

(No Model.)

C. H. NORTH.

PROCESS OF MANUFACTURING PISTON ROD PACKING.

No. 506,857.

Patented Oct. 17, 1893.

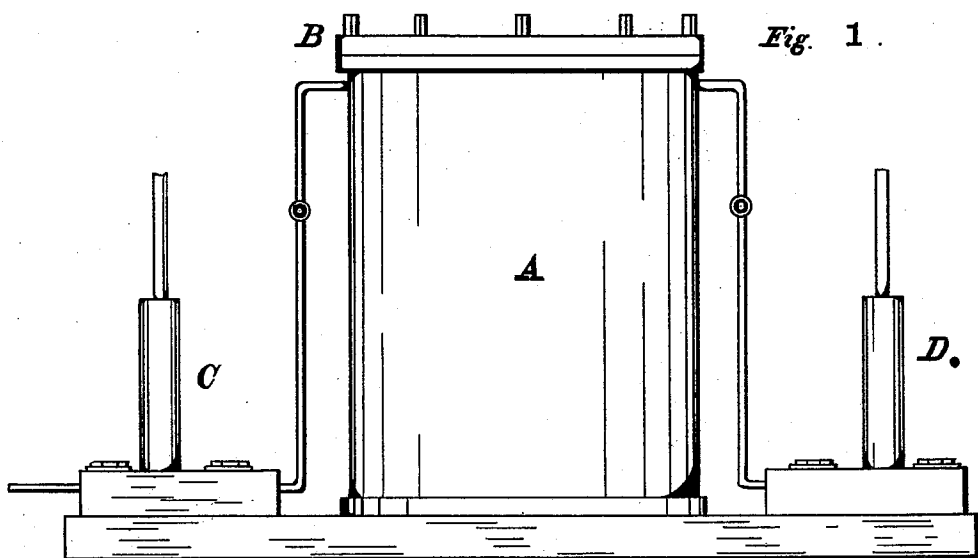


Fig. 2.

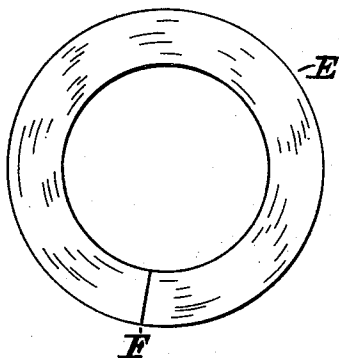


Fig. 3

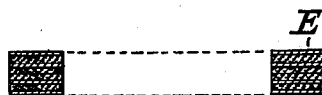
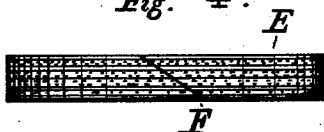


Fig. 4.



Witness

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PROCESS OF MANUFACTURING PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 506,857, dated October 17, 1893.

Application filed August 1, 1891. Serial No. 401,360. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. NORTH, a citizen of the United States, residing at Palmyra, in the county of Wayne, in the State of New York, have invented certain Improvements in Processes of Manufacturing Piston-Rod Packing, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improved process of manufacturing piston-rod packing, which process is fully described in the following specification,—the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings representing apparatus adapted to carrying my improved process into effect,—Figure 1 is a side elevation of the tank and the vacuum and compression pumps. Fig. 2 is a side-view of the packing. Fig. 3 is a transverse section of the same. Fig. 4 is an edge view of the same.

In the manufacture of packing in accordance with my improved process, I employ a strong tank or vessel A, provided with a removable lid or cover B, a vacuum pump C, and a compression pump D. The packing,—which preferably consists of rings cut from a fabric composed of alternate layers of india-rubber and cloth, as represented in Figs. 2, 3 and 4,—is placed in the tank in a liquid consisting of any suitable oil holding a lubricating material, such as pulverized soapstone or black-lead, in suspension, and, the tank being closed, a vacuum is formed therein above the oil by the pump C,—this operation withdrawing the air from the fabric,—after which the oil and lubricant are caused to thoroughly impregnate the packing by pressure produced within the tank by the pump D. The pumps are connected with the tank by suitable pipes provided with valves. Any ordinary style of pump may be employed, and the same pump may be connected so as to act either as a vacuum or compression pump. The lid B is secured by bolts or other suitable devices. The oil used is preferably a petroleum lubricating oil of good quality. The proportion of the lubricating material

should be as much as the oil used will hold in suspension. The air will be thoroughly extracted from the packing in five or ten minutes, although the packing may be subjected to it for a longer time. The same length of time will answer for the compression, although I prefer to prolong it for upward of half an hour. The process is carried on at the ordinary temperature. The packing may be subjected to the vacuum in the air,—the liquid being let into the tank subsequently, but without destroying the vacuum. The pressure may be obtained by forcing air into the tank, or by pumping oil or other suitable liquid into it. The amount of pressure is not material, although I prefer to use three or four atmospheres. The rings of packing are cut across diagonally, as indicated at F, Figs. 2 and 4, so as to permit of their being placed on the piston-rod.

By my improved process I am enabled to impregnate the packing with the oil and lubricant much more thoroughly than can be done by any other process with which I am acquainted, and the packing so made is of extraordinary durability. My improved process may however be employed on packing of kinds different from that herein shown.

I am aware that thickened oil and paper have been subjected to pressure after an air pump had been employed to exhaust air from the pipes, and that metallic oxides or driers have been introduced into paper pulp in the course of its manufacture and that dried molded articles have been indurated by treating them with a mixture of colophony and asphalt heated and under pressure, and such matter is not of my invention.

It is characteristic of the present improvement that a lubricating oil is made the vehicle of a lubricating powder, the articles such as herein specified being charged in the manner set forth with the powdered lubricant in a large quantity preferably only limited to that which the oil will hold in suspension.

I claim—

1. The herein described process of manufacturing piston-rod packing, consisting in exhausting the air from a closed vessel containing the packing immersed in oil having

powdered lubricating material in suspension therein, and in subsequently increasing the pressure within the vessel above the normal atmospheric pressure, whereby the liquid is
5 caused to permeate the packing, and carry into its interstices the solid lubricating material substantially as and for the purposes set forth.

2. The herein described process of manu-
10 facturing piston-rod packing, consisting in exhausting the air from a closed vessel containing the packing, in admitting to the said ves-

sel oil having powdered lubricating material in suspension therein, and in subsequently increasing the pressure within the vessel above
- 5 the normal atmospheric pressure, whereby the liquid lubricant is caused to permeate the packing, and carry into its interstices the solid lubricant substantially as and for the purposes set forth.

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