No. 648,724. Patented May 1, 1900.

D. S. COLE.

CYCLE CHAIN CLEANER.

(Application filed Sept. 13, 1897. Renewed Mar. 24, 1900.)

(No Model.)

Fig. 2.

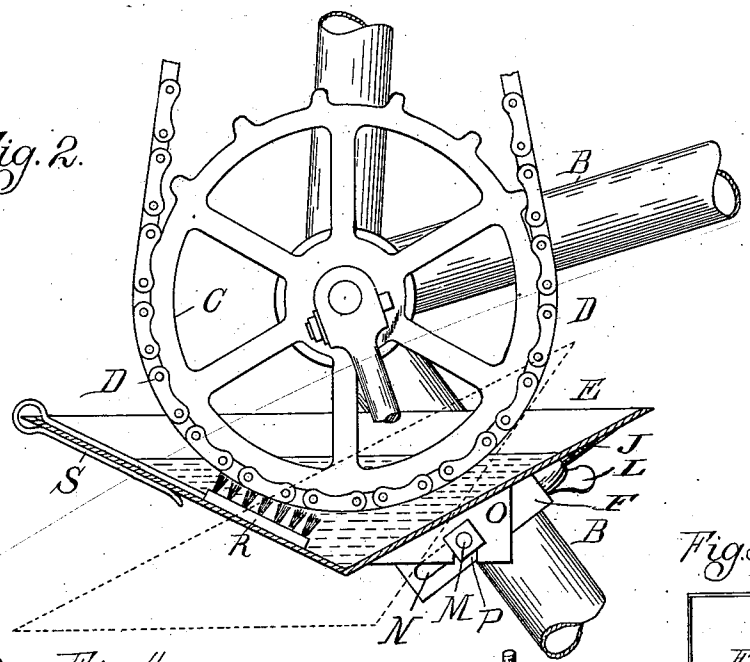


Fig. 3.

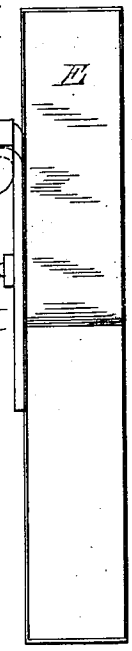
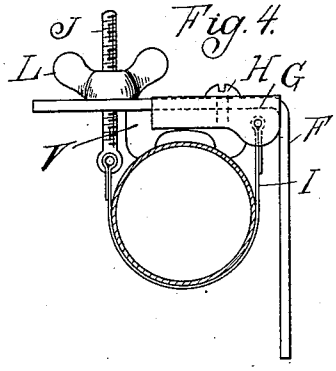


Fig. 4.



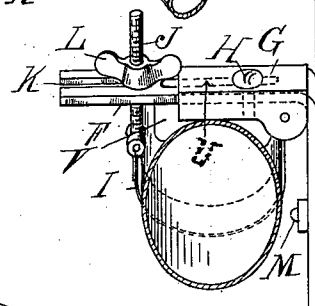
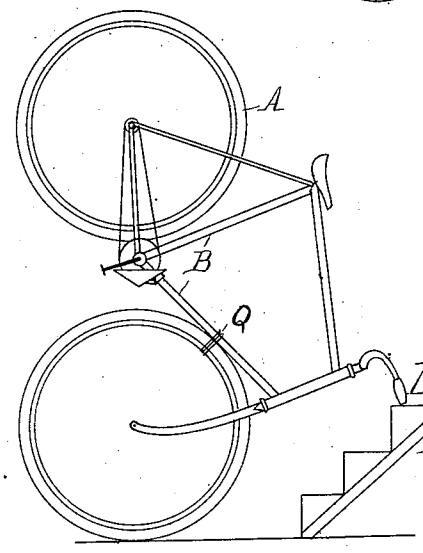


Fig. 1.



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UNITED STATES PATENT OFFICE.

DWIGHT S. COLE, OF LANSING, MICHIGAN, ASSIGNOR TO WALTER LUTHER DODGE, OF CHICAGO, ILLINOIS.

CYCLE-CHAIN CLEANER.

SPECIFICATION forming part of Letters Patent No. 648,724, dated May 1, 1900.

Application filed September 13, 1897. Renewed March 24, 1900. Serial No. 10,094. (No model.)

To all whom it may concern:

Be it known that I, DWIGHT S. COLE, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Cycle-Chain Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention is designed to be a removable appliance with which to effect the cleaning of cycle-chains in a simple and expeditious manner and without removing the chain from the sprocket-wheels.

To this end the invention consists in the novel apparatus designed to carry it out, all as hereinafter described and shown in the drawings, in which—

Figure 1 is a diagram elevation of a bicycle as it may be arranged for cleaning the chain thereof by the use of my device. Fig. 2 is an enlarged vertical section through my improved cleaner as attached to a bicycle. Fig. 3 is a plan of the device. Fig. 4 is a plan of the clamp of the device.

In the drawings, A are the wheels, B the frame, C the crank-shaft sprocket-wheel, and D the chain, of a bicycle, shown in Fig. 1, as it may be placed and supported in position for using my device.

My cleaning device, the operation of which is hereinafter described, is constructed and arranged as follows:

Referring to the drawings, E is a vessel of suitable dimensions to freely admit a portion of the rim of the crank-shaft sprocket-wheel, together with the chain thereon, so that all parts of the chain may successively be immersed as the sprocket-wheels are rotated if the vessel be filled with gasolene or other suitable cleaning fluid. A simple and preferable form for this vessel is to have two of its sides parallel, while the ends are formed by the rise of the curved or doubly-inclined bottom, as shown in Fig. 2, for with this form of vessel it requires a minimum quantity of the cleaning fluid to obtain the desired result. This vessel is provided with means for removably and adjustably securing it to the cycle-frame in the desired relation to the said sprocket-wheel. To this end I provide an adjustable clamping device, which is preferably constructed as follows:

F is a corner-bracket, upon one arm of which is arranged a sliding sleeve G, adjustably secured thereto by the set-screw H, which passes through one side of the sleeve and through slot U in the said arm of F and screws into the block V, one face of which forms part of the sleeve, while its opposite face is suitably formed to rest upon the tube to which the vessel is to be secured. This sleeve has secured to it one end of the clamping-strap I, the other end of which is secured to a tightening-screw J, which passes through a slot K in the said arm of F and has a tightening-nut L. The other arm of the bracket F carries a fastening-screw M, which passes through a slot N in the said arm and clamps an arm O of the vessel, thereby securing the vessel to the corner-bracket. For ease of disconnecting the vessel from the corner-bracket F the arm O of the vessel is preferably made with a slot P, through which the screw M passes.

In practice the vessel E may be readily attached in the proper position to the frame of a bicycle by means of the clamping devices and adjustable support, so that when the bicycle is placed in such a position as to bring the sprocket-wheels into practically-vertical alinement, with the smaller or rear sprocket-wheel uppermost, and supported in this position in any convenient manner (with some bicycles it may be done by reversing the front wheel and handle-bar and resting the bicycle upon the tips of the handles and front wheel, which gives a three-point support, and tying the front wheel and frame together, as at Q, Fig. 1, and then by resting the tips of the handles upon some suitable elevation, as a step or box, the sprocket-wheels may be brought into the desired position) the vessel can be adjusted, if necessary, so that its top is horizontal after the bicycle has been secured in position, and the sprocket-wheels and chain will be left free to be revolved, so that every portion of the chain may be brought successively to the lowest position, and thus be immersed in the fluid with which the vessel may now be filled. The vessel being filled with gasolene or other cleaning fluid and the crank-shaft revolved by hand with one of the cranks,

the chain will be carried through the fluid, and by holding a sponge or brush against it it will be wiped or scrubbed, and a thorough cleaning can be quickly effected. To the end of accomplishing this wiping or scrubbing simply and thoroughly I prefer to insert a brush in the vessel in such manner that it scrubs an immersed portion of the chain, and to this end I construct a brush R, provided with a handle S, which hooks or clamps over the edge of and upon the inner and outer faces of the bottom of the vessel, all in such manner that the vessel holds and presses the brush against the chain and sprocket-wheel. My device thus effects a more thorough cleaning of the chain in a much shorter time and in a cleanlier manner than it can be done in any of the present known ways and at the expense of less cleaning fluid, while no small part of the advantage of its use is that the result is accomplished without removing the chain from the sprocket-wheels and without touching it with the hands.

My device can be made applicable at the smaller sprocket-wheel; but for obvious reasons it is much the simpler way to apply it at the larger or crank-shaft sprocket-wheel; neither is my device limited to the cleaning of chains of bicycles, as it may be applied to the cleaning of the chains of all forms of chain-driven cycles, and the clamp is specially devised to provide all necessary adjustments which the differences in the construction of the various makes may require. Thus it will be seen that the clamping-strap sleeve may be shifted on the arm of the corner-bracket F, and the design of the clamping-strap I and tightening-screw J adapts it to being clamped upon various sizes of tubing; also, the clamping-screw M on the other arm of the said bracket F can be shifted and the vessel E raised or lowered on the screw M as a pivot, the clamping devices thus affording a universal adjustment.

What I claim as my invention is—

1. In an apparatus for cleaning cycle-chains, the combination with a vessel containing a fluid cleaning material, of means for supporting the vessel on the cycle-frame in position to receive and permit movement through the fluid therein of a portion of the sprocket-wheel and chain, said means comprising a clamp adapted to be secured in adjusted positions on the frame.

2. In a chain-cleaner for cycles, the combination of a vessel admitting a portion of the rim of the crank-shaft sprocket-wheel together with the chain thereon and adapted for holding a cleaning fluid, a clamping-support for detachably and adjustably supporting said vessel from the frame of the cycle in the described relation to the said sprocket-wheel, and a scrubbing device in the vessel adapted to act against the chain as described.

3. In an apparatus for the purpose described, the combination of a receptacle, a clamp-bracket for adjustably securing said receptacle to a bicycle-frame in position to receive and permit the rotation of a portion of the sprocket-wheel and chain therein, and a scrubbing device secured to said vessel.

4. In a chain-cleaner for cycles, the combination of the cleaning vessel, the brush secured therein, the supporting-bracket having pivoted connection with the vessel, and the clamp for adjustably and removably securing the bracket to the frame of the cycle.

5. In a chain-cleaner for cycles, the combination of the vessel E, provided with the slotted flange O, the angle-bracket F provided with the slot N, the bolt M passing through said slot and flange O, and the clamping device comprising the block V, the sleeve G adjustably securing said block to the bracket, the strap I secured to the sleeve G, the tightening-screw J passing through a slot in the bracket and the nut L.

6. In a chain-cleaner for cycles, the combination of a vessel, an angle-bracket to which said vessel is adjustably secured, and a clamping device comprising a block adjustably secured to said bracket, and means for securing said block to the cycle-frame.

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

DWIGHT S. COLE.

Witnesses:
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OTTO F. BARTHEL.