

(No Model.)

R. C. FAWCETT.
BICYCLE TOOL.

No. 568,404.

Patented Sept. 29, 1896.

Fig. 1.

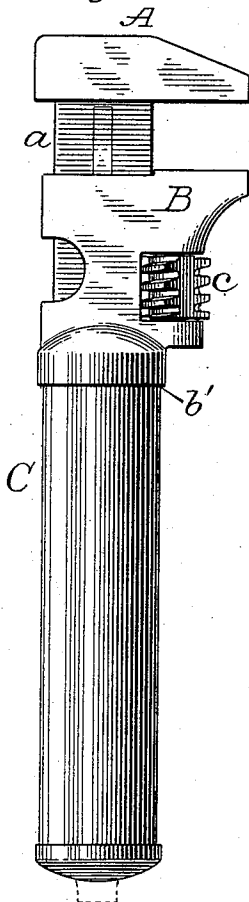


Fig. 2.

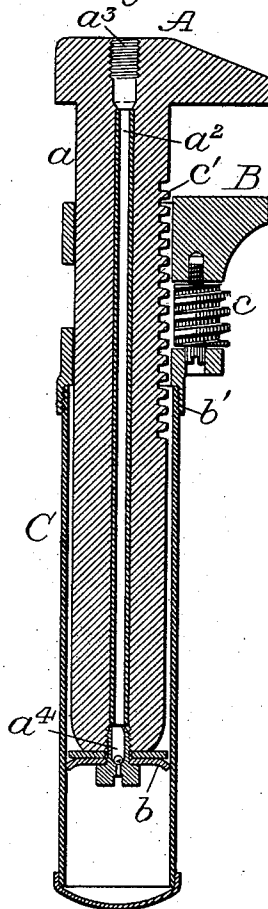


Fig. 3.

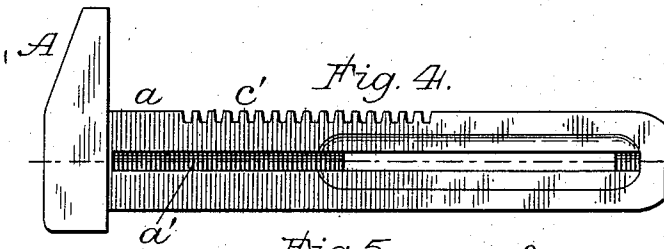
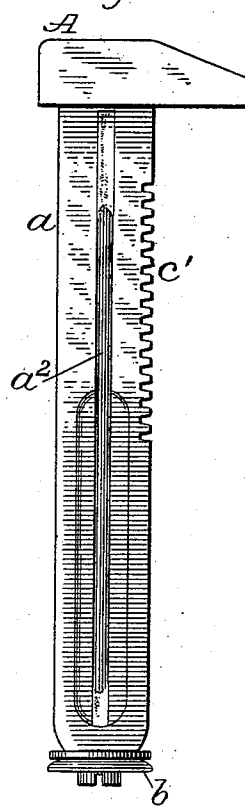
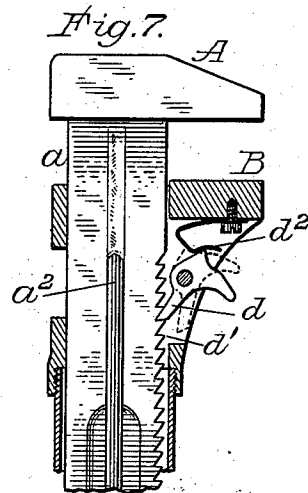
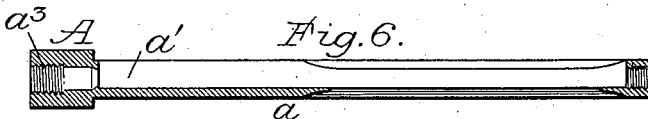


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BICYCLE-TOOL.

SPECIFICATION forming part of Letters Patent No. 568,404, dated September 29, 1896.

Application filed June 23, 1896. Serial No. 596,624. (No model.)

To all whom it may concern:

Be it known that I, ROBERT CROZIER FAWCETT, of Carrollton, in the county of Carroll and State of Ohio, have invented certain new and useful Improvements in Bicyclers' Tools; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention, which pertains to that class of tools having the double capacity of serving as wrenches and air-pumps.

Tools of this general class have been heretofore patented, one instance of which will be found in Letters Patent No. 544,726, issued to me August 20, 1895. In each of such prior tools the handle of the wrench serves also as the cylinder of the air-pump, and in each instance the cylinder must be separated from the inner jaw of the wrench when the tool is used as an air-pump. In the improved tool as now devised by me the pump cylinder or handle is practically a fixture with the inner jaw, although detachable therefrom, as an essential feature in construction and for assembling the parts, as well as to afford access to the pump-piston for repairs, and the inner jaw serves not only as an essential part of the wrench, but also as a slidable guide with relation to the pump-cylinder and to the stem of the wrench, which serves as a piston-rod. This novel use of the inner jaw as a part of the air-pump requires that said jaw be provided with means whereby it may be readily locked to the stem at various points, so that it may cooperate with the outer jaw when the tool is to serve as a monkey-wrench, and also so that it may be readily freed from engagement with the stem when the tool is to be used as an air-pump. The means for so locking and unlocking the inner jaw may be widely varied without departure from my invention, many of the well-known devices employed in so-called "quick-acting" monkey-wrenches being suitable for the purpose, it being only important that the locking device, when not in service, should not be obstructive to the free movement of the stem or the inner jaw when the tool is in use as an air-pump.

To more particularly describe my invention, I will refer to the accompanying drawings, in which—

Figure 1 is a side view of a tool embodying my improvements adjusted to serve as a wrench. Fig. 2 is a sectional view of the same adjusted to serve as an air-pump. Fig. 3 is a side view of the outer jaw of the wrench, with its stem and piston. Fig. 4 is a view of the outer jaw and stem, but without a tube which serves as an air-duct. Fig. 5 illustrates the tube which is inserted laterally into and secured to the stem. Fig. 6 is a longitudinal section of the part shown in Fig. 4. Fig. 7 illustrates a modification of the locking device.

It is immaterial to the main feature of my invention whether the compressed air be discharged from the end of the wrench-handle or from the head of the wrench, although I prefer the latter, as in my prior tools, and therefore the outer jaw A has a flat-sided tubular stem *a*, as in my prior patent. Instead, however, of having a solid bored stem, I now have it initially provided with a longitudinal channel at one side, as at *a'*, Fig. 4, for the reception of a tube *a²*, which when soldered in place serves as an air-duct in proper communication with the socket-coupling *a³* at the head or outer jaw, and with a check-valve chamber *a⁴* at the piston end of the stem, thus economically securing a light strong tubular stem, which, having a piston *b* at its end, serves as a piston-rod. This stem as a part of the wrench has one edge adapted to be engaged by a suitable locking device carried on the inner jaw B.

The stem *a*, as a piston-rod, must be free to slide for cooperating with the tubular handle C, which also serves as a pump-barrel. As a novel feature, the barrel or handle C is coupled directly to the base of the inner jaw, and whether used as a mere handle or as a pump-barrel it might be permanently secured thereto; but for the purpose of assembling the parts, and for giving access to the piston *b*, the barrel is detachably but firmly coupled by means of a screw-threaded connection, as at *b'*.

The handle or barrel and the inner jaw being thus connected, the slidable jaw serves as a guide for the pump-barrel with relation to the stem and the piston.

If the locking device be of the rotative screw type, as, for instance, the screw at *c*,

then the edge of the stem is screw-threaded, as at c' , but in all cases there must be a capacity for complete unlocking, so that the inner jaw may slide freely on the stem when serving as a part of the pump. As shown in Fig. 2, the screw c has no threads at one side, they being cut away, so that when that portion of the screw lies next to the threaded edge of the stem the inner jaw will be free to slide on the stem, and also so that said jaw can be freely moved to and fro for initially setting it to a nut, as in all quick-acting wrenches, the screw then being turned into engagement with the stem, if need be, for a closer adjustment of the jaws and in locking them for wrenching duty.

Another form of locking device is shown in Fig. 7, wherein a spring-pawl d coöperates with ratchet-teeth d' at the adjacent edge of the stem a , the spring d^2 of the pawl being double-acting for holding the pawl either in its operative or inoperative position, thus providing for the quick-acting-wrench capacity, and also for releasing the inner jaw for service as a guide for the handle or cylinder when the latter is used as a pump-barrel.

It will be seen that the edge of the stem need be threaded or notched only when the coöperating locking device involves that form of locking arrangement, and that it is immaterial to my invention what form of locking device may be employed, so long as the inner jaw may be locked for wrench duty and unlocked for pumping duty, and renders it unnecessary to detach the tubular handle from

the wrench-head in order that it may serve as a pump barrel or cylinder.

With the implement constructed as described, and used as an air-pump, the usual flexible tube is employed between the socket-coupling at a^3 and the tire to be inflated, the head or outer jaw serving as a grasping-base for the pump, as with my prior implements, but the outer jaw would serve fairly well as a handle for the pump if the socket-coupling and check-valve should be located at the end of the handle or cylinder, as indicated in dotted lines in Fig. 1, in which case the stem a need not be tubular.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a combined wrench and air-pump, the combination substantially as hereinbefore described, of an outer jaw having a stem provided with a piston, an inner jaw freely slideable on said stem, a tubular handle which also serves as a pump-barrel firmly attached to the base of said inner jaw, and a suitable device for not only locking said inner jaw to the stem for enabling the two jaws to coöperate for wrench-service, but also for unlocking said jaw, for enabling it and the handle or barrel to slide freely on the stem and coöperate for service as an air-pump.

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