No. 629,136. Patented July 18, 1899.

J. G. SCIAMA & K. M. SOSNOWSKI.

PACKING FOR YIELDING ROTARY SHAFTS.

(Application filed Dec. 30, 1897.)

(No Model.)

Fig. 1.

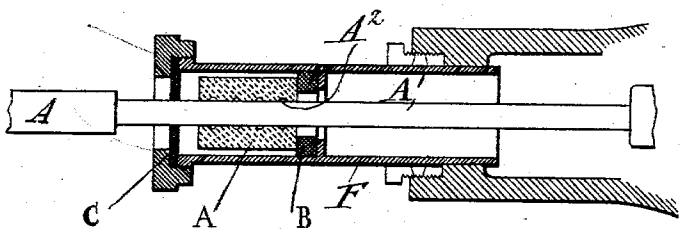
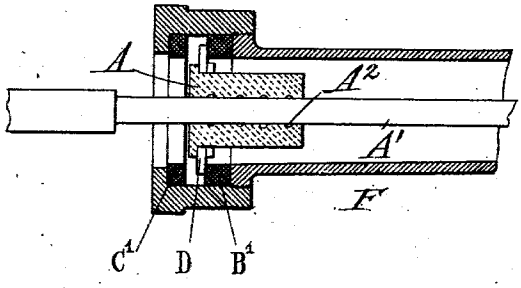


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH GASTON SCIAMA AND KAZIMIR MARTIN SOSNOWSKI, OF PARIS, FRANCE, ASSIGNORS TO THE AKTIEBOLAGET DE LAVALS ANGTURBIN, OF STOCKHOLM, SWEDEN.

PACKING FOR YIELDING ROTARY SHAFTS.

SPECIFICATION forming part of Letters Patent No. 629,136, dated July 18, 1899.

Application filed December 30, 1897. Serial No. 664,640. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH GASTON SCIAMA and KAZIMIR MARTIN SOSNOWSKI, of Paris, France, have invented certain new and useful Improvements in Packing for Yielding Rotary Shafts, (for which we have obtained patents in Norway, No. 5,375, dated September 5, 1896; in Denmark, No. 1,206, dated August 7, 1897; in Belgium, No. 123,367, dated September 5, 1896; in Spain, No. 19,612, dated November 21, 1896; in Italy, No. 42,555, dated September 30, 1896; in Austria, No. 3,086, dated October 4, 1896; in Hungary, No. 7,342, dated September 9, 1896; in Switzerland, No. 13,259, dated September 17, 1896; in Great Britain, No. 20,514, dated September 16, 1896; in Sweden, No. 8,466, dated September 1, 1896, and in France, No. 254,327, dated February 27, 1896,) of which the following is a specification.

In steam-engines, air-compressors, and the like the leakage of steam, gas, or air is usually avoided by means of stuffing-boxes of different constructions. The present invention refers to an improvement for that same object; but the means for packing in question is especially intended to be applied to springy or yielding shafts—such, for instance, as those used in rapidly-revolving steam-turbines. Such an appliance has not been possible with the constructions hitherto known.

In the accompanying drawings the invention is shown in two modifications.

Figure 1 shows in vertical section part of a shaft provided with the said packing device. Fig. 2 shows in vertical section a modification of the construction of Fig. 1.

A, Fig. 1, indicates an integral sleeve mounted on the springy or yielding shaft A′ by being pushed thereon so that it fits snugly. Said sleeve is provided with annular grooves A^2, which have for their object to establish a tight joint between the sleeve and the shaft. The sleeve is mounted on the shaft in such a manner that it can follow the movements sidewise or vibrations of the shaft without following its rotation. Preferably the sleeve is made of a material that offers but little friction—such as, for instance, coal-carbon or graphite. F is a casing surrounding the sleeve in a similar manner as the casing of an ordinary stuffing-box, except that it is generally larger internally than usual. In this casing F are secured two disks B and C in such a manner that a tight joint is established between the casing and the disks. Against one of these disks the sleeve A is intended to rest—namely, against C if the pressure in the casing of the engine is greater than that in the surrounding medium and against B if said pressure is lower than in the surrounding medium. The disks are made of a more or less elastic material—so that they may establish a yielding yet tight joint between the sleeve A and the casing F. The sleeve may also be always in contact with both of the disks, if it be made sufficiently long. By this arrangement leakage of steam or fluid under pressure is avoided—viz., at the inner side of the sleeve A by means of the annular grooves A^2 and outside the sleeve by means of the disk B or C. Full liberty is given to the shaft to yield sidewise or to vibrate, in which case the sleeve is carried with the shaft, and the disk B or C is correspondingly put out of center or distorted.

In the modification shown in Fig. 2 the sleeve A is not wholly situated between two elastic disks, but is provided with a flange D, which rests against the disk B′ or against the disk C′, according to circumstances.

Whatever be the form of the invention it is necessary that the sleeve be elastically connected with the surrounding casing.

Having thus described our invention, what we claim as new is—

1. The combination, with a springy or yielding shaft, of an integral sleeve mounted on the shaft, for making a tight joint with the shaft, a casing surrounding the sleeve, and two disks of elastic material, against which the end of said integral sleeve is adapted to rest, substantially as set forth.

2. The combination, with a springy or yielding shaft, of an annularly-flanged integral sleeve mounted on the shaft for making a

tight joint with the shaft, a casing surrounding the sleeve, and two disks of elastic material, into the space between which the flange on said sleeve projects, whereby both side surfaces of said flange are adapted to rest against said disks, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

JOSEPH GASTON SCIAMA.
KAZIMIR MARTIN SOSNOWSKI.

Witnesses:
EDWARD P. MACLEAN,
D. T. S. FULLER.