Jan. 27, 1931. G. H. LEWIS 1,790,010

IMMERSING APPARATUS

Filed Sept. 28, 1928

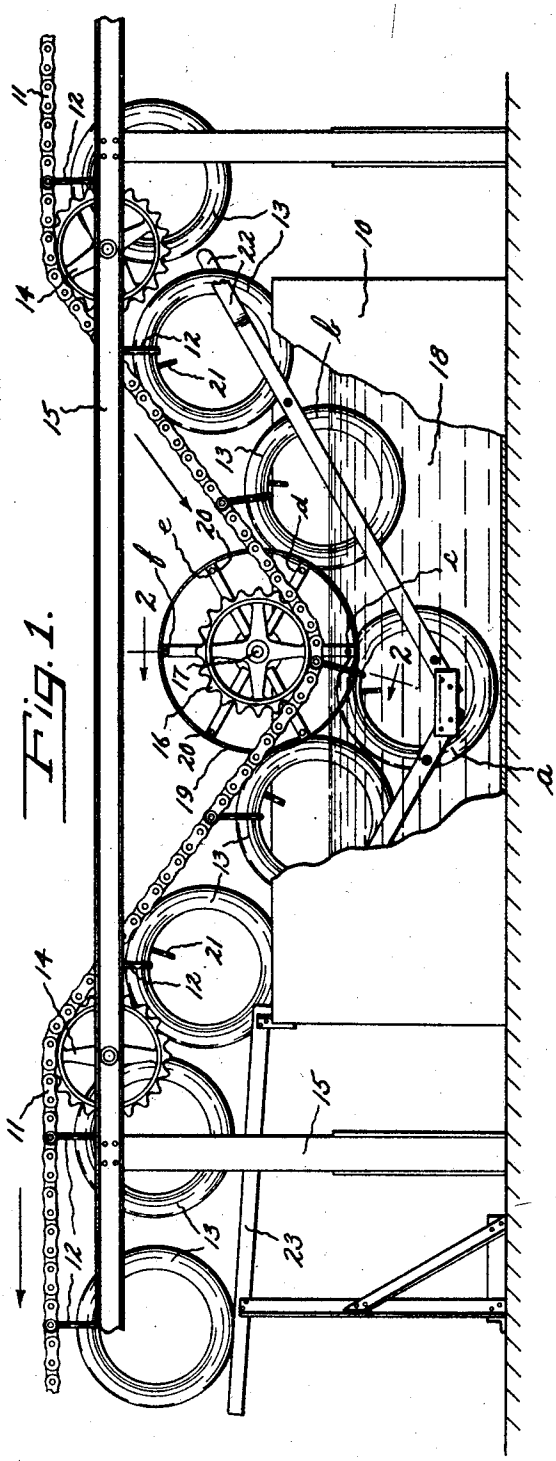


Fig. 1.

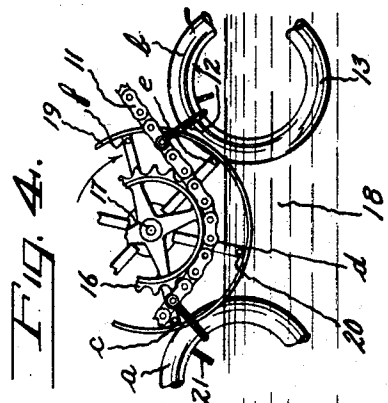


Fig. 4.

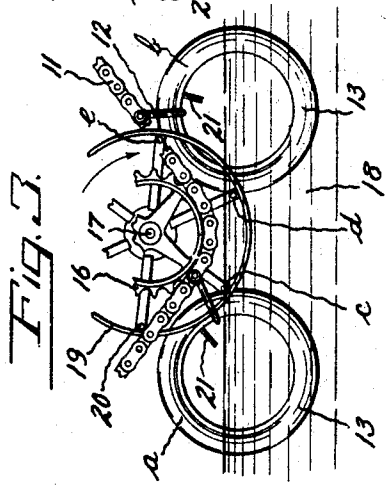


Fig. 3.

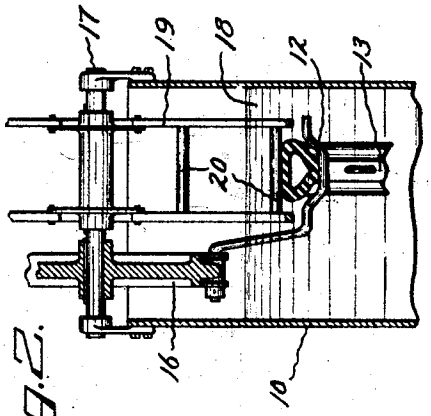


Fig. 2.

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UNITED STATES PATENT OFFICE

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IMMERSING APPARATUS

Application filed September 28, 1928. Serial No. 309,088.

In the manufacture of pneumatic tire casings it has been found desirable to coat the air bag upon which the casing is cured with a liquid preparation such as a mixture of latex and powdered mica for lengthening the life of the bag and to simplify its removal from the casing. In coating the bag an operator usually dips each bag into a pan or shallow tub of this liquid and hangs it upon a hook where the surplus liquid may drip off. This is a slow and expensive method of procedure and it is an object of my invention to provide an immersing apparatus that will dip the bags into the liquid as they are carried along a conveyor.

Referring to the drawings,

Fig. 1 is a side view, partially broken away, of an apparatus embodying my invention;

Fig. 2 is a view taken substantially on line 2—2 of Fig. 1; and

Figs. 3 and 4 are detail views showing steps of the operation of the apparatus.

In the drawings I have shown the immersing apparatus mounted on a tank 10 beneath a conveyor 11 which may be used for carrying air bags from freshly cured tire casings to casings about to receive air bags preparatory to curing. This conveyor 11 has a series of freely suspended hooks 12 over which air bags 13 may be hung.

The conveyor is carried over sprockets 14 on a frame 15 and is inclined into the tank 10 by means of another sprocket 16 mounted on a shaft 17 on the tank. The tank is partially filled with a liquid 18 for coating the bags 13.

Unless means are provided for holding the bags 13 firmly on the hooks 12 they would be buoyed up off the hooks by the liquid. To overcome this difficulty I have provided on the shaft 17 a paddle wheel 19 which has a series of bars 20 adapted to compress the bags slightly between the bars and the hooks 12. The slight pressure on the bags 13 serves a double purpose; besides holding the bags on the hooks 12 as the ends of the hooks are drawn through the liquid, the pressure also causes a slight exhaust of air from the bags while they are being carried through the liquid and, providing the stems 21 of the bags are located near the hooks 12, will thus prevent any of the liquid 18 from getting inside the bags.

A pair of bars 22 at the incoming end of the tank 10 guides bags straight into the paddle wheel 19 while an inclined tray 23 at the other end of the tank catches the drippings of liquid from the bags and allows it to run back into the tank.

For ease in following the operation of the paddle wheel 19 I have lettered the bags 13 being controlled by the wheels *a* and *b*, and the controlling bars 20 of the wheels *c*, *d*, *e* and *f*. With but a short movement of the conveyor 11 from the position shown in Fig. 1 to that of Fig. 3, the bag *a* will snap quickly up out of the liquid 18 due to its buoyancy and its release from the bar *c*. At the same time bag *b* is being acted upon by bars *d* and *e*. Additional movement of the conveyor will cause the bag *b* to be buoyed by the liquid (Fig. 4) and held only by bar *e*. Still further movement will bring the bag *b* under the action of bar *f* which will cause the pressure holding the bags tightly on their hooks.

Having thus described my invention, I claim:

1. A device for treating annular air bags which comprises a tank adapted to hold a treating liquid, a conveyor, means to guide the conveyor into and from proximity with the surface of the liquid, spaced bag supporting hooks freely suspended from the conveyor and adapted to carry the bags supported thereon through the liquid, means to engage the outer periphery of the bags adjacent the hooks as the bags enter the liquid to insure submergence of the bags, said means being operative to swing the hooks rearwardly as the bags enter the liquid and forwardly as the bags leave the liquid, and guides to maintain the bags in vertical position during their passage through the liquid.

2. A device for treating annular air bags which comprises a tank adapted to hold a treating liquid, a chain conveyor, a sprocket positioned to depress a section of the conveyor into proximity to the surface of the

liquid, spaced bag supporting hooks freely suspended from the conveyor and adapted to carry the bags supported thereon through the liquid, a cylindrical frame rotatable with said sprocket, said frame being of larger diameter than the sprocket and provided with transverse bars adapted to engage the outer periphery of the bags adjacent the hooks as the bags enter the liquid to insure submergence of the bags, said bars being operative to swing the hooks rearwardly, as the bags enter the liquid, to delay the entrance of the bags into the liquid and to swing the hooks forwardly as the bags leave the liquid to accelerate the removal of the bags from the liquid, and guides to maintain the bags in vertical position during their passage through the liquid.

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