No. 759,801. PATENTED MAY 10, 1904.

J. L. BONE & J. H. WHITEHEAD.

APPARATUS FOR APPLYING LUBRICANTS TO WIRE OR OTHER ROPES.

APPLICATION FILED NOV. 12, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. II

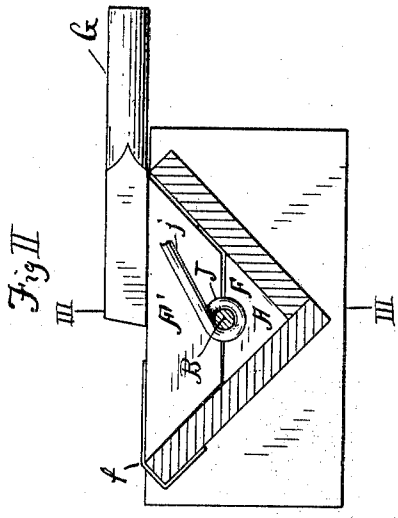


Fig. III

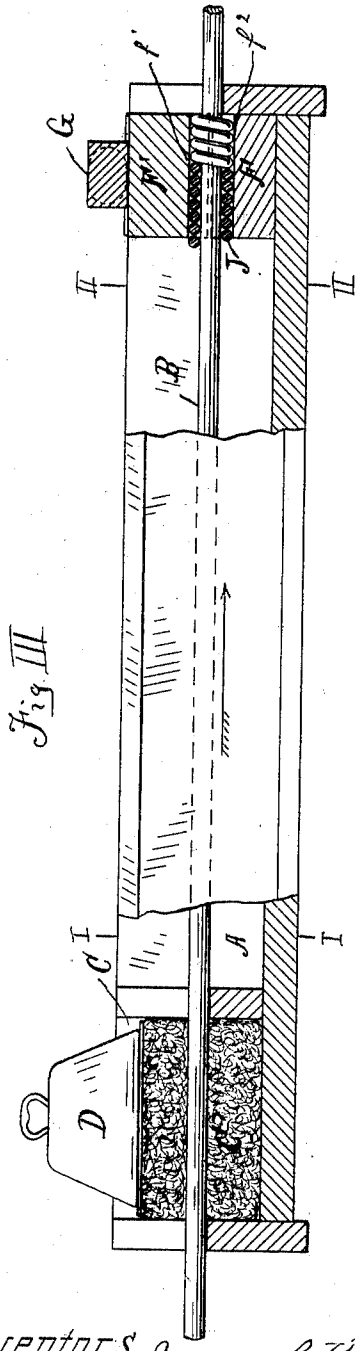
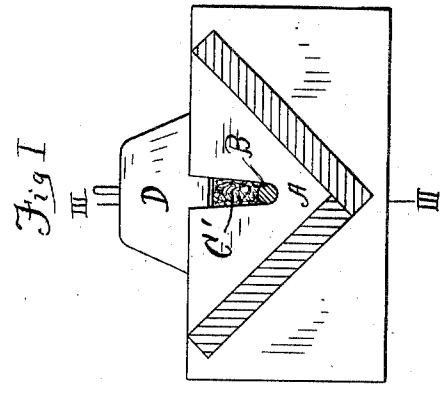


Fig. I



Witnesses:

A. L. Lord.

E. B. Donnelly.

Inventors: James L. Bone et
Joseph H. Whitehead
by
W. E. Donnelly
their Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. IV

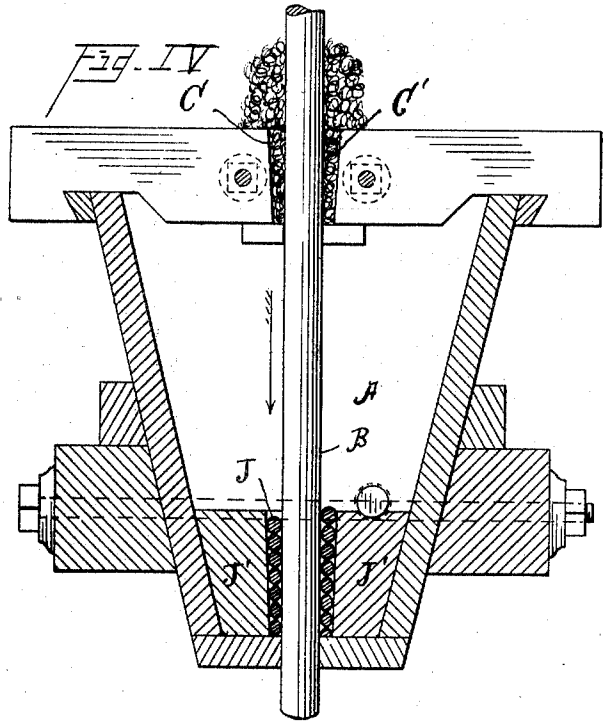
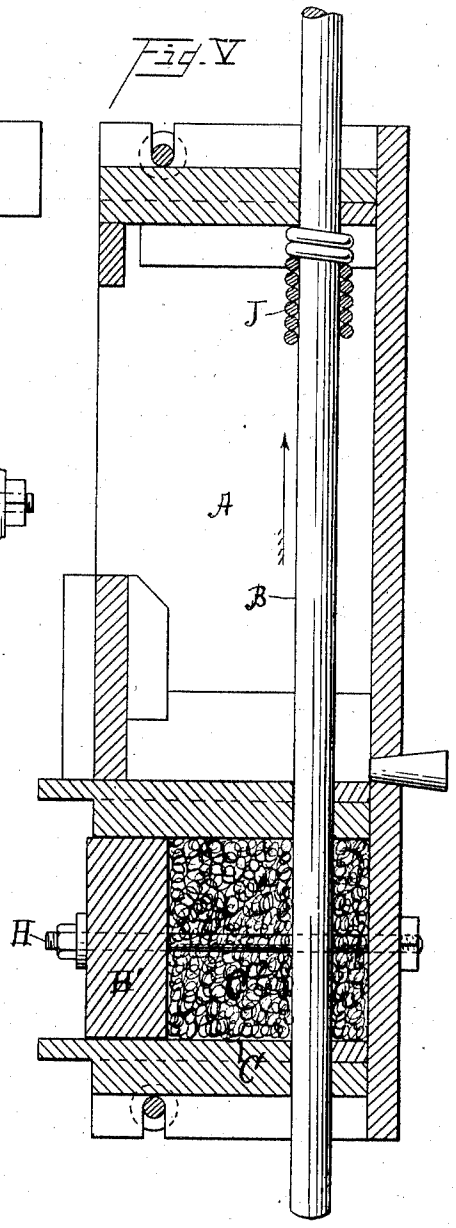


Fig. V



Witnesses:

A. L. Lord.

E. B. Donnelly.

Inventors

James L. Bone &

Joseph H. Whitehead

by

W. E. Connell their Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 759,801. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

JAMES L. BONE, OF PITTSBURG, PENNSYLVANIA, AND JOSEPH H. WHITEHEAD, OF CHICAGO, ILLINOIS, ASSIGNORS TO THE IRONSIDES COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

APPARATUS FOR APPLYING LUBRICANTS TO WIRE OR OTHER ROPES.

SPECIFICATION forming part of Letters Patent No. 759,801, dated May 10, 1904.

Application filed November 12, 1902. Serial No. 130,977. (No model.)

To all whom it may concern:

Be it known that we, JAMES L. BONE, residing at Pittsburg, county of Allegheny, State of Pennsylvania, and JOSEPH H. WHITEHEAD, residing at Chicago, county of Cook, State of Illinois, citizens of the United States, have invented certain new and useful Improvements in Apparatus for Applying Lubricants to Wire or other Ropes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to a device for applying lubricating compounds embodying filling qualities to wire or other ropes, such as are used for transmitting power, elevating purposes, and other like uses, the object being to pack the substance evenly and tightly into the gutters between the strands of the rope, thereby locking it into the interstices between the wires or strands and removing any surplus material from the rope, thus preventing wastage and deposits either on the drums, sheaves, or rollers coming in contact with the said wire rope or used in connection with it.

A further object of our invention is to thoroughly clean and dry the rope previous to the application of the lubricating compound, thus placing the same in condition to properly receive and retain the compound.

With the above objects in view our invention consists in the device hereinafter fully set forth, all of which will be particularly pointed out in the claims.

In the drawings, Figure I is a view in section, taken through line II, Fig. III. Fig. II is a cross-sectional view taken through line II II, Fig. III. Fig. III is a view in side elevation with sections taken longitudinally and vertically at both ends through lines III III III III in Figs. I and III, respectively. Figs. IV and V illustrate sectional views of modified forms of a device for applying the lubricant to vertically and diagonally running ropes.

In order to better explain our invention, it should be stated that it is very essential in using wire and other ropes that the same be properly lubricated both against internal wear through the action of the wires and strands upon each other and also against external wear through the action of the rope at its external portion against mechanism with which it comes in contact during operation and sealing it against acid and water. It is also essential that the compound be so applied as to obviate its pulling off or stripping through friction or wear, and for this purpose and to avoid the aforementioned difficulties it is necessary to provide a lubricant which acts in the nature of a shield or filler and that such lubricating compound when applied shall be firm enough to fill all the interstices and gutters of the rope externally between its wires and strands and at the same time penetrate to the interior of the rope for lubricating purposes. As far as is known to us, ropes employing this type of lubricant have been treated by hand or by crude appliances, which were both slow in operation and the results were in no manner satisfactory on account of the irregularity of the application and pressure and the crude manner of applying.

The first step in the treatment of the rope before applying the lubricant should be to thoroughly clean and dry the same. The second step should be to apply the lubricating compound, the third step to compress the lubricating compound to and into the rope and remove any surplus of the compound from the rope. In our device these steps are accomplished by providing a receptacle A to receive the lubricating compound. This receptacle may be of any suitable cross-section adapted to receive the compound and allow of the rope B to pass through the compound while within the receptacle A. As it is preferable that the compound be heated, and hence that not too large quantities be employed at a time, we prefer to form this receptacle A of such shape as to converge in a direction toward the place through which the rope B is to pass and as illustrated in Figs. I and II. When the substance is to be applied to a rope running in approximately a horizontal direction the cross-section of this receptacle is

made preferably trough or V shaped; but when it is necessary to apply the substance to ropes running either in a vertical direction or in a diagonal direction the receptacle is preferably formed as illustrated in Figs. V and IV, in which it will be seen that the receptacle is more or less contracted or formed trough-shaped at its lower end. At the receiving end of the receptacle and in close juxtaposition to it we have provided a cleaning and drying chamber C, which is packed with waste, tow, or like material C′, which packing incloses the rope at this part, and in order to bring this packing in close contact with the rope it is firmly compressed within the chamber by suitable means—such, for instance, as a weight D; but other means may be employed for accomplishing this object, such as a spring or the like, the main object being to compress the cleaning material firmly to and around the rope. At the opposite end of the receptacle A we provide a wiper block or mechanism, which in the case illustrated in Figs. I and II comprises a lower member F and an upper member F′, (see Fig. III,) the upper member F′ being preferably hinged at one end, as at *f*, and both members being provided with a centrally-located aperture composed by hollowing out the lower and upper block F and F′, as at f' f^2, respectively, which provides an orifice of greater diameter than the diameter of the rope to be treated. In this construction we have shown a wiper J, which is more or less compressible and is corrugated on its interior where it comes in contact with the rope. These corrugations are preferably spirally arranged or diagonally arranged, and for this purpose and to attain this configuration we prefer to employ a Manila rope, say, from one-half-inch diameter up, according to the rope to be treated. This rope is spirally and tightly wound around the rope to be treated and compressed within the orifice f' f^2, the pressure being attained, in the case illustrated in Fig. II, through a handle G, attached to the hinge-block F′. This handle G may be dispensed with and a weight or spring-pressure employed. Further, if rope is employed for the purpose of a wiper one end of it may be left loose, as at *j*, and may be grasped and held tightly by the workman. The operation of the wiper J is first to pack and fill the compound by compression into the rope between its strands and its wires and then to even the compound on the rope and clean it off uniformly, and we find that by a wiper constructed as above set forth the best results are attained.

In Fig. V of the drawings we have illustrated the wiper and compressor as formed entirely of a spirally-wound compressible substance, the compression being attained by tightly winding the material in a spiral direction around the rope and pulling it tightly either by hand or mechanically. In this case the pressure-blocks are entirely eliminated. In this figure also the wiper and cleaner box or compartment is provided with a follower-block H′, and the compression of the material in it around the rope is attained by drawing the follower-block by means of a screw-threaded bolt or lock H.

In Fig. IV of the drawings the cleaning and wiping material is compressed by being packed downward in the direction in which the rope runs. In this figure also the wiper or cleaner material is contained within a compartment formed by two blocks J′ J′, which are tapering in shape and seat themselves in the bottom of the tapering receptacle A.

In setting forth our invention we have illustrated and called attention to certain details of construction and assemblages of parts, as we find them best adapted for the intended purpose, and have illustrated and described modifications of the device as a whole; but we do not, hence, wish to be limited to these details or assemblages excepting as to their coacting to perform the functions in the order above set forth.

What we claim is—

1. The combination with the receptacle adapted to contain lubricant and to have a rope run therethrough, a wiper formed of flexible material and being adapted to be wound on said rope, the wiper having one of its ends free whereby it can be tightened on the rope as the latter is moved through the receptacle.

2. The combination with the receptacle adapted to contain lubricant and to have a rope run therethrough, said receptacle being provided adjacent one of its ends with a partition thereby forming a drying-chamber, said partition and end walls being formed with alining openings to receive said rope, packing arranged in said last-named chamber, means for compressing the same, a spirally-grooved wiper adapted to encircle said rope and being arranged within the bounds of the receptacle.

Signed at Pittsburg, Allegheny county, Pennsylvania, this 1st day of November, 1902, by JAMES L. BONE.

JAMES L. BONE.

Witnesses:
W. H. LEMON,
GEO. H. MONRO, Jr.

Signed at Hancock, Houghton county, Michigan, this 27th day of October, 1902, by JOSEPH H. WHITEHEAD.

JOSEPH H. WHITEHEAD.

Witnesses:
WM. C. KAUTH,
G. E. CARTER.