June 4, 1957 J. K. ALLEN 2,794,240

IRONER ROLL COVER

Filed Feb. 1, 1954

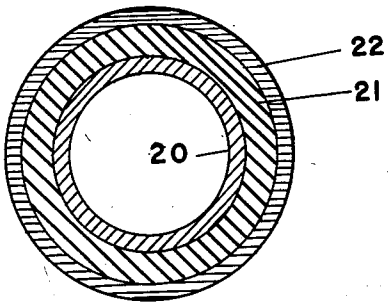


FIG 1

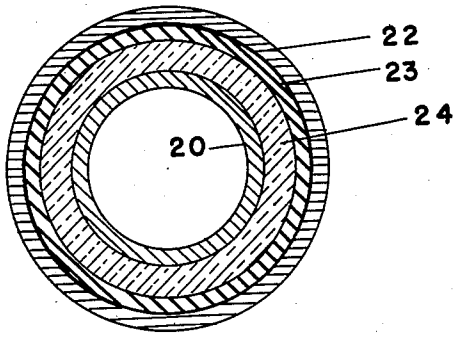


FIG 2

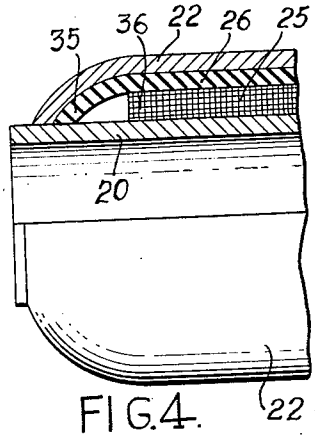


FIG. 4.

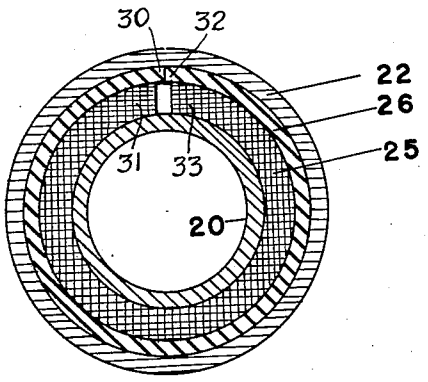


FIG 3

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IRONER ROLL COVER

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Application February 1, 1954, Serial No. 407,297

4 Claims. (Cl. 29—131)

The present invention relates to flatwork ironers and more particularly to protecting ironing roll padding and provides for certain improvements which make for simplicity, efficiency and prolonged extensive life.

One object of the invention is to prolong the useful life of paddings so as to avoid frequent shutdowns and to provide padding protection which is substantially immune to the deteriorating action of heat and moisture so that its useful life may be extended over a long period of rigorous use.

Another object of the invention is to provide padding for ironing rollers which will stand up against extremely high temperatures as much as from 500 to 600° F. while having a low compression set so that it will not pack down and that can be made with a low durometer number of from 40 to 50.

A further object of the invention is to provide a padding which will possess desirable softness while its tensile strength is high.

A still further object of the invention is to provide a new and improved ironing roll padding that will be impervious, heat resistant and which will be able to dissipate the moisture evolving from the pieces being ironed.

Still another object of the invention lies in improving the ironing roll padding disclosed in my earlier application Serial Number 361,379, filed June 12, 1953, now Patent No. 2,757,442, issued on August 7, 1956.

Other objects will become more apparent as the invention is more fully described.

For a clear understanding of the invention and its objects, reference is made to the accompanying drawing which, together with the following description form a disclosure of embodiments of the invention, while the appended claims emphasize the scope thereof.

In the drawings:

Figure 1 is a transverse section of an ironing roller provided with the padding of this invention;

Figure 2 is a transverse section of an ironing roller with a different padding;

Figure 3 is a transverse section of an ironing roller with still a different padding; and

Figure 4 is a fragmentary side view of an end of the ironing roller of Figure 3 with the upper half portion thereof in section.

While only the sections of the rollers of this invention have been shown, it should be understood that a plurality of these rollers are to be used in the customary ironing table or steam chest and that these rollers are exposed to relatively high steam pressures and temperatures.

These rolls **20** are preferably of metal. In Figure 1, the roll **20** is surrounded by a cylindrical sleeve **21** of synthetic rubber or plastic known in the trade as "silicone" or "silicone rubber." This envelope has been found to be highly suitable as a padding for flat work ironers and laundry presses. It will stand up under extremely high temperatures in the order of from 500 to 600° F. It has a low compression set and it will not pack down. It can be made with a low durometer number of from 40 to 50 and possesses a high and desirable softness. "Silicone rubber" is a synthetic material, the molecules of which are long chains of silicon-oxygen units with two methyl groups attached to each silicon atom. It retains its elasticity at temperatures as high as 300° C.; and stays elastic at temperatures as low as −50° C.; and is unaffected by ozone, corona, or ultraviolet light. At present "silicone rubber" is being manufactured by Dow Corning Corp., which uses "Silastic" to identify its product, and General Electric Co., which identifies its product by the trade name of G. E. Silicone Rubber.

A thin fabric covering **22** is circularly applied about the "silicone" sleeve **21**. In use, heat radiated from a source, such as a heated head of the type shown in Patent No. 2,639,519, granted to L. N. Polk et al., or the corresponding head shown in Fig. 4 of the patent to Irvine, No. 2,198,620, is absorbed by the silicone sleeve on the rotating rolls and since the covering **22** is thin, the moisture is readily removed from the ironed piece and dissipated.

In order to increase the tensile strength of the padding sleeve, while retaining the other above mentioned qualities thereof, the said sleeve, shown at **24** in Figure 2, is made of fibre-glass woven in the form of cloth or of some good grade of asbestos, and "Silicone" is applied at **23** as an exterior coating on the periphery of the sleeve **24**. In this manner, while the tensile strength of the roller is greatly increased, the quantity of "silicone" used is cut down. The thickness of the "silicone" coating should vary, preferably, from 1/8 to 3/16 of an inch.

As in Figure 1, the coated sleeve of Figure 2 is encased in the thin fabric covering **22**.

It has been found that certain butyl compounds can be produced which can be used on ironing rollers, are able to stand high pressures and temperatures and will not crack nor crust, nor get sticky or gummy at high temperatures.

Since "silicone" is relatively costly at the present time, the arrangement shown in Figure 2 and the above noted use of satisfactory butyl compounds, will avoid high cost of production.

As a further economy step, the use of steel wool either made from plain carbon steel or from stainless steel or other more corrosion resistant metal, is indicated for manufacturing the cylindrical sleeve. This construction is indicated in Figure 3.

The steel wool is first woven or knitted or braided as a mat. This mat is then shaped cylindrically as indicated at **25** and placed around the steel tube **20**. A cylindrical layer **26** of synthetic high-heat resisting rubber compound, such as is known in the trade as "Filastic," and "Silicone," surrounds the mat **25**. The thin fabric covering **22** is applied as previously around the layer **26**.

The steel wool serving as the bottom pad will provide still greater resiliency to the padded roll and at a good saving in manufacturing costs. In as much as the cylindrical layer **26** of artificial rubber is thoroughly waterproof and non-absorbent, no moisture from the wet articles being ironed can possibly get down through the rubber to the steel-wool mat.

The superimposed layers consisting of the top rubber and the inner steel-wool mat are secured together, a suitable technique being the gluing and/or stapling of the lead end **30** of the rubber layer **26** to the lead end **31** of the steel-wool mat **25**. The lead end **30** and the follower end **32** of the rubber layer **26** respectively overlap the lead end **31** and the follower end **33** of the steel-wool mat **25**. This overlap makes the roll ends smooth and desirable in that it prevents so-called "end abrasion." The end edges **35** of the top rubber layer are tapered and extend beyond

the end edges **36** of the bottom mat and enclose them against moisture infiltration.

It will be understood that while there have been described herein certain specific embodiments of my invention, it is not intended thereby to have it limited to or circumscribed by the specific details given in view of the fact that this invention is susceptible of various modifications and changes which come within the spirit of this disclosure and the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. The combination with a metallic ironer roll having a cylindrical surface, of a covering surrounding said roller in contact with said surface; said covering comprising an inner woven sleeve, an intermediate sleeve of silicone rubber applied to the outer surface of said inner sleeve, and a thin fabric sleeve covering said intermediate sleeve.

2. A combination of the type set forth in claim 1, in which the inner sleeve is woven from glass threads.

3. A combination of the type set forth in claim 1, in which the inner sleeve is woven from asbestos fibres.

4. A combination of the type set forth in claim 1 in which the inner sleeve is woven from metallic wool.

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