

(No Model.)

C. A. CLEVELAND.

STEAM PACKING.

No. 360,560.

Patented Apr. 5, 1887.

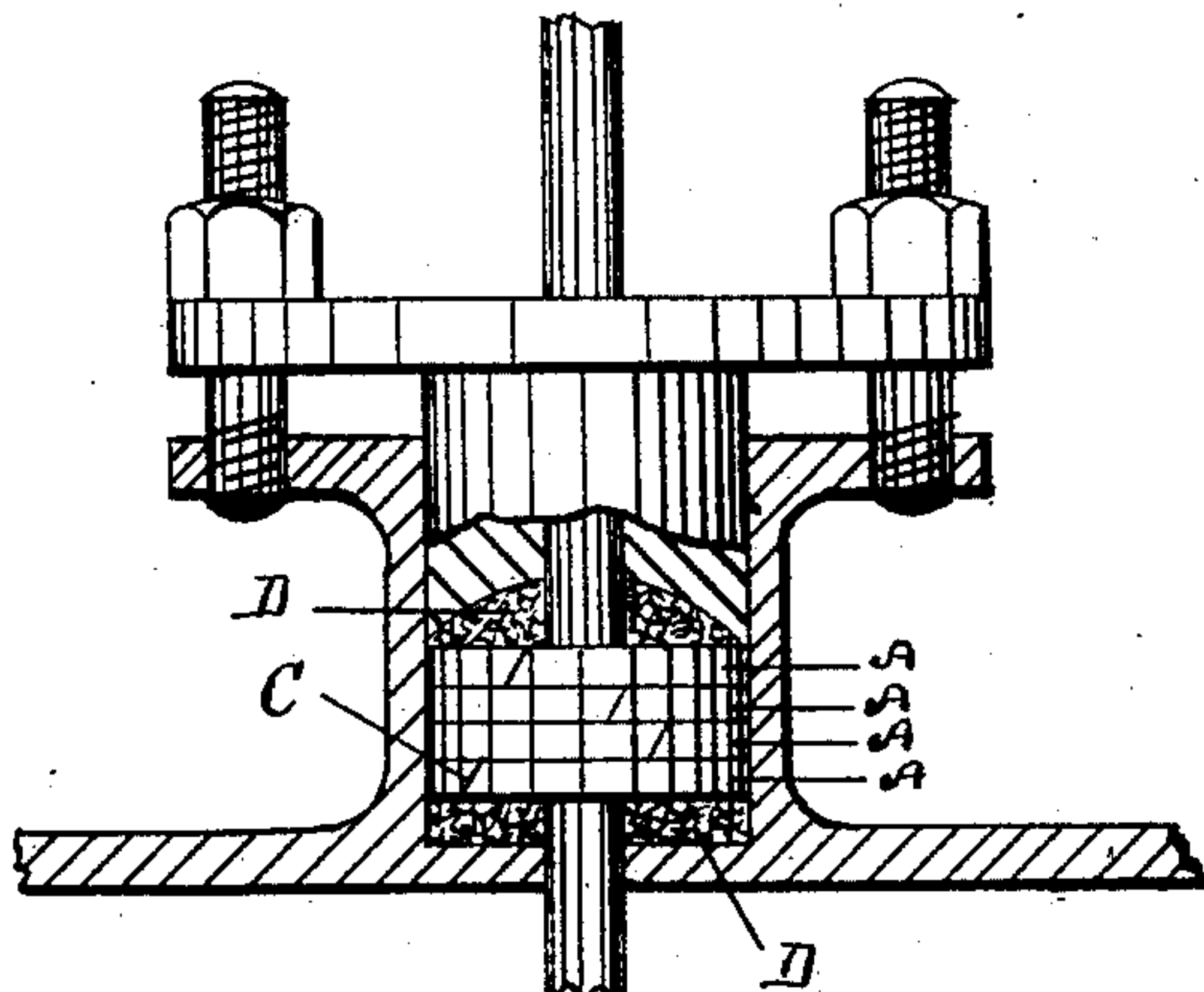


FIG. 1 -

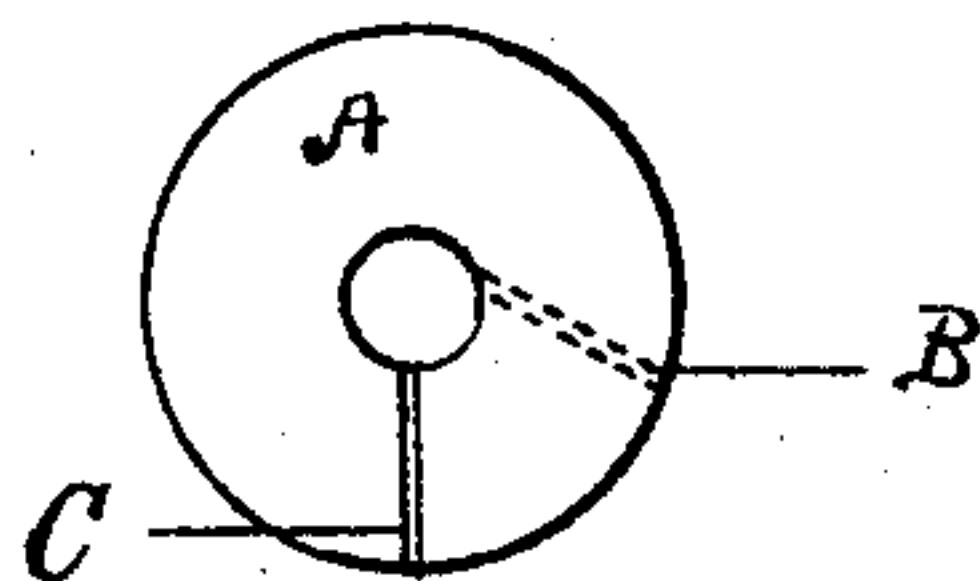


FIG. 2 -

Witnesses.

William Clark  
S. M. Lomell

Inventor.

Charles A. Cleveland  
By Rufus B. Fowler  
Atty.

# UNITED STATES PATENT OFFICE.

CHARLES A. CLEVELAND, OF WORCESTER, MASSACHUSETTS.

## STEAM-PACKING.

SPECIFICATION forming part of Letters Patent No. 360,560, dated April 5, 1887.

Application filed January 26, 1886. Serial No. 189,856. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. CLEVELAND, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Steam-Packing; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable those skilled in the art to which it appertains to make and use the same.

In the accompanying drawings, Figure 1 is a sectional view of a packing-box, showing the packing contained therein and placed around the rod to illustrate its use, and Fig. 2 is a plan view of one of the washers A.

The object of my invention is to provide a steam-packing for piston-rods, valve-stems, and analogous uses, which shall be cheap, durable, and efficient in preventing the passage of steam, and at the same time not create too much friction upon the moving parts, and which shall resist the injurious action of steam and heat.

My invention is carried into effect as follows: I employ some textile or fibrous material which has been treated to a preparation of rubber—such as is used in the manufacture of what is commonly known as “rubber belting”—which I usually prefer to use, as it is always easily and readily obtained. This rubber belting is cut into washers A, to fit tightly the rod to be packed, and also to fill closely the stuffing-box. These washers I cut apart, so they may be placed over the rod, making the cut ends either beveled, as at B, or cut at right angles, as at C. I prepare a bath of some oleaginous material, preferably of tallow, which is strained to rid it of all gritty impurities, and I add, in a finely-pulverized form, and in the following proportions—viz., to each five pounds of tallow from two and one-half to three and one-half pounds of plumbago, six to ten ounces of steatite or soapstone, and from two to six ounces of mica. The bath is then heated over a slow fire at that state of ebullition known as “simmering” for about one-half hour. Care should be taken that the mixture does not burn, and that it is below the boiling-point when the washers are immersed. The washers, previously prepared as described, are immersed in the heated mixture until well saturated, when they may be packed in the stuffing-box, care being taken to break joints or to bring the cut portion of each washer opposite the whole section of the adjacent wash-

ers. I also deem it advisable to place some fibrous material—such as hemp—at each side of the washers, or at the bottom of the stuffing-box, and also immediately beneath the “gland,” as shown at D, Fig. 1.

The several proportions in which the ingredients should be used may be greatly varied; but I deem the proportions above named preferable.

I am aware that earthy or mineral substances—such as I have herein mentioned—have been used as ingredients in steam-packing; also, that rubber has been so used, both as vulcanized rubber and also in a non-vulcanized state, with sulphur as an ingredient, by which it has been vulcanized through the action of the heat to which it is necessarily subjected.

I am also aware that a steam-packing was made the subject of Letters Patent No. 334,579, dated January 19, 1886, in which washers were cut from alternate layers of india-rubber and cloth and boiled in oil with plumbago held in suspension. Such I do not claim, it being an essential feature of my present invention that the heated bath in which the washers are immersed shall be kept below the boiling-point.

What I do claim as my invention is—

1. The improved method herein described for making steam-packing, consisting in forming washers of what is known as “rubber belting,” or of a textile material similarly prepared with rubber, and subjecting the same to an oleaginous bath heated to a point slightly below the boiling-point, as described, said bath containing finely-pulverized plumbago, steatite, and mica held in suspension, as described.

2. As an article of manufacture, the steam-packing formed of washers cut from leather belting or a textile material similarly prepared with rubber and saturated with an oleaginous fluid having plumbago, steatite, and mica held in suspension.

3. In a steam-packing, the combination of a series of washers, A A, of textile material prepared with rubber, as rubber belting, said washers being saturated with an oleaginous fluid having plumbago, steatite, and mica held in suspension, and layers D, of a fibrous material, at the top and bottom of said washers, as described.

CHARLES A. CLEVELAND.

Witnesses:

EBEN F. THOMPSON,  
JOHN W. SHEEHAN.