June 26, 1923. 1,459,744

J. OSTRANDER

FLEXIBLE PACKING AND PROCESS FOR MAKING IT

Filed Dec. 9, 1920

Fig 1

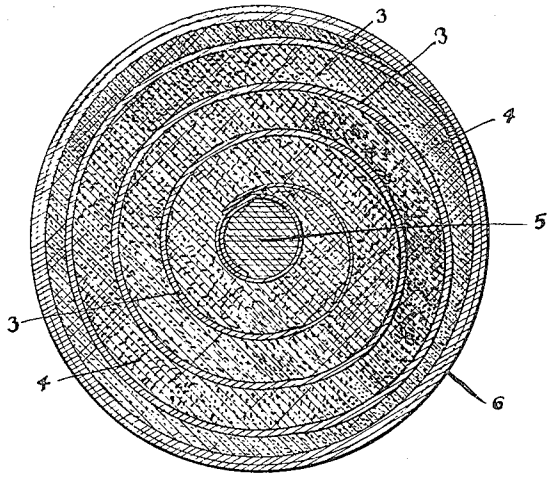
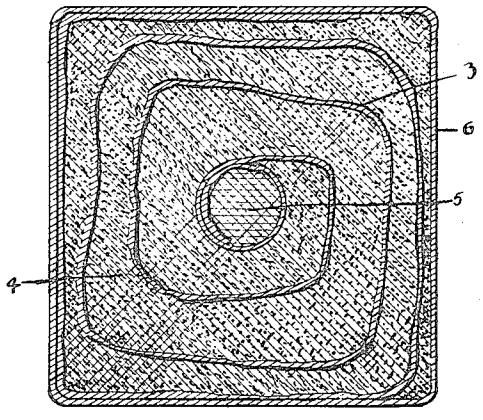


Fig 2



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JAMES OSTRANDER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO GRAPHO-METAL PACKING COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION.

FLEXIBLE PACKING AND PROCESS FOR MAKING IT.

Application filed December 9, 1920. Serial No. 429,349.

To all whom it may concern:

Be it known that I, JAMES OSTRANDER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Flexible Packing and Processes for Making It, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in flexible packing, and has for its object the production of a device and the utilization of a process by which the packing is manufactured, the use of which insures a packing that has great wearing qualities, and one that can be adapted to various conditions under which packing is used.

A further object is the production of a packing that can be manufactured cheaply and afford positive lubrication to the shaft.

These and such other objects as may appear hereinafter are attained by my device, an embodiment of which is illustrated in the accompanying drawing, in which—

Figure 1 represents a sectional view of a packing formed by my improved process before being pressed in shape; and

Fig. 2 is a similar sectional view of a packing pressed into shape with a square cross section.

Like numerals of reference indicate like parts in the several figures of the drawing.

Referring now to the drawing,—the packing consists primarily in the utilization of grapho-metal, a product formed from lead and graphite, or, if desired, from other similar compounds of a bearing metal and lubricant. The material is in a loculate condition, the lead being in finely divided or porous state, with the pores filled and the outer surface covered with graphite, forming excellent lubricant.

In forming the packing under my improved process, I take a sheet of thin cloth,—flax or muslin preferred—and thoroughly impregnate it with beeswax or paraffin, or some lubricant of like character. The cloth thus prepared, of sufficient width to make a complete packing when finished, is laid flat and finely divided grapho-metal or like material is sprinkled over the surface. I then form a core, preferably of cork and graphite packed into a cloth container of a size varying from a lead pencil up, and lay the same on the outer edge of the prepared cloth on top of the layer of grapho-metal. The cloth then is rolled around the core until a packing of the right size is obtained. It is understood, of course, that the size of the cloth is cut before hand in order to make the packing of the proper size. This roll is placed then in a tube of thin muslin or cloth, the material or cross-section at that time being shown in Fig. 1, in which 3 represents the layer of cloth or muslin covered with the layer of grapho-metal 4, surrounding the core 5, the entire roll being placed within the containing cloth cylinder 6.

In the event it is desired to make a packing with a rectangular cross-section, the roll is put in a square press, pressure applied, and the packing assumes the form shown in Fig. 2, the material being tightly pressed together, with the enveloping fabric 6 hugging tightly the sides.

The fabric on which the packing is sprinkled serves to keep the material in place as the packing is worn, and prevents any material disintegration. The central core 5 gives greater resiliency to the packing as a whole, and also lightens the weight and cheapens the material; it being understood that very little packing is worn to the center, ordinarily, but in the event that the center does become subject to wear, there is sufficient grapho-metal in with the cork to give the proper lubrication to the shaft or bearing surface.

In the event that a packing is required for use in which hot steam or very high temperature is encountered, in place of muslin or flax a sheet of asbestos cloth is substituted, rolled in the same way, and pressed the same as shown in the figures described heretofore.

It is understood, of course, that I am not limiting myself to the use of grapho-metal, although that is the product which is used by applicant and applicant's assignee, as there may be other lubricating metals that can be used in making the packing under my improved process.

Having thus described my invention, I claim—

1. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading

a layer of a metallic packing composition thereon, rolling said sheet to form a mass, and compressing said mass into any desired shape.

2. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of a metallic packing composition thereon, rolling said sheet to form a rope-like mass, enclosing said mass in a fibrous envelope, and the compression of said rope into any desired shape.

3. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of a metallic packing composition thereon, rolling said sheet around a central core to form a mass, and compressing said mass into any desired shape.

4. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of a metallic packing composition thereon, rolling said sheet around a central core to form a mass, enclosing said mass in a fibrous envelope, and compressing said mass into any desired shape.

5. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of a metallic packing composition thereon, rolling said sheet around a core of cork and grapho-metal to form a mass, and compressing said mass into any desired shape.

6. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading over said sheet a layer of grapho-metal, preparing a core of finely divided cork and grapho-metal within a cloth tube, rolling said sheet spread with grapho-metal around said core to form a rope-like mass, placing said rope-like mass within a cloth envelope or tube, and compressing said mass into any desired shape.

7. A packing, comprising a convolute sheet of fibrous material impregnated with a lubricant, a packing composition separating successive convolutions of said sheet, and a cloth envelope enclosing said sheet and composition, said packing being deformed so that the envelope is tensioned and the packing composition compressed.

8. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of packing composition thereon, and rolling said sheet to form a mass.

9. The process of manufacturing packing, which consists in spreading a layer of packing composition on a sheet of fibrous material, rolling said sheet to form a rope-like mass, and enclosing said mass in a fibrous envelope.

10. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading a layer of a metallic packing composition thereon, and rolling said sheet around a central core to form a mass.

11. The process of manufacturing packing, which consists in impregnating a sheet of fibrous material with a lubricant, spreading over said sheet a layer of grapho-metal, preparing a core of finely divided cork and grapho-metal within a cloth tube, rolling said sheet spread with grapho-metal about said core to a rope-like mass, and placing said rope-like mass within a cloth envelope or tube.

12. The process of manufacturing packing, which consists in spreading a layer of packing composition of bearing metal and a lubricant on a sheet of fibrous material, and rolling said sheet into a roll.

13. The process of manufacturing packing, which consists in spreading a layer of packing composition on a sheet of fibrous material, rolling said sheet into a roll, and compressing said roll into any desired form.

14. The process of manufacturing packing, which consists in preparing a core of cork and a metallic packing composition, and wrapping about said core a sheet of fibrous material coated with a metallic packing composition.

15. A packing, comprising a convolute sheet of fibrous material and a packing composition separating successive convolutions of said sheet, said sheet of fibrous material being impregnated with a lubricant.

16. A packing, comprising a core, a convolute sheet of fibrous material surrounding said core, and a packing composition separating successive convolutions of said sheet, said packing composition being composed of a mixture of a bearing metal and a lubricant.

17. A packing, comprising a core, a convolute sheet of fibrous material surrounding said core, a packing composition separating successive convolutions of said sheet, and an envelope enclosing the whole.

18. A packing comprising a sheet of fibrous material spread with a composition of graphite and lead and rolled in convolute form with such composition between successive convolutions.

19. The packing set forth in claim 18, wherein there is a central core formed of cork and such composition of graphite and lead within the convolute roll of fibrous material.

20. The packing set forth in claim 18, wherein there is a fabric envelope enclosing the whole.

In witness whereof, I have hereunto subscribed my name.

JAMES OSTRANDER.

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