

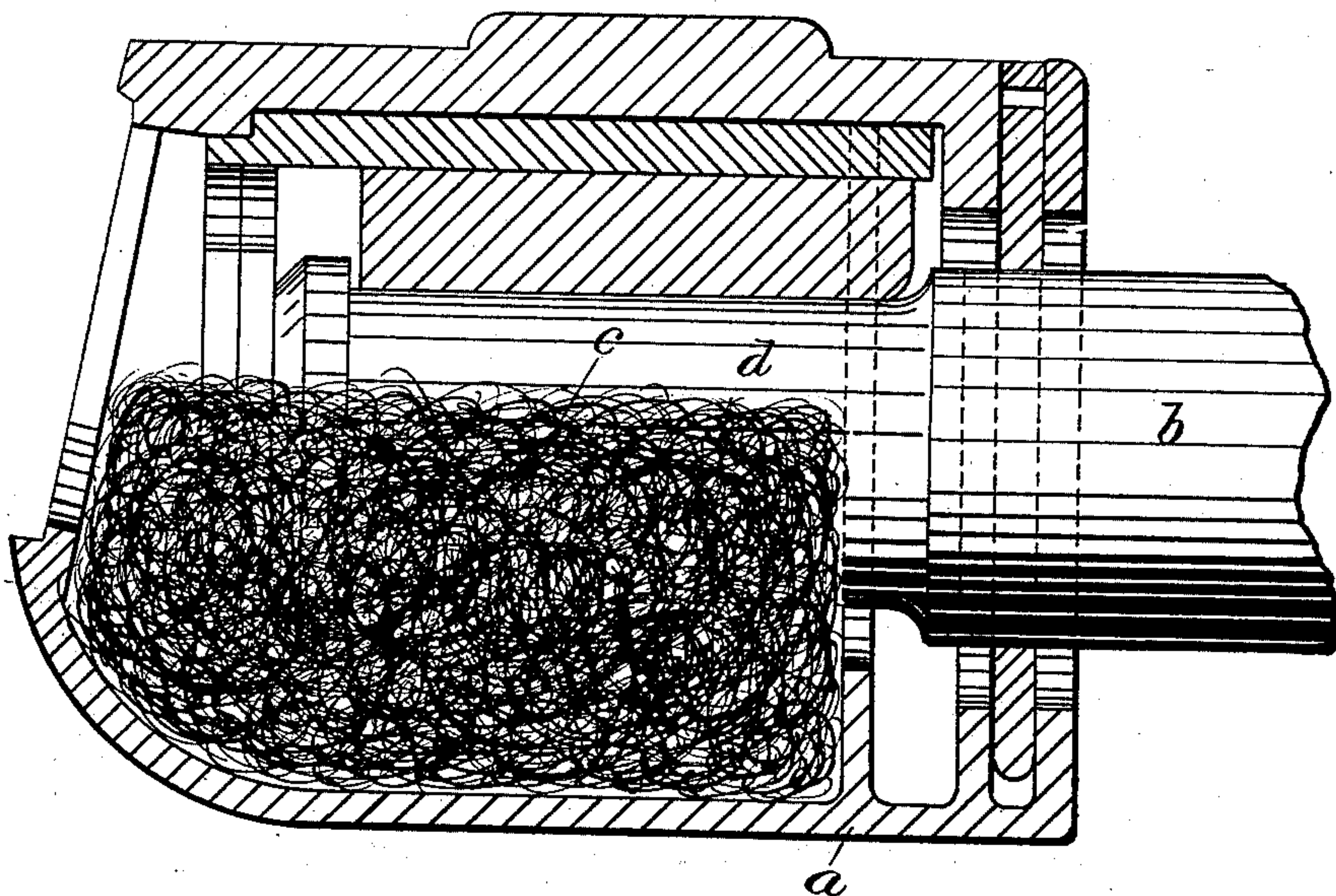
(No Model.)

S. A. FLOWER & P. ROSS.

CAR AXLE LUBRICATOR.

No. 300,587.

Patented June 17, 1884.



WITNESSES.

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UNITED STATES PATENT OFFICE.

SAMUEL A. FLOWER AND PHILIP ROSS, OF JERSEY CITY, NEW JERSEY.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 300,587, dated June 17, 1884.

Application filed April 17, 1884. (No specimens.) Patented in Canada April 30, 1884, No. 19,239.

To all whom it may concern:

Be it known that we, SAMUEL A. FLOWER and PHILIP ROSS, citizens of the United States, and residents of Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Car-Axle Lubricators, of which the following is a specification.

Our invention consists of improvements in fibrous material to be employed as a vehicle by which to apply the oil in a car-axle box to the journal for lubricating it, the said improvements consisting of strong resilient fibers—such as cocoanut fibers—or it may be fine springy metal wires, combined with the absorbent fibers—such as jute, cotton waste, wool, or woolen yarn—commonly used for the purpose, but not having the resilient power to resist the shocks to which it is subject, and being incapable of standing up, so to speak, and maintaining the contact for any material length of time that is necessary for successful lubrication by such material.

Our invention also consists of an improvement of absorbent material of woody fiber, which will be mostly used on account of cheapness, for such lubricating purposes by chemical treatment for removal of the natural gummy and oily matters to increase their absorbent and capillary action.

The fibrous materials—such as cotton waste and the like—sometimes used in car-axle boxes as an absorbent are not very satisfactory, because they have but little capillary power and less resilience, and very soon settle down in a soggy mass, and fall away from contact with the journal, so that both the capillary action and the bearing contact are soon lost, and whatever absorptive properties the fibers may yet retain are of but little or no benefit. The value of fibrous packing for car-axle boxes lies almost wholly in these two properties, the resistance being perhaps the most valuable of the two, because the oil which is thrown up in considerable quantities by the shocks and jars of the cars while in motion lodges on the fibers bearing up against the surface of the journal, and is conducted thereto in liberal measure by the tendency of the oil to flow along the fibers.

The preparation by which we effect the de-

sired improvement of the lubricating properties of the fibers consists of boiling them in a solution of caustic alkali under pressure, to open the pores, cells, &c., and remove the oily and gummy matters, which renders the fibers more lasting in the lubricating-oils, and enables the cellular structures of the fibers to absorb and conduct the oils much more effectively than when not so treated, and the resilience of the fibers is increased by the substitution of the lubricating-oil for the natural gummy and oily matters, which do not, when retained in the fibers, fill and distend the fibers as the lubricating-oil does, which maintains the resilience.

The utility of the combination of the strong resilient metal or cocoanut fibers and absorbent jute and other like fibers lies chiefly in the greater size, strength, and resilience of the metal or cocoanut fibers to re-enforce the lesser resilience of the finer jute fibers, which have greater capillary power, and also greater power of holding up the oil against the journal than the coarser cocoanut and wire fibers. For this reason these fibers combined afford a better vehicle for lubrication in their natural state than any absorbent fibers alone, and we propose to so employ them without the chemical treatment in some cases; but the absorbent fibers, and also the cocoanut fibers, are greatly improved by such treatment.

The proportions of the different fibers which we prefer are about fifty per cent. of each when cocoanut and absorbent fibers are used; but it will be understood that the proportions may be varied as desired, and when wire is employed the proportion of wire may be much less than of the absorbent fibers.

In the accompanying drawings we have represented a longitudinal sectional elevation of a car-axle box, *a*, and a side view of a portion of an axle, *b*, showing the mode of using the fibrous material *c*, which is placed in the box under the journal *d* in sufficient quantity to pack up around and against the journal suitably to enable the oil thrown up among the fibers of the upper part by the shocks of the cars or raised up by capillary action to flow onto the journal, and thus effectively keep it lubricated.

We have found in practice that our im-

proved fibrous packing affords better lubrication with much less oil than cotton waste and other like fine and highly absorptive fibers alone.

5 What we claim, and desire to secure by Letters Patent, is—

1. A fibrous packing for car-axle boxes, consisting of cocoanut or other resilient fiber and jute or equivalent absorbent fiber in combination, substantially as described.

10 2. A fibrous packing for car-axle boxes, consisting of combined cocoanut or other resilient fiber and jute fiber or other equivalent ab-

sorbent woody fiber chemically treated with caustic alkali for the removal of the natural 15 resinous and gummy matters of the fibers, substantially as described.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

SAMUEL A. FLOWER.
PHILIP ROSS.

Witnesses:

W. J. MORGAN,
S. H. MORGAN.