No. 849,227. PATENTED APR. 2, 1907.

A. GENELLY & B. GILBERTI.

BICYCLE PUMP.

APPLICATION FILED MAR. 28, 1906.

Fig. 1.

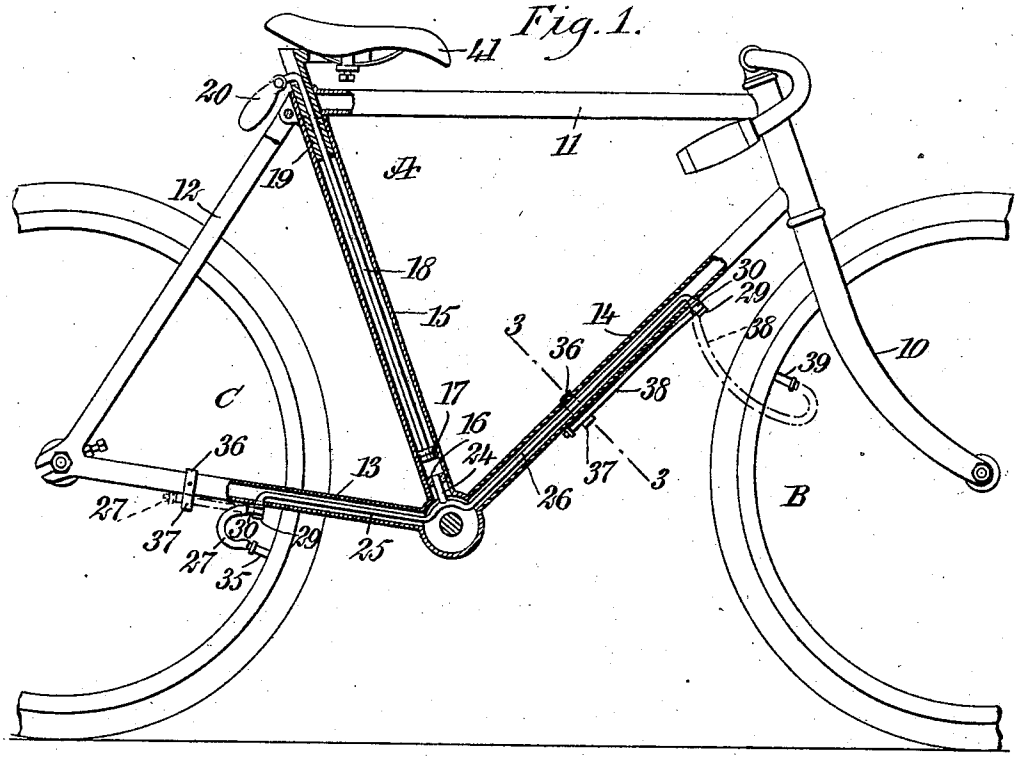



Fig. 2,

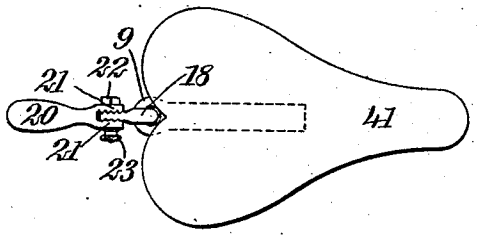



Fig. 3,

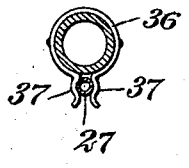



Fig. 4,

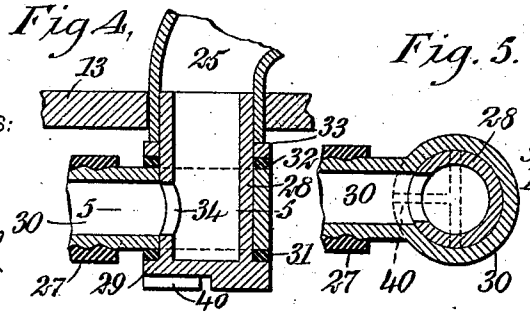



Fig. 5.

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# UNITED STATES PATENT OFFICE.

ANGELO GENELLY AND BERNARDO GILBERTI, OF LOS BANOS, CALIFORNIA.

## BICYCLE-PUMP.

No. 849,227. Specification of Letters Patent. Patented April 2, 1907.

Application filed March 28, 1906. Serial No. 308,467.

*To all whom it may concern:*

Be it known that we, ANGELO GENELLY and BERNARDO GILBERTI, both citizens of the United States, and residents of Los Banos, in the county of Merced and State of California, have invented a new and Improved Bicycle-Pump, of which the following is a full, clear, and exact description.

This invention relates to pumps adapted for inflating bicycle-tires, an object of the invention being to incorporate a pump in the frame of a bicycle, so that the pump will always be convenient for use and readily accessible and will obviate the necessity of carrying a separate pump, which would be liable to be mislaid or lost.

With this and additional objects in view the invention consists in novel features and combinations of parts, which will be more fully described hereinafter, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view of a standard bicycle partly broken away and showing our invention applied thereto. Fig. 2 is a plan view of a bicycle-saddle, showing a pump-handle in its extended operative position. Fig. 3 is a section of one of the members of the bicycle-frame, showing a clip used for supporting one of the elements of the pump, and Figs. 4 and 5 are sectional views showing details of the invention.

At A, Fig. 1, is shown a bicycle-frame of standard type, to which are journaled the front and rear wheels B and C, respectively. The frame A comprises the front forked member 10, the upper horizontal brace 11, the backstays 12, the lower forked rear brace 13, the forward diagonal brace 14, and the center brace 15. These members following the usual practice are made of tubular form. The center brace 15 we employ as the cylinder of our improved pump, and to this end the lower end of the brace is closed by means of the plug 16. Adapted to slide within the cylinder 15 is a piston 17, secured to the lower end of the piston-rod 18. The latter at its upper end passes through the saddle-post 19, which is fitted into the centre brace 15 and secured in the usual manner. The upper end of the piston-rod 18 is bent back at an angle, and to this end the pump-handle 20 is secured. The pump-handle 20 is formed with two ears 21, having their adjacent faces serrated and being adapted to engage serrated surfaces on the end of the piston-rod 18. A bolt 22 passes through the ears 21 and the end of the piston-rod, and the thumb-nut 23, threaded onto said bolt is adapted to clamp the handle 20 onto the piston-rod. The piston 17, which may be of any suitable construction, is preferably formed of flexible material and arranged in the usual well-known manner to tightly engage the walls of the cylinder 15 on the downward stroke of the pump, but to permit the passage of air past the piston into the lower part of the cylinder on the upward stroke of the pump. It will be understood, of course, that the piston-rod 18 fits loosely in the bore of the seat-post 19, so as to permit air to be fed into the pump-cylinder. A tube 24 is fitted in the plug 16, and from this tube two tubes 25 and 26 lead, respectively, through the members 13 and 14 of the bicycle-frame. The tube 25 passes out of the member 13 at a convenient point adjacent to the rear bicycle-wheel and is provided with a flexible tubing 27, which is adapted to be connected to the nipple 35 of the rear bicycle-tire.

The method of coupling the flexible tubing 27 to the tube 25 is illustrated in section in Fig. 4, also in Fig. 5, which is a section on the line 5 5 of Fig. 4. A tubular cap 28 is brazed or otherwise secured to the end of the tube 25. This cap is formed with a flanged head 29. Mounted to revolve on the body of the cap is the coupling-head 30, which is held in air-tight engagement therewith by means of two gaskets 31 and 32, respectively, mounted on the cap at opposite sides of the head. The cap is also provided with a washer 33, which bears against the end of the tube 25 and forms a flat bearing-surface for the gasket 32. Communication between the cap 28 and the coupling-head 30 is had through an opening 34 in the side of the cap. The flexible tubing 27 is attached to the coupling-head at one end and is provided at the other end with means of ordinary type for coupling it to the nipple 35 of the rear bicycle-wheel tire. When not in use, the flexible tubing 27 may be detached from the nipple 35 and held dormant against the bottom of the frame member 13, by means of a clip 36, in the position

shown by broken lines in Fig. 1. This clip, as best shown in Fig. 3, consists of a spring-metal band secured to the frame member and provided with depending fingers 37, adapted to engage the flexible tubular member 27.

The tube 26 emerges from the frame member 14 at a point convenient to the front wheel B of the bicycle. A flexible tubing 38 is coupled to the tube 25 by means of a rotary coupling-head 30 in the same manner as the flexible tubing 27 is coupled to the tube 25 and provides means for connecting the tube 26 with the nipple 39 of the tire of the front bicycle-wheel. A clip 36 on the frame member 14 provides for holding the flexible tubing 38 when not in use against the under side of the frame member 14, as shown in Fig. 1.

The operation of the pump will be evident. The handle 20 may be raised to any desired angle and secured by means of the clamping-nut 23, and the flexible tubings 27 and 38 may be coupled to the nipples 35 and 39, respectively, whereupon the pump may be operated in the usual manner to force air into the bicycle-wheel tires.

It will be observed that the head 29 of the cap 28 is formed with a slot 40, which indicates the position of the opening 34, so that the operator will know in what direction to turn the coupling-head 30 in order to bring it in line with this opening, and thus make connection therewith. In practice the cap 28 may be so placed that when the flexible tube is held by its clip in inoperative position the coupling-head 30 will not communicate with the opening 34. Thus the tubes 25 and 26 will be normally closed, and when the operator desires to pump up one of the tires he will open the desired tube by rotating the corresponding coupling-head 30 until the longer axis of said head lies parallel with the slot 40 in the head 29.

When the pump is not in use, the clamping-nut 23 may be unscrewed, permitting the handle 20 to be lowered and secured in a convenient position below the saddle 21 of the bicycle, so as not to interfere with the rider.

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

1. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating with said center brace, said tubular member being formed with a forwardly-extending branch and a rearwardly-extending branch, a pair of flexible tubes connected respectively to said forwardly and rearwardly extending branches, said flexible tubes serving to connect said center brace respectively with a pair of tires to be inflated, means for holding said flexible tubes in dormant position against said bicycle-frame, and means for automatically closing communication between said center brace and said flexible tubes when the latter are in said dormant position.

2. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, a coupling-head mounted to rotate on said cap, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, and means for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position.

3. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, a plug closing the lower end of said center brace, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, a coupling-head mounted to rotate on said cap, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, a spring-clip adapted for securing said flexible tube in dormant position against the said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position, and means serving to indicate the position of said opening.

4. The combination of a bicycle-frame provided with a center brace adapted to serve as a pump-cylinder, a valvular piston mounted within said center brace, means controllable at will for operating said piston, said center brace being closed at its lower end, a tubular member communicating at one end with said center brace, a cap secured to the other end of said tubular member, said cap being formed with a flanged head, a washer mounted on said cap, a coupling-head

mounted to rotate on said cap between said flanged head and said washer, gaskets fitted respectively between said flanged head and said coupling-head and between said washer and said coupling-head, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said tubular member, and a spring-clip adapted for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube, when the latter is in said dormant position, said flanged head being formed with a slot serving to indicate the position of said opening.

5. The combination of a bicycle-frame provided with a tubular member adapted to serve as a pump-cylinder, a valvular piston mounted within said tubular member, a rod connected to said piston, a saddle-post fitted into said tubular member and formed with an opening adapted to receive said rod, a handle adjustably secured to said rod, said tubular member being closed at its lower end, a pipe communicating at one end with said tubular member, a cap secured to the other end of said pipe, said cap being formed with a flanged head, a washer mounted on said cap, a coupling-head mounted to rotate on said cap between said flanged head and said washer, gaskets fitted respectively between said flanged head and said coupling-head and between said washer and said coupling-head, a flexible tube secured to said coupling-head, said flexible tube being adapted to be coupled to a tire to be inflated, said cap being formed with an opening adapted to provide communication between said flexible tube and said pipe, and a spring-clip adapted for securing said flexible tube in dormant position against said bicycle-frame, said opening in said cap being placed in such position as to close communication between said tubular member and said flexible tube when the latter is in said dormant position, said flanged head being provided with a slot serving to indicate the position of said opening.

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

ANGELO GENELLY.
BERNARDO GILBERTI.

Witnesses:
C. F. BERTHOLF,
ANTONIO PADUTA.