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PATENTS AND DESIGNS ACTS 1907 to 1946.

FORM NO.3.

DUPLICATE

COMPLETE SPECIFICATION.

Improvements in and relating to the packing of rubber and like substances.

WE, VETH'S PAPIERENZAKKEN FABRIEK N.V.
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do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:-

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This invention is concerned with improvements in or relating to the packing of natural rubber-like substances, such as plantation rubber, gutta percha, balata and the like in an unvulcanised condition.

The packing for rubber which has previously been most satisfactory has been three ply wood cases, although these have the disadvantage that splinters are often found in the rubber, and trouble is experienced in repacking the cases after taking samples.

After three ply cases became both expensive and difficult to obtain rubber was packed for instance in jute sacks or rushes and rotan mats and frequently the rubber was pressed into bales which were then packed in sacks formed from some of the sheets of rubber (vide INDIA RUBBER WORLD 101 (1940) No. 6).

This latter method however has the disadvantage that part of the rubber serves as the packing and thus loses its value wholly or partly by becoming soiled whilst the bales of rubber themselves due to temperature and pressure during transport in a ship's hold, and in spite of the use of talcum, tend to stick to each other and to other cargo thus causing considerable difficulties. (Vide Communication 153 Afdeling Handelsmuseum, Indisch Instituut Page 9-12).

Attempts were also made to use paper as a packing material for plantation rubber, but this appeared to stick strongly to the rubber and further the sacks were frequently torn during transport particularly after handling with docker's hooks.

It is an object of the present invention to provide an improved method of packing natural rubber and like

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substances which overcomes the above disadvantages in a simple and economical manner.

According to the present invention therefore there is provided a method of packing natural rubber like substances comprising forming sheets of such substances into blocks, surrounding said blocks in paper of which the side coming into contact with the block has a plucking or picking strength greater than the adhesion between the paper and the block and then packing said block in a further packing.

The said further packing may for instance be a paper sack having a plurality of walls or layers at least one of which is water tight, although if desired sacks or sheets of other material may be used for such further packing.

We prefer to form the sheets of rubber like substances into blocks of flat shape of approximately 70x 45 x 20 cm. and of a weight of about 50 kg. so that the use of hooks in dock handling will not be necessary thus avoiding damage to the packing.

If desired one or more sheets of paper having a plucking or picking strength greater than the adhesion between rubber and paper may be disposed between sheets of rubber before they are compressed into blocks so that the blocks may be subdivided into smaller quantities in a simple manner.

The method of packing rubber and like substances according to the invention has inter alia, the advantages that it is cheap, gives complete protection to the rubber against impurities, can be rapidly removed and does not present difficulties in loading, unloading, stapling, identification or sampling and furthermore packing of this

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kind can be used again thus producing a saving in expense.

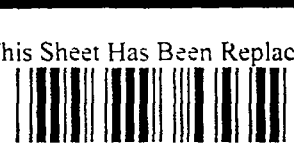
The manufacture of paper having a higher plucking strength than its adhesion to rubber may be carried out by rendering the paper parchment like for example with the aid of sulphuric acid, zinc, chloride and the like or by coating the paper with a thin layer of colloidal cellulose. If desired however, the paper surface may be treated with carbohydrates or derivatives thereof, such as dextrin or starch, followed preferably by warm callendering or layers of cellulose ethers or esters may be coated thereon. We prefer however to treat the paper with proteins such as gelatin, glue, gum arabic, agar-agar, carraghene moss, pectin or the like after which hardening may be effected by means for example of alum, formaldehyde, hexamethylene tetramine and the like.

In order that the invention may be well understood one preferred example will now be described by way of illustration only.

34 large standard rubber sheets are folded double, laid one upon the other and pressed into a block of rubber of about 50.8 Kg. weight the dimensions being about 68 x 45 x 21 cms. Including a five walled paper container the cubic capacity is approximately 66 litres which represents a saving of space compared with a three-ply wood case for a similar quantity of rubber of about 7%.

The block or bale of rubber so formed is then covered with a sheet of kraft paper, the surface of which is prepared with protein (gelatine) which has beeen hardened with formaldehyde. This sheet of paper is preferably secured at a number of places with adhesive paper. The block or bale of rubber surrounded with impregnated kraft paper can

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then be enclosed in a four walled Bates sack the outer wall of which consists of kraft paper of 90 gms. per m^2 weight, the second wall being of watertight duckraft of 150 gms per m^2 and the third and fourth walls being of kraft paper of 72 gms per m^2 weight. The lower end of this sack is sewn up and the upper part is closed for example by means of 9 clasps or cramps which may be fixed by means of hand tongs. The upper end when so closed can then be stuck down to the sack by means of a paper strip.

The water tight wall of the sack may be rendered watertight for example with bitumen, rubber, artificiel resins or otherwise.

When it is desired to open these sacks the clasps are left in place and the thread may be withdrawn from the sewn end, The rubber blocks surrounded by impregnated paper of desired plucking or picking strength can then be slid from the sack, whereupon the paper can be removed without any of the paper or its impregnating agent remaining on or in the rubber.

When it is desired to sample the rubber which is usually done with about 10% of the blocks, the packing is again opened in a similar manner and thereafter the paper is replaced around the block which is reinserted into the sack, the bottom of which can then be closed with further clasps or cramps. When the sacks are opened a second time a strip with the clasps therein may be completely cut away in order to prevent loose clasps getting into the rubber.

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* C L M S *

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is :-

1. A method of packing natural rubber like substances comprising forming sheets of such substances into blocks, surrounding said blocks in paper of which the side coming into contact with the block has a plucking or picking strength greater than the adhesion between the paper and the block and then packing said block in a further packing.

2. A method as claimed in claim 1 in which said block is packed in one or more paper sacks having a plurality of walls at least one of which is water tight.

3. A method as claimed in either of claims 1 or 2 in which one or more sheets of paper having a greater plucking or picking strength than the adhesion between the paper and rubber are placed between adjacent sheets of rubber before said blocks are formed.

4. A method as claimed in any of claims 1 to 3 in which said sheets are pressed into blocks of about 70 x 45 x 20 cm. and weighing about 50 kgs.

5. A method as claimed in any of the preceding claims in which said blocks after being surrounded in paper are packed in paper sacks having a plurality of layers one end of which sacks are then closed by being sewn up.

6. A method as claimed in claim 5 in which the other end of said sacks are closed by clasps or cramps.

7. A method of packing natural rubber like substances in unvulcanised condition substantially as described.

* C L M S *

8. Blocks or bales of natural rubber-like substances when packed by a method as claimed in any of the preceding claims.

Dated this ~~25th~~ 9th day of ~~April~~ May 1949.

FOR THE APPLICANTS,

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