

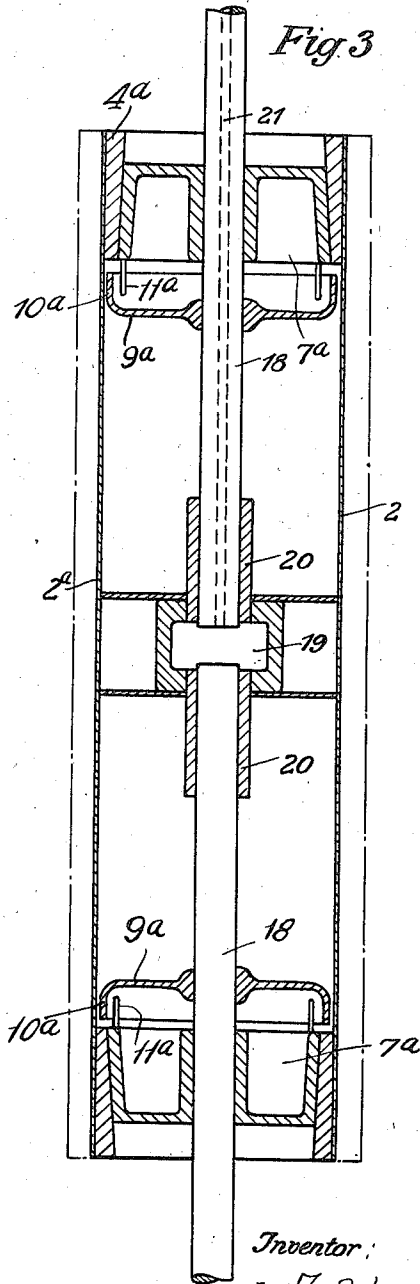
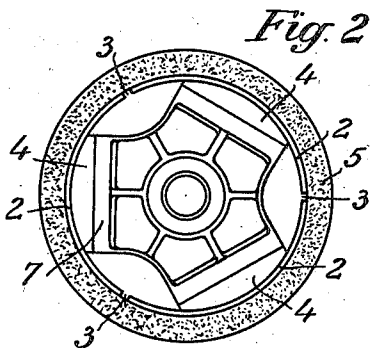
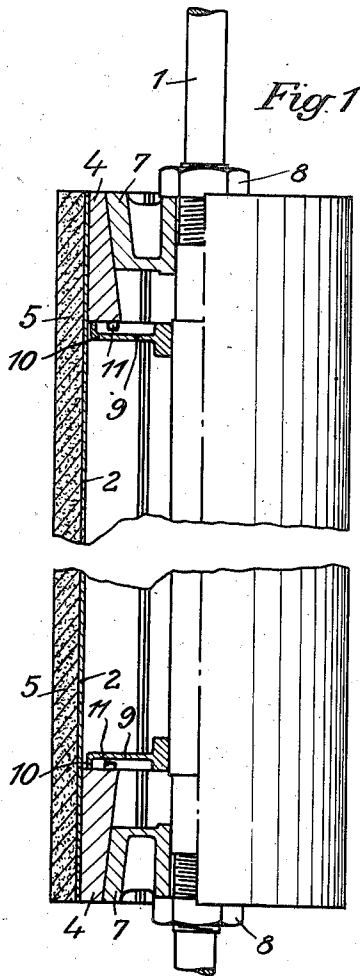
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PRESSING OR TREATMENT ROLLER

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PRESSING OR TREATMENT ROLLER

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4 Claims. (Cl. 68—33)

This invention relates to a pressing or treatment roller having a facing or covering which may be exchanged as desired, wherein the roller jacket is capable of adjustment by the use of segmental portions and surfaces which are situated below the jacket and are disposed obliquely to the axis of the roller.

The segments hitherto employed in the known type of roller are relatively complicated machine elements, so that the same may be produced and worked upon only with difficulty. Beyond this the entire roller is made comparatively heavy by segments of this nature.

Now it has already been proposed to provide a lighter form of construction by the use of a slotted jacket to the roller, there being furnished at the ends of the sheet metal jacket rings having conical faces, which are capable of adjustment by means of conical portions adapted to be screwed in. This arrangement, however, in the known form of embodiment does not permit of a satisfactory engagement between the conical faces, so that a proper readjustment of the roller is also impossible.

Further, it has also been proposed to divide the roller jacket into segments. These segments, however, are not capable of a simultaneous adjustment in common, and moreover, being castings, they have a particular sectional form which is relatively difficult to produce.

The disadvantages above referred to are obviated in accordance with the invention by the fact that the tightening members bearing the inclined faces are constructed as wedge-shaped segments seated at the ends of the jacket sections. These segments are capable of adjustment in common by an additional tightening member shiftable along the roller axis.

The invention is illustrated by way of example in the accompanying drawing, in which

Fig. 1 is a view of the pressing roller, partly in longitudinal section.

Fig. 2 is an end view of the roller.

Fig. 3 shows an additional form of embodiment of the roller.

With reference to the drawing, 1 is the shaft of the roller, on which there is mounted in the manner described later the jacket comprising the single sections 2. In the particular form of embodiment illustrated there are provided three sections 2, as shown in Fig. 2. Between the sections 2 there is a certain intermediate spacing 3, so that the sections may be approached towards each other in the peripheral direction. At the two ends of each section 2 there is provided a wedge-like

segment 4, which constitutes a tightening member. About the roller there is provided a facing or covering of suitable material, such as rubber, rubber composition, felt, papier mâché, or the like. If for example the covering is composed of rubber sponge, the latter may be vulcanized on to a base composed of linen or the like. If the covering, however, is of sufficient thickness, this base may be omitted. As shown in Fig. 2, the covering may form a hollow seamless cylinder, and may be applied to or removed from the core of the roller as a whole.

On the shaft 1 of the roller there are mounted at either end shiftable tightening members 7, which may be pressed in such fashion by means of nuts 8 against the inclined faces of the segments 4 that an increase takes place in the diameter of the roller jacket constituted by the sections 2.

To prevent the sections 2 from falling apart upon removal of the covering 5 there is fitted on the shaft 1 towards either end of the roller a disk 9 having an angular flange 10. Into the space confined by this cup-like structure there project abutments or pins 11 which, as shown in Fig. 1, are mounted on the members 4. The angular flange 10, against which the pins 11 rest when the covering or facing 5 is removed, hold the sections of the roller to such extent together that the same are unable to fall apart. They also prevent a displacement in the longitudinal direction.

The covering or facing 5 may be exchanged as follows:

After release of the two nuts 8 the members 7 are withdrawn to such extent that the clamping effect against the segments 4 is removed. The jacket sections 2 located on the segments are now able to move radially inwards, the diameter of the roller thus being decreased. The covering 5 may then be removed quite readily from the roller and replaced by another covering. The nuts are thereupon again tightened, which exerts pressure on the sections 2 and thus causes an increase in the diameter of the jacket. As shown by the drawing, slight differences in the internal diameter of the covering are readily compensated, as the tightening movement of the sections may be made of corresponding extent without the least difficulty.

In the form of embodiment according to Fig. 3 the tightening members 7a may be mounted on rods 18. These rods project into a cylinder 19 arranged in the centre of the core of the roller, and are guided in the cylinder abutments 20. The rods in this manner form pistons. One of the rods (in the form of embodiment according

to Fig. 3 the upper one) possesses a central passage 21 for the supply of a pressure agent to the cylinder 19. By the supply of pressure agent to the cylinder the rods are forced outwards in the abutments 20, taking with them the parts 7a and thus causing the covering to be tensioned about the roller.

As in Fig. 2, the means for preventing the sections from falling apart consists of disks 9a fitted on the shaft 18 at either end, which disks have flanges 10a on their periphery. Projections 11a attached to the wedge-like segment 4a project into the cup-like structure formed by the disks with their flanges and thus prevent the sections 2a from falling apart.

The arrangement according to the invention also possesses the particular advantage that a movement of the covering in relation to the core or jacket is impossible in itself, or if tending to occur may readily be prevented by tightening the nuts 8.

As already stated, the covering may be composed of various materials, and in the particular example quoted is assumed to be of rubber or rubber sponge. It is however, also possible to employ coverings or facings of felt, composition or other materials, these coverings also being made in the manner described so as to permit of their ready replacement.

It will be understood that no limitation is made to the particular forms of embodiment described in the above, which have been quoted merely by way of example, and that numerous modifications are quite possible within the meaning of the above description and the annexed claims without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent is:

1. In a pressing or treatment roller, a shaft, a roller jacket mounted on the said shaft and comprising a plurality of sections, wedge-like segments the inner faces of which are flat and inclined to the axis of said shaft mounted on the inner faces of the said sections towards either end of the said jacket, members having flat outer faces, and on the said shaft adapted to engage with the inclined faces of the said segments, an outer covering about the said jacket, and means for pressing the said members on the said shaft against the said segments for the purpose of forcing the said sections apart into close contact with the said covering.

2. In a pressing or treatment roller, a shaft, a roller jacket mounted on the said shaft and comprising a plurality of sections, wedge-like segments the inner faces of which are flat and inclined to the axis of said shaft mounted on the inner faces of the said sections towards either end of the said jacket, members having flat outer faces, and adapted to engage with the inclined faces of the said segments, an outer covering about the said jacket, and means for applying a pressure agent to the said members for pressing the said members against the said segments for the purpose of forcing the said sections apart into close contact with the said covering.

3. In a pressing or treatment roller, a shaft, a roller jacket mounted on the said shaft and comprising a plurality of sections, wedge-like segments the inner faces of which are flat and inclined to the axis of said shaft mounted on the inner faces of the said sections towards either end of the said jacket, a cylinder within the said jacket, rods extending longitudinally of the said jacket into the said cylinder, members mounted on the said rods having flat outer faces and adapted to engage with the inclined faces of the said segments, an outer covering about the said jacket, and means for applying a pressure agent to the said cylinder to force the said rods outwards and move the said members thereon against the said segments for the purpose of forcing the said sections apart into close contact with the said covering.

4. In a pressing or treatment roller, a shaft, a roller jacket mounted on the said shaft and comprising a plurality of sections, wedge-like segments the inner faces of which are flat and inclined to the axis of said shaft mounted on the inner faces of the said sections towards either end of the said jacket, members having flat outer faces, and adapted to engage with the inclined faces of the said segments, an outer covering about the said jacket, means for pressing the said members against the said segments for the purpose of forcing the said sections apart into close contact with the said covering, and means comprising disks mounted on the said shaft towards either end of the said jacket, angular flanges on the periphery of said disks, and abutments on the said segments adapted to engage with the said angular flanges for preventing the said sections from falling apart upon removal of the said covering.

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