(No Model.)

J. M. LEWIS.

BICYCLE BEARING CLEANER.

No. 563,601. Patented July 7, 1896.

Fig. 1.

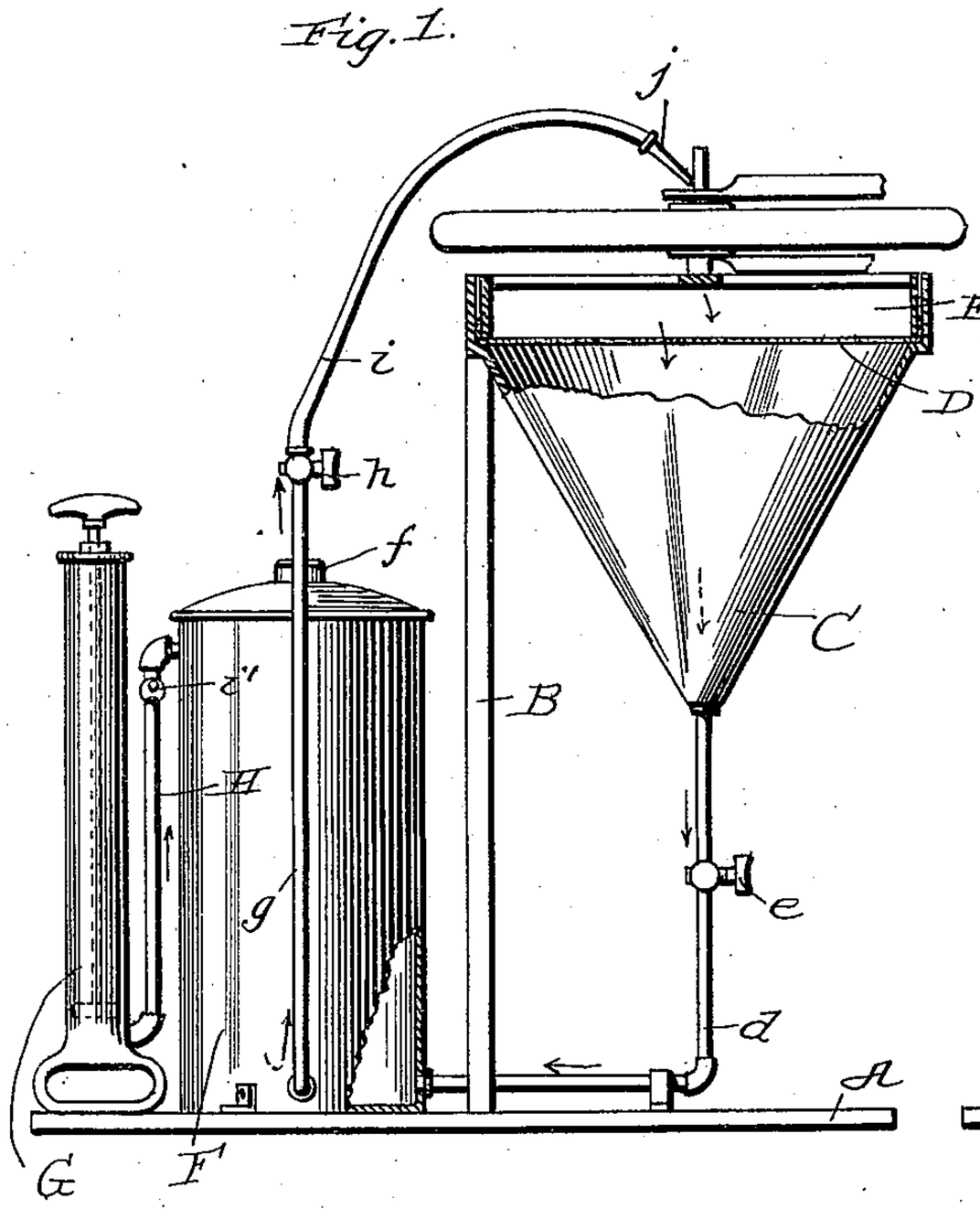


Fig. 2.

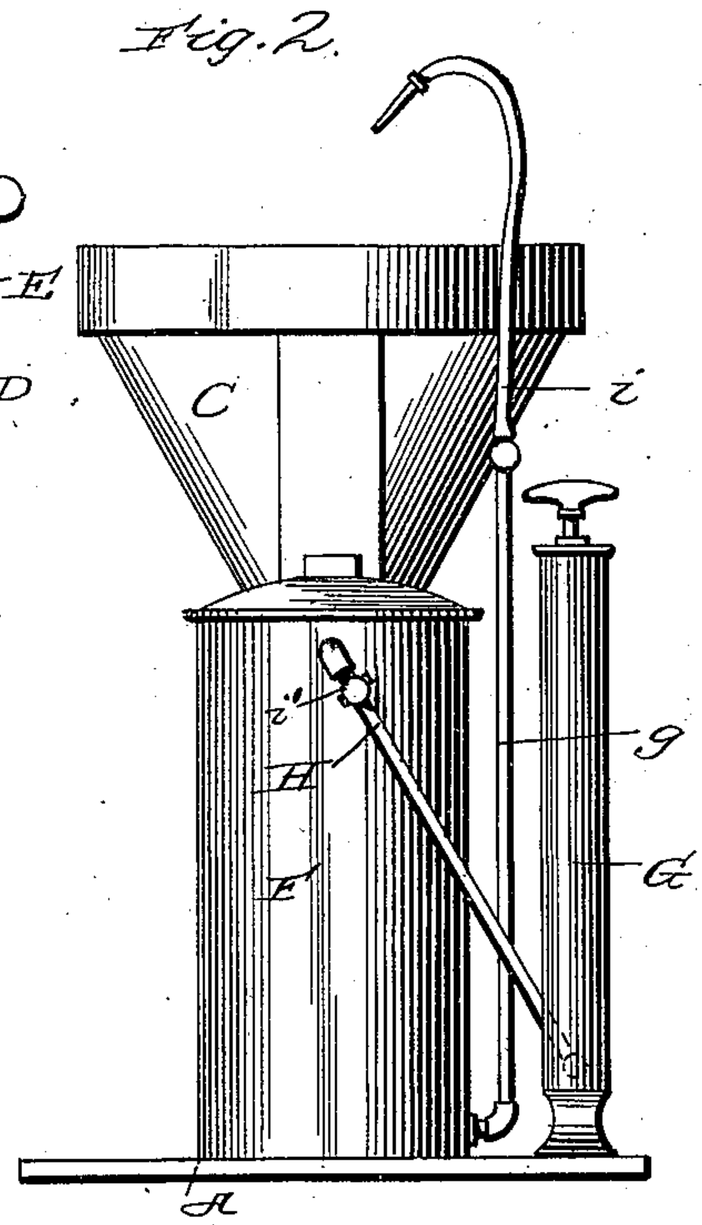


Fig. 3.

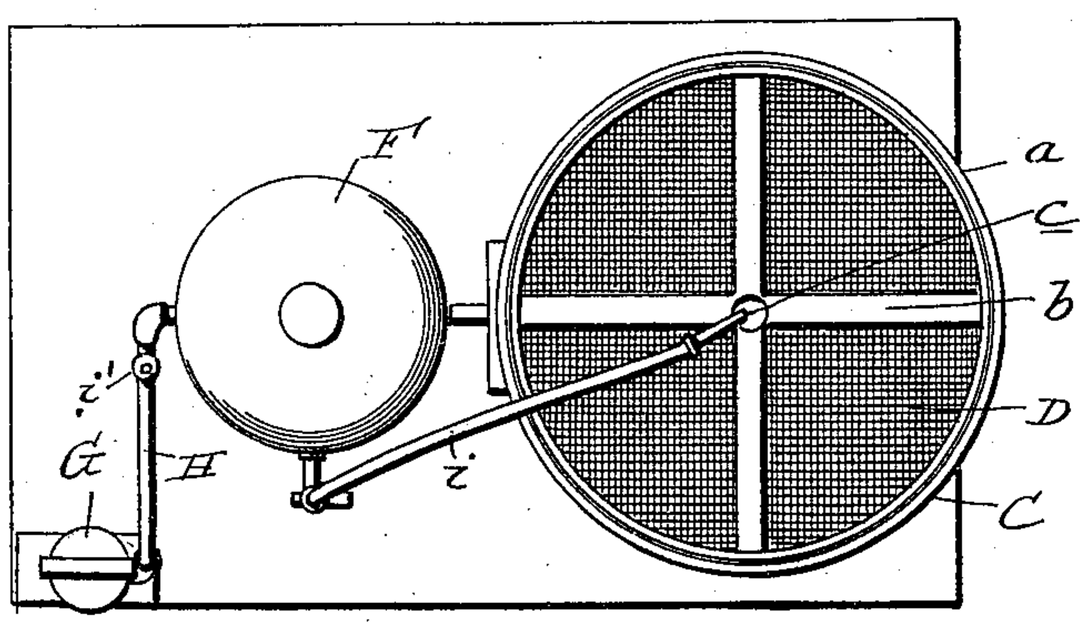
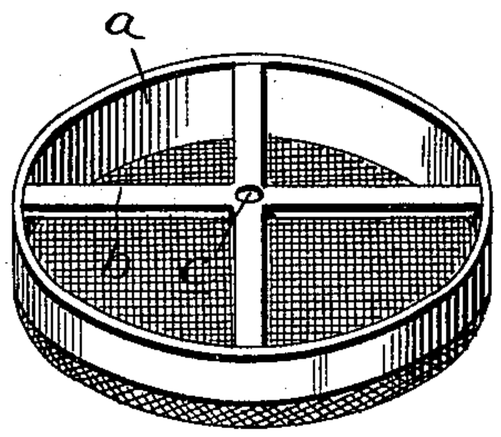


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES MADISON LEWIS, OF ALPENA, MICHIGAN, ASSIGNOR OF ONE-HALF TO ALBERT W. BROWN, OF SAME PLACE.

BICYCLE-BEARING CLEANER.

SPECIFICATION forming part of Letters Patent No. 563,601, dated July 7, 1896.

Application filed March 9, 1896. Serial No. 582,441. (No model.)

To all whom it may concern:

Be it known that I, JAMES MADISON LEWIS, a citizen of the United States, residing at Alpena, in the county of Alpena and State of Michigan, have invented certain new and useful Improvements in Bicycle-Bearing Cleaners; and I do 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 appertains to make and use the same.

My invention has for its general object to provide a simple and easily-operated apparatus through the medium of which the bearings of bicycles may be thoroughly cleaned of sand, dirt, &c., without necessity of removing the wheels from their axles and without soiling the person or clothing of the operator.

With the foregoing end in view the invention will be fully understood from the following description and claims, when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of my improved apparatus, a portion of a bicycle being shown in the position it occupies when the bearing of the rear wheel is to be cleaned. Fig. 2 is a front elevation of the apparatus. Fig. 3 is a plan view of the same, and Fig. 4 is a detail perspective view of the support for the machinery to be cleaned.

In the said drawings similar letters designate corresponding parts in all of the views, referring to which—

A indicates the base of my improved apparatus.

B indicates a support which is connected to and rises from the base A, and C indicates a receptacle which is connected to and supported by the upright B, and is preferably of a funnel shape, as illustrated, although it may be of any other desired shape. This receptacle C is designed to support the machine or portion of the machine to be cleaned and is also designed to receive the oil, gasolene, or other cleaning liquid after the same has been forced through the bearings in a manner presently described, and it is provided with a filtering-diaphragm D, which is designed to free the cleaning liquid of sand, dirt, and other foreign substances, so as to permit of its being raised, and is also provided with the frame E, (better illustrated in Fig. 4,) which serves as a rest for the work to be cleaned.

The frame E may be of any construction suitable to the purposes of my invention, but I prefer to have it comprise the circular rim *a* and the cross-bars *b*, which are provided with an aperture *c* at their point of intersection to receive the axle of a bicycle-wheel, as is illustrated in Fig. 1. The diaphragm D may also be of any construction and may be secured upon the receptacle C in any approved manner. I prefer, however, to form it of cloth, so as to enable it to gather the fine particles of dust and dirt from the oil and to connect it to the frame E, as illustrated, so that it may be readily removed with said frame when it is desired to gain access to the interior of the receptacle C or is necessary to clean the cloth diaphragm.

F indicates the reservoir for the cleaning liquid, which is mounted and secured upon the base A, at the side of the receptacle C, and is connected with the bottom of said receptacle by a pipe *d*, having a cock *e*, whereby the oil may be conducted from the receptacle C to the reservoir when desired. The said reservoir is provided with an opening in its top through which it may be charged with the cleaning liquid, which opening is normally covered by a cap *f*, as illustrated, and it is further provided with a pipe *g*, which has a cock *h*, and is designed for the connection of the pipe *i*, of lead or other suitable material, which has a nozzle *j* at its end, as illustrated, for a purpose presently described.

G indicates an air-compressing pump, which may be of the ordinary construction, and need not therefore be specifically described. This pump G is arranged upon and suitably secured to the base A, and it is connected with the reservoir F by a pipe H, which has a valve *i'*, as shown, so as to prevent the compressed air and the cleaning liquid from passing from the reservoir F through the pipe H.

In using my approved apparatus, the reservoir F is charged with coal-oil, gasolene, or any other cleaning oil or liquid that it is desired

to use, and the cock *h* of the pipe *g* being closed, the said reservoir is also charged with compressed air through the medium of the pump G. This being done, the bicycle is placed upon the frame E, above the receptacle C, and so that the axle of the wheel whose bearing is to be cleaned will enter the aperture *c* of the frame, as shown. The apparatus is now ready for operation, and it is simply necessary for the operator to hold the nozzle *j* in such a position that it will discharge the commingled compressed air and cleaning solution into the bearing of the bicycle, or, if desired, the nozzle may be provided with a sharp or reduced forward end, so that it will remain in position when inserted in the bearing. The cock *h* being now opened the compressed air and cleaning liquid, which are commingled in the reservoir F, will pass through the pipe *g* and hose *i*, and will be injected with great force into the bearing, so as to thoroughly remove all of the particles of dust, dirt, and grit therefrom. The cleaning liquid as it comes from the bearing will pass through the filter-diaphragm D, which will free it of the dust, dirt, &c., which it has collected, and will then fall into the receptacle C, where it will remain by reason of the cock *e* being closed. When all of the compressed air and cleaning liquid has been exhausted from the reservoir F, the cock *e* is opened and the cleaning liquid in the receptacle C is permitted to pass through the pipe *d* into the reservoir F, when the cock *e* is again closed. The cock *h* is now closed and the reservoir is charged with compressed air, after which the cock *h* is opened and the operation before described is repeated.

The said operation or passage of the compressed air and cleaning liquid to the bearing to be cleaned may be repeated as often as is found necessary. I have found from practice, however, that it is generally simply necessary to pass the air and liquid through a bearing once in order to thoroughly clean the same, and it will therefore be appreciated that the cleaning of a bearing may be quickly effected, which is an important advantage and a desideration in the art.

Any suitable cleaning liquid may be employed in my improved apparatus, but I prefer to use the coal-oil or gasolene of commerce, as I find that when commingled with compressed air in the manner described they form suds which are very effectual in cleaning bearings.

It will be appreciated from the foregoing that inasmuch as the oil may be utilized over and over again the expense incident to operating my improved apparatus is very small, and it will also be appreciated that the apparatus embodies no parts that are likely to get out of order after short use, and that it may be operated by a single workman, which is a desideration.

I have in some respects specifically described the construction and relative arrangements of my apparatus in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such construction and arrangement, as such changes or modifications may be made in practice as fairly fall within the scope of my invention. I would also have it understood that while designed especially for cleaning bicycle-bearings, my apparatus may be used to advantage for cleaning parts of other machines.

Having described my invention, what I claim is—

1. An apparatus for cleaning bicycles and other objects comprising a reservoir, adapted to be charged with compressed air and a cleaning liquid, a discharge-conduit connected with the reservoir, an air-compressing device also connected with the reservoir, and a receptacle connected with the reservoir and adapted to receiving the cleaning liquid as it comes from the object that is being cleaned, substantially as specified.

2. An apparatus for cleaning bicycles and other objects, comprising a reservoir adapted to be charged with compressed air and a cleaning liquid, a discharge-conduit connected with the reservoir, an air-compressing device also connected with the reservoir a receptacle connected with the reservoir and adapted to receive the liquid as it comes from the object that is being cleaned, and a filter for clearing the liquid as it passes into the said receptacle, substantially as specified.

3. An apparatus for cleaning bicycles and other objects, comprising a reservoir adapted to be charged with compressed air and a cleaning liquid, a discharge-conduit connected with the reservoir and having a cock, an air-compressing device also connected with the reservoir, a receptacle adapted to receive the liquid as it comes from the object that is being cleaned, a conduit connecting said receptacle and the reservoir and having a cock, a filter for clearing the liquid as it falls into said receptacle and a support upon said receptacle for the object to be cleaned substantially as specified.

4. An apparatus for cleaning bicycles and other machines, comprising a reservoir adapted to be charged with a cleaning liquid and compressed air, an air-compressing device connected with said reservoir, and a discharge pipe or conduit connected with the reservoir and having a cock at an intermediate point of its length and also having a reduced nozzle substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES MADISON LEWIS.

Witnesses:
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