G. P. & B. M. SIMMONS.

WICK OR FEEDER FOR LUBRICATORS.

APPLICATION FILED MAR. 30, 1914.

1,122,037. Patented Dec. 22, 1914.

Fig. 1.

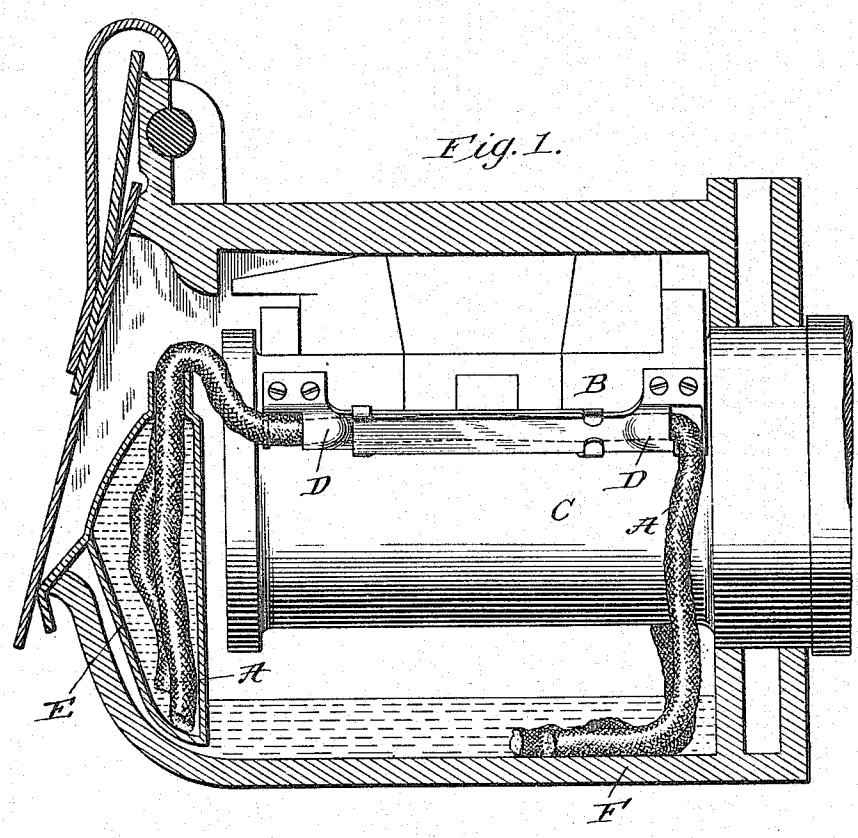
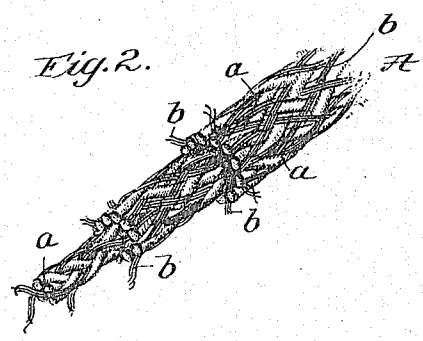


Fig. 2.



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

UNITED STATES PATENT OFFICE.

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WICK OR FEEDER FOR LUBRICATORS.

1,122,037. Specification of Letters Patent. Patented Dec. 22, 1914.

Original application filed January 31, 1912, Serial No. 674,456. Divided and this application filed March 30, 1914. Serial No. 828,261.

To all whom it may concern:

Be it known that we, GEORGE P. SIMMONS and BERTHA M. SIMMONS, citizens of the United States, residing at Herkimer, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Wicks or Feeders for Lubricators, of which the following is a specification.

This invention consists in a wick or feeder for delivering lubricant to journals, slides, and like moving bodies, and to their bearings, guides or supports.

It consists in forming said wick or feeder of metallic and non-metallic strands, braided or interwoven in such manner as to make a fairly compact bundle or body of the two classes of strands. The braiding or interlacing is such that each strand alternately comes to and passes beneath the surface of the feeder, so that strands of both kinds are placed in contact with the surface to be lubricated.

The wick may be used in any form of lubricating device in which such wicks or capillary feeders are employed to carry lubricant, and to deposit it upon a journal, slide, or like part requiring lubrication. It may be cylindrical, or pressed into other suitable form in cross section.

In the accompanying drawings the feeder is represented as applied to a car axle box, the construction of which constitutes no part of the present invention, but is set forth and claimed in a prior application, Serial No. 674,456, filed in our joint names, January 31st, 1912, out of which this application is divided pursuant to official requirements.

In said drawings: Figure 1 is a longitudinal sectional view of a car axle journal box and journal, with the improved feeder applied; Fig. 2 is a perspective view of the wick or feeder in its cylindrical or preferred form.

Referring first to Fig. 2, the wick A will be seen to comprise two sets of strands *a* and *b*, the strands *a* being of a loosely spun or twisted fibrous body, as linen, cotton or woolen yarns or cords, and the strands *b* being preferably of copper wire, though wires of other metal or of a suitable alloy, may be employed. In the drawing, the metallic strands are represented as comprising a plurality of filaments or fine wires, laid side by side, and preferably not twisted together, though a slight twist is permissible. The several filaments together make up one complete strand *b* for the braiding or weaving of the wick.

The manner of forming the wick or feeder may vary, that is to say, the strands may be so braided as to pass from the surface to the interior of the finished wick or feeder, or successive layers may be braided one about another, as found expedient, the important point being that fibers or non-metallic strands, and wires or metal strands, shall both come to the surface, and shall each pass beneath the surface and into the body of the wicking.

The fibrous strands *a* give elasticity and flexibility to the wick or feeder, and being absorbent they take up the oil or other lubricant and hold it, becoming throughly saturated therewith, and consequently becoming capable of giving off lubricant for a considerable time, but in measured or regulated quantity, even after the supply of lubricant in the reservoir from which the feeder receives its charge has been exhausted. The wires or metal strands *b* likewise serve, by reason of their proximity to one another and the consequent formation of narrow channels or passages between them, to effect a feeding of the oil or lubricant, partly by capillary attraction and partly by surface tension. The metal strands serve also the further offices of giving strength and a measure of resilience to the wick or feeder. They prevent glazing of the surface of the wicking, which is liable to occur if only fibrous strands be employed, and they become moderately heated by contact with the moving journal, slide, or other part to be lubricated, and hence by transmitting the heat to the lubricant impart sufficient warmth thereto to keep it in a fluid state even in cold weather. These results, as also the requisite flexibility of the feeder, require the use of relatively fine strands of wire, and the employment of a plurality of wires in a group or strand, as above described.

In Fig. 1 the feeder is represented as applied to the journal of a car axle. It is carried along the under side of the brass, bearing block, or saddle B, and lies in the angle formed by the meeting thereof with the journal C. To support and retain the wicking in this position, a bracket D is secured

to and extends along the side of the saddle, brass, or bearing block B, the wicking lying beneath the bracket D throughout the major portion of the length of said bracket, and passing outward over supporting lips or lugs formed thereon near each end and dropping thence down into the lubricant.

In the drawing we have represented the forward ends of the wicks or feeders as extending into a detachable lubricant receptacle E, while the rear ends of said feeders are shown dipping into the oil or lubricant in the lower part or lubricant reservoir of the journal box F. It is to be understood, however, that this is merely illustrative or suggestive, and that the wicking may be employed in any lubricating device to which it is suited, and supported in any convenient manner, the present invention residing in the composite wick or feeder comprising the metallic and non-metallic strands intertwined, braided or laced, so that each in turn passes to and then beneath the surface.

By the construction above set forth the glazing of the wicking is prevented, the wear is less rapid, the wicking or feeder is made sufficiently resilient to press constantly against the journal or other moving part even when the surface or rubbing side wears more or less away, and the same combination of metallic and non-metallic fibers is presented to the moving part until the wicking or feeder is worn away to a point where it is no longer useful or adequate to the performance of its duties.

Wicks or feeders have heretofore been formed of a bundle of relatively fine wires incased in a fibrous sheathing, and again of a fibrous core or wick wrapped with wire. In the one case only the fibrous strands are exposed or brought into contact with the journal or moving part; in the other, only the metallic wrapping is so brought into rubbing contact with the journal or like part. Under the present construction, however, both metallic and non-metallic strands or fibers are simultaneously and constantly in contact with the moving body or surface, and co-act in supplying lubricant thereto. The wicking is found in practice to give most satisfactory results, and to obviate the difficulties experienced with feeders of former types.

Having thus described our invention, we claim:

1. A wick or feeder for delivering lubricant to a moving part, consisting of a series of metallic wires or strands, and a series of non-metallic yarns or cords intertwined or braided, substantially as described; whereby strands of both characters are caused to pass alternately to the surface and beneath the surface of the wick or feeder.

2. A wick or feeder for lubricants comprising two main sets of strands, one set composed of lightly spun or twisted fibrous strands, and the other set consisting each of a plurality of relatively fine metal filaments laid side by side in a series or group, said two sets of strands being braided or interlaced so that each passes alternately to the surface and to points beneath the surface of the completed wick or feeder.

3. A wick or feeder composed of a series of concentric layers, each layer consisting of metallic strands and non-metallic strands, interlaced or braided together to form a tubular body.

4. A wick or feeder composed of a series of concentric layers, each layer comprising a series of metallic strands and a series of non-metallic strands, the metallic strands consisting each of a plurality of relatively fine metallic filaments laid side by side, and the metallic and non-metallic strands being interlaced or braided, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE P. SIMMONS.
BERTHA M. SIMMONS.

Witnesses:
FLORENCE B. BROWN,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."