(No Model.)

G. H. CRANDALL.

PISTON ROD PACKING.

No. 394,156. Patented Dec. 11, 1888.

Fig. 1.

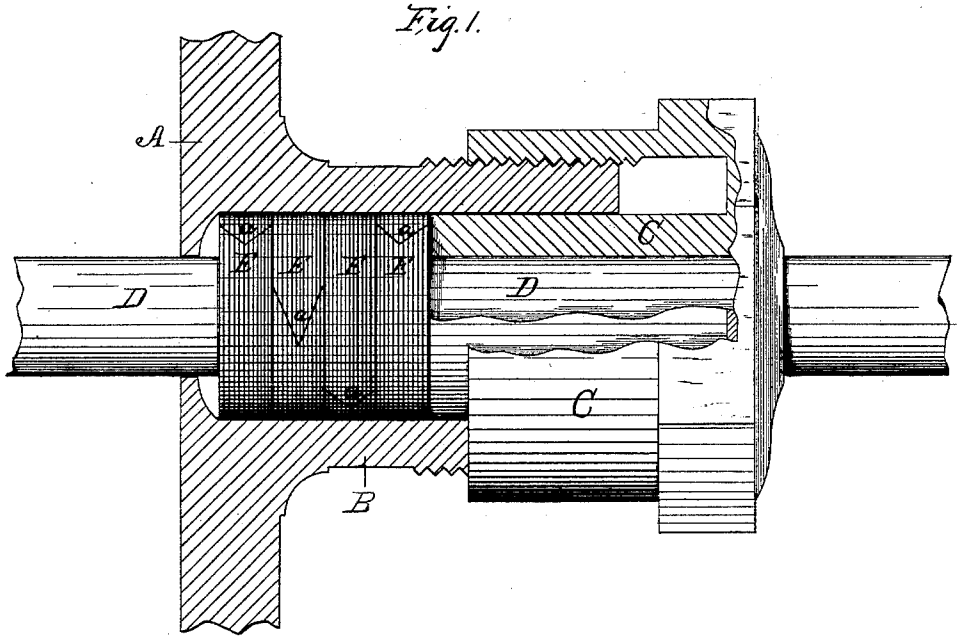


Fig. 2.

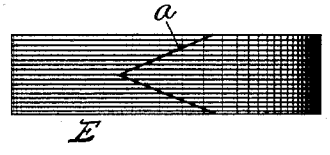


Fig. 3.

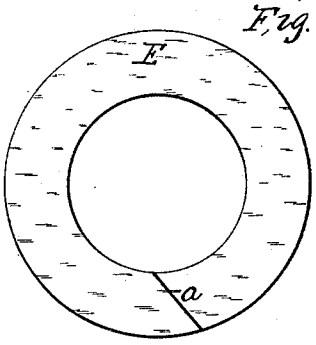
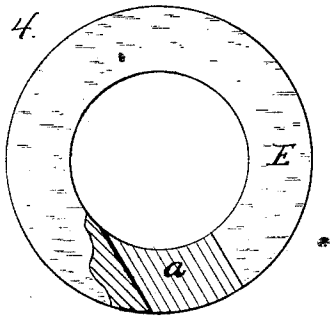


Fig. 4.



Attest:
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UNITED STATES PATENT OFFICE.

GEORGE H. CRANDALL, OF PALMYRA, NEW YORK, ASSIGNOR OF ONE-HALF TO HENRY A. CHASE, OF SAME PLACE.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 394,156, dated December 11, 1888.

Application filed November 14, 1887. Serial No. 255,120. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. CRANDALL, of Palmyra, in the county of Wayne and State of New York, have invented a new and useful Improvement in Piston-Rod Packings, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention is a new process relating to the manufacture of packing-rings for piston-rods, composed of alternate layers of india-rubber and some fabric—as cloth, oil, and soapstone—being forced into the interstices of the substances, to the exclusion of air contained therein, by a pressure sufficient to cause the oil and particles of soapstone to enter and occupy said spaces, the soapstone being applied to said rings before and after their treatment under pressure.

The invention is hereinafter more fully described, and particularly pointed out in the claim.

Referring to the drawings, Figure 1 shows a stuffing-box in the head of a cylinder, with my improved packing-rings in place, and Figs. 2, 3, and 4, different views of the packing-ring.

Referring to the parts shown in the drawings, A is a part of the cylinder-head; B, the stuffing-box, in which to receive the rings of packing; C, the screw-cap or gland for the stuffing-box; and D, the piston-rod, all substantially of common construction.

E are the rings of packing formed from sheets composed of alternate thin layers of cloth and india-rubber, such as are sold in the market, the rings being constructed to have external and internal diameters to meet the walls of the stuffing-box and the piston-rod, respectively. These rings are divided at their sides, as at *a*, so that they may be placed upon the rod, as shown. After the rings are thus formed they are covered with pulverized soapstone by being tumbled in a close receptacle containing that substance and then placed in a strong iron receptacle containing oil and submitted to a pressure by means of a force-pump or other suitable device. This causes the oil and soapstone to be thoroughly forced into the minute cavities among the fibers of the cloth and india-rubber formerly occupied by air, the latter being driven out. The inflow of the oil into the interstices of the cloth and india-rubber under the pressure brought upon the rings is rapid and the particles of soapstone are carried in with it, the whole operation occupying but a few minutes' time. After the rings are thus treated, they are again tumbled with powdered soapstone to give them a final coating and polish.

The oil is employed cold or at the temperature of the room occupied by the workmen, as it is found that hot or boiling oil rots the india-rubber and destroys its elasticity, rendering it waxy in nature rather than elastic.

What I claim as my invention is—

The process of producing packing-rings for piston-rods herein described, said rings being formed of alternate layers of india-rubber and cloth and divided at their sides, the rings being first tumbled with pulverized soapstone, then submitted to cold oil under pressure, and finally again tumbled with soapstone, as and for the purpose set forth.

GEO. H. CRANDALL.

Witnesses:
H. A. CHASE,
GEO. HEBARD.