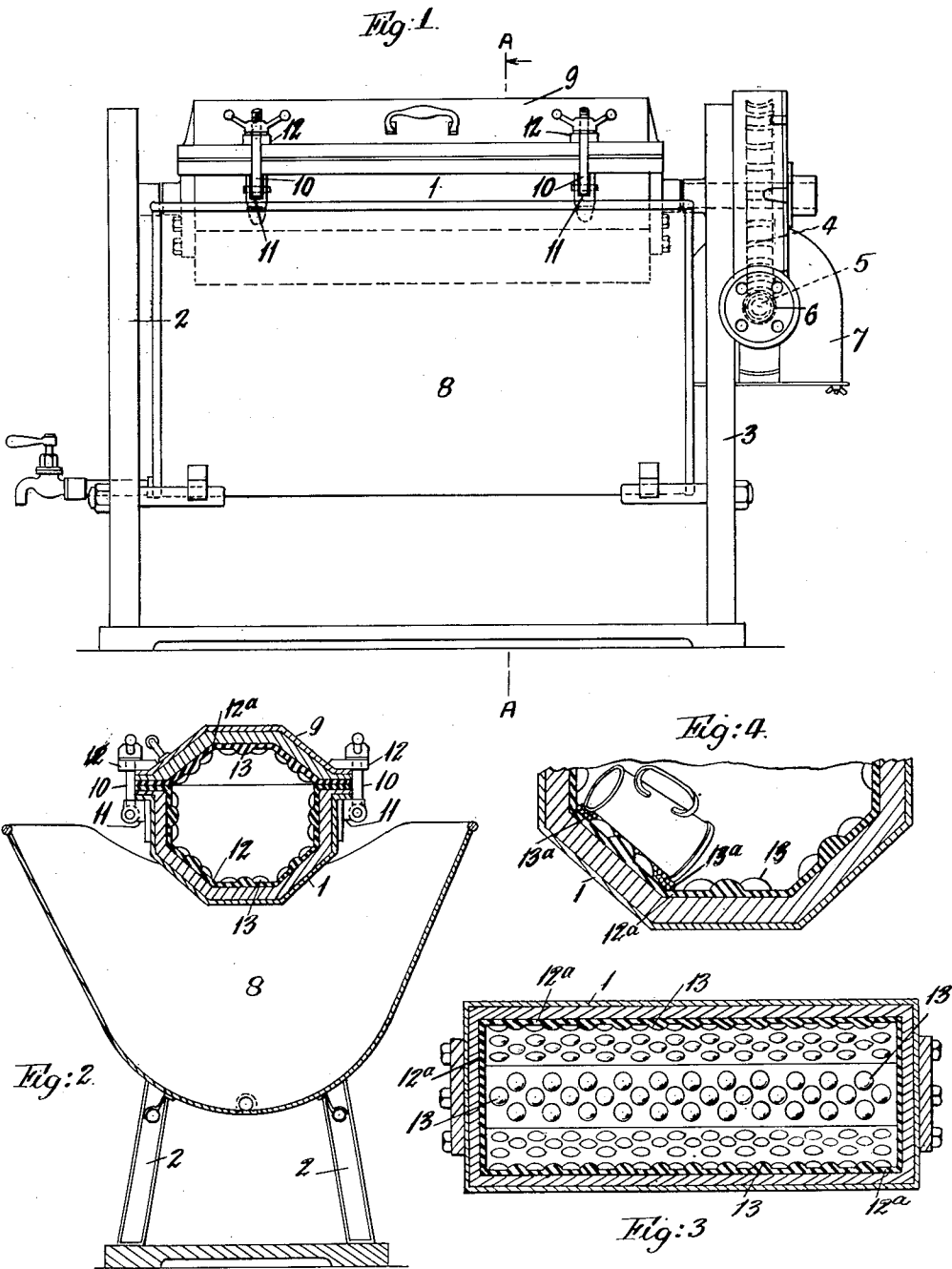
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APPARATUS FOR CLEANING AND POLISHING METAL WARE

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APPARATUS FOR CLEANING AND POLISHING METAL WARE

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This invention relates to apparatus for cleaning and polishing metal ware and it has for its object to provide improved apparatus of the kind in which the goods, whilst immersed in a liquid are subjected to a tumbling action in a closed rotary barrel or container more or less filled with metal balls.

In such devices, the interior of the barrel is usually lined with a soft material, india rubber for example, having a plain or flat surface. It is found in practice, however, that as the articles fall against the said lining they are apt to become indented or injured by sharp contact with balls which may be interposed between said lining and the said articles. This is particularly the case with hollow articles which may be wholly or partly filled with the balls.

It is the object of the present invention to overcome this objection, and to this end instead of employing a lining material having a plain or flat surface, the surface is provided with projections between which there are spaces or cavities adapted to receive the balls, the tops of the projections engaging the articles so that they do not impact upon the balls. The crowns or tops of the projections are of curved cross-sectional outline or are otherwise shaped so that they present a minimum surface at their outer ends thereby to prevent lodgement of the balls therein. Thus, for example, the lining may be provided with bosses or projections of semicircular cross-sectional outline, the said bosses or projections being appropriately pitched or spaced with regard to each other to provide the necessary spaces in which the balls may rest, so that it is not possible for the articles to impact thereon. By this means moreover any trapping or holding of the balls is prevented and they are free to escape to the main mass in the body of the receptacle.

Whilst for practical reasons it is more convenient to employ a lining having embossments or projections, such as aforesaid it is within the scope of the present invention to employ individual studs or projections of soft or resilient material which may be secured to the inner surfaces of the receptacle, or to provide the said surface with projections formed

of some hard or inelastic material having a coating or covering of said softer material.

In order that the invention may be the better understood, drawings are appended in which:—

Fig. 1 is a front elevation showing one embodiment of the invention.

Fig. 2 is a transverse section on line A—A Fig. 1.

Fig. 3 is a sectional plan of the container.

Fig. 4 is an enlarged sectional view showing certain details.

Referring to the accompanying drawings, 1 indicates the container provided at each end with trunnions supported in suitable bearings formed upon standards 2, 3, one of said trunnions being provided with a worm wheel 4 engaging a worm 5 upon a shaft 6 coupled to a motor 7.

8 indicates a trough disposed beneath the container 1 and running from end to end of same and designed to receive any liquid that may fall from the container when removing the articles therefrom or placing them therein. The receptacle is provided with a cover 9 secured thereto in a liquid-tight manner by means of throw over bolts 10 pivotally supported by brackets 11 secured to the body of the device, said bolts engaging slotted plates 12 secured to the cover 9.

12a indicates a lining which in the present instance is composed of india rubber and is applied to the interior longitudinal surfaces of the body of the receptacle 1 and the cover 9. The lining is provided with studs or projections 13 which in the example illustrated are of semicircular cross-sectional outline and are suitably spaced one from the other being arranged in rows upon lines running from end to end of the receptacle, the projections of one line being in staggered arrangement with respect to the projections of another line. 13a indicate the steel or other balls.

It will be understood that the body 1 is more or less filled with these balls together with a suitable liquid, soapy water for example. For the sake of clearness the balls and liquid are omitted from the drawings.

As the container 1 is rotated, the articles therein are tumbled about and subjected to

the action of the balls under which they are cleaned or polished and during the movement of the said articles, they are brought into a position closely adjacent the wall of the receptacle, and impact there-against with some degree of force. This is particularly the case where hollow articles are being treated, which become more or less filled with the balls and the liquid in which they are immersed, thereby adding considerably to their weight. Unless, therefore, provision is made to prevent this, the article may impact upon balls interposed between it and the wall of the receptacle with the result that the article may be dented.

As clearly shown, in Figure 4 however, such injury is prevented by the projections, upon the crowns of which, owing to their shape, there is no lodgement for the balls and consequently the article impacts against a surface of such nature as to avoid injury thereto, at the same time owing to the arrangement of the projections the balls are not imprisoned beneath the article but may readily escape.

I claim:

1. Apparatus for cleaning and polishing metal ware comprising a container, a closure for said container, means for rotating said container, a liquid within said container, balls immersed in said liquid, projections upon the inner surfaces of said container adapted to prevent the goods from impacting upon balls interposed between them and said surfaces.

2. Apparatus for cleaning and polishing metal ware comprising a container, a closure for said container, means for rotating said container, a liquid within said container, balls immersed in said liquid, projections upon the inner surfaces of said container adapted to prevent the goods from impacting upon balls interposed between them and said surfaces, the outer ends of said projections being so formed as to prevent lodgement of the balls thereon.

3. Apparatus for cleaning and polishing metal ware comprising a container, a closure for said container, means for rotating said container, a liquid within said container, balls immersed in said liquid, a lining upon the inner surfaces of said container, projections upon the outer surfaces of said lining adapted to prevent the goods from impacting upon balls interposed between them and said surfaces.

4. Apparatus for cleaning and polishing metal ware comprising a container, a closure for said container, means for rotating said container, a liquid within said container, balls immersed in said liquid, a lining upon the inner surfaces of said container, projections upon the outer surfaces of said lining adapted to prevent the goods from impacting upon balls interposed between them and said sur-

faces, the outer ends of said projections being so formed as to prevent lodgement of the balls thereon.

5. Apparatus for cleaning and polishing metal ware, comprising a container, a closure for said container, means for rotating said container, a liquid within said container, balls immersed in said liquid, a lining upon the inner surfaces of said container, projections of semicircular cross-sectional outline upon the outer surface of the lining adapted to prevent the goods from impacting upon balls interposed between them and said surfaces.

In testimony whereof I have affixed my signature.

HAROLD ERNEST BECKETT.