April 23, 1935. J. M. BANDISH 1,998,890

PACKING

Filed May 1, 1933

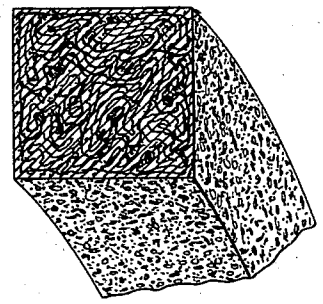

Fig. 2

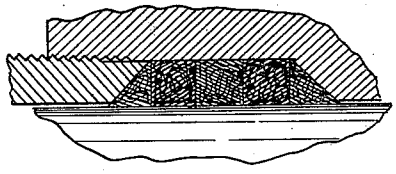

Fig. 1

Fig. 4

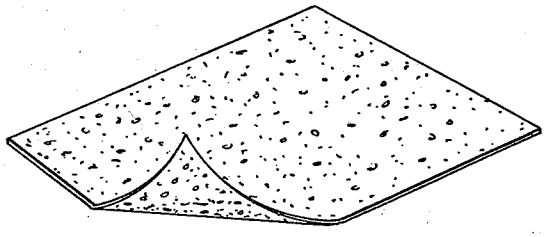

Fig. 3

INVENTOR
Joseph M. Bandish
BY
Chappell & Earl
ATTORNEYS

Patented Apr. 23, 1935

1,998,890

UNITED STATES PATENT OFFICE

1,998,890

PACKING

Joseph M. Bandish, Chicago, Ill.

Application May 1, 1933, Serial No. 668,898

2 Claims. (Cl. 154—45.5)

It is quite common knowledge and experience that packings, even metallic packings, are not completely satisfactory under certain conditions of high temperature and high pressure such as are to be found in refineries, chemical works and the like, pump shafts, valve stems and the like frequently scoring or breaking down, or, under such service conditions, injuring the shafts, valve stems or spindles and/or rendering frequent replacements necessary, besides requiring shutdowns with consequent expense and the danger incident to packings giving way under such conditions.

The main object of this invention is to provide a packing which is well adapted for high temperature and high pressure conditions such, for example, as are to be found in a refinery.

A further object is to provide a metal packing which is well adapted for conditions above pointed out, is effective in preventing scoring, and renders moving parts easy of operation.

Objects pertaining to details and economies of my invention will appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary view of a packing box and shaft or spindle embodying my improved packing, parts being shown conventionally for the purpose of illustrating an application of my improvements.

Fig. 2 is a fragmentary perspective view of a packing embodying my improvements.

Fig. 3 is a perspective view of a sheet of metal foil partially coated with pulverulent aluminum and a lubricant, this being indicated by stippling.

Fig. 4 is a conventional illustration of a plastic packing material including shreds or strips of metal and fibrous material coated with pulverized aluminum and a lubricant, this also being conventionally illustrated by stippling.

In the accompanying drawing, which is conventionalized, 1 represents a shaft or spindle, 2 a fragment of a packing box and 3 a packing gland. My improved packing 4, which in the embodiment shown in Figs. 1 and 2 is made up of metal foil convolutely or otherwise twisted or wound upon itself and compacted into a rectangular form, may be introduced in a packing box either in the form of rings or in a spiral coil.

Where the packing is to be used in high temperatures I preferably employ aluminum foil annealed as disclosed in the patent to Hall No. 1,464,604, dated August 14, 1923. The metal foil is preferably crumpled prior to rolling, and compacting and other forming serves to crumple it sufficiently.

This metal foil in the preferred embodiment is coated with a lubricant containing a substantial amount of pulverulent or comminuted aluminum, preferably in the form of flakes, aluminum which, while in finely divided form, still has the form of flakes. This may be mixed with lubricant such as castor oil or some other suitable vegetable or mineral oil in proper quantity to render it easy of application.

As the packing is formed the external surface is thoroughly coated with this aluminum composition, the coating filling the interstices of the packing and presenting a surface of finely divided aluminum.

When a packing having this coating is installed the particles of aluminum may shift about to fill up the small openings, both in the packing and on the surface of the shaft, or spindle, or part to which the packing is applied, with the result that such part becomes coated and its scratches and small depressions are apparently completely filled, presenting a smooth polish-like surface both on the shaft, spindle or part packed and the packing itself, particularly where the packing is a metallic packing.

The result is found to be that the part packed moves much more easily than with packings not having the features of this invention, and that neither the shaft nor the packing exhibit the tendency to score. The life of the packing is very materially extended.

In the embodiment of my invention shown in Fig. 4 the comminuted aluminum is applied to a shredded metal such as shreds of metal foil, preferably with asbestos fiber or other fibrous material mixed therewith. This packing material is introduced in the packing box and likewise presents the comminuted aluminum to the bearing surface so that the irregularities of such bearing surface, such as scratches or scores, become filled and a smooth, freely moving working surface is presented to the packing.

My improved packing is particularly desirable for use in high pressure and high temperature conditions, as such conditions present difficulties which have not been heretofore satisfactorily met, although it is desirable in conditions usually met as packings used for such conditions are correspondingly improved.

I have not attempted to illustrate various

adaptations and embodiments of my invention as it is believed that this disclosure will enable those skilled in the art to embody or adapt the same as may be desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A packing for moving parts or bearings, consisting of a packing element or member coated with a mixture of comminuted aluminum flakes and a lubricant.

2. A packing for moving parts or bearings consisting of metal foil compacted into a packing element or member and coated with a lubricant containing comminuted aluminum flakes.

JOSEPH M. BANDISH.