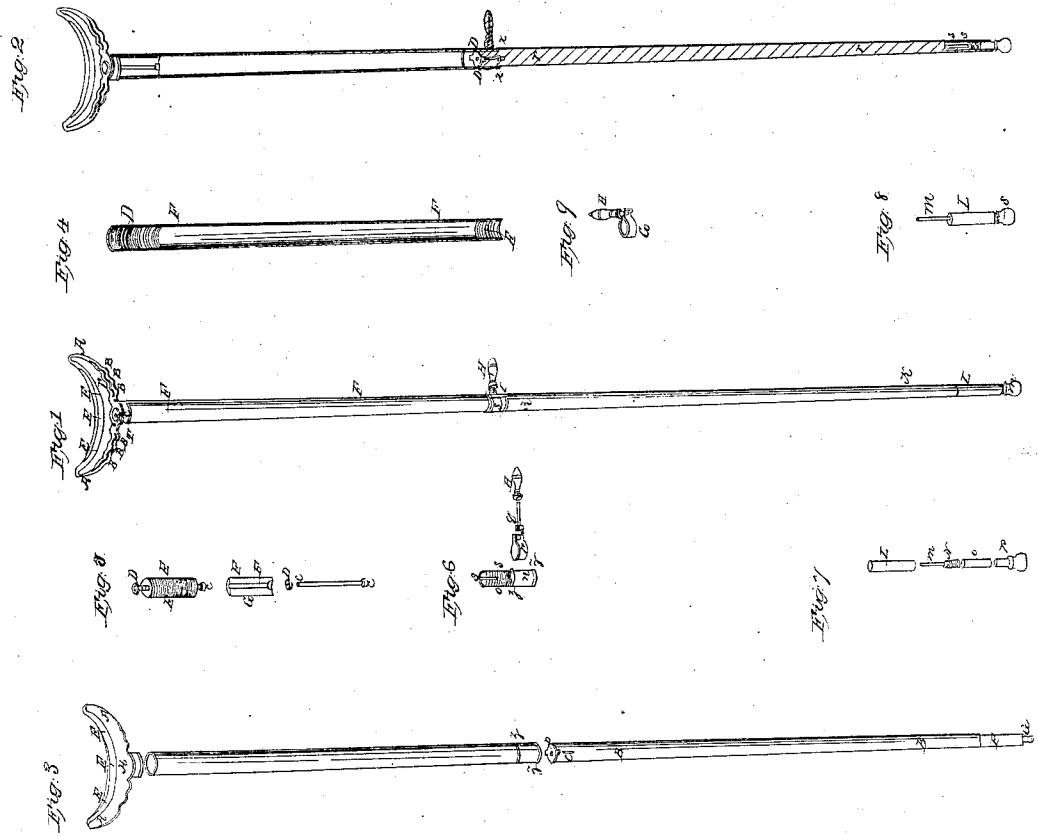


J. S. Gallagher, Jr.

Crutch.

No 9,518.

Patented Jan. 4, 1853.



# UNITED STATES PATENT OFFICE.

JOHN S. GALLAHER, JR., OF WASHINGTON, DISTRICT OF COLUMBIA.

## CRUTCH.

Specification of Letters Patent No. 9,518, dated January 4, 1853.

*To all whom it may concern:*

Be it known that I, JOHN S. GALLAHER, Jr., of Washington city, District of Columbia, have invented and made certain new 5 and useful Improvements in Crutches or Supports for Cripples; and I do hereby declare that the following is a full, clear, and exact description of the method of construction and mode of operating the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a view of the crutch as completed. Fig. 2 is a vertical section of the 15 crutch, showing the arrangement of the several parts. Fig. 3, is a view showing the crutch detached in three parts. Fig. 4, shows section of the upper or tubular part of the crutch. Fig. 5, shows upper parts of 20 the crutch dissected. Fig. 6, shows the arrangement of the handle or rest part of crutch. Fig. 7, shows lower or end part of crutch dissected. Fig. 8, shows the lower 25 parts arranged together. Fig. 9, shows adjustable revolving handle band, or collar.

To enable others to be skilled in the use and application of my invention and improvements, I will proceed to describe the construction and operation thereof, the 30 nature and principles of which consist in constructing a crutch or support for cripples, with a compound corrugated elliptical spring and air cushion top, or rest, which top is arranged to revolve horizontally upon the staff part of the crutch. This staff part may have its upper half 35 made hollow or tubular, so that the lower part may close up, or slide into it, for the greater convenience and advantage in traveling; so also, as to avoid the danger of 40 breaking. Or the staff part, if desirable, may be made in one solid piece or length, not to close up or fold; and, if constructed as last mentioned, the staff may be made 45 small and of light material, and have running longitudinally through its center a small iron, steel, or other suitable rod to strengthen the staff.

The advantage and utility of my improvements consists in constructing the top or armpit part of the crutch, A, A, E, E, E, Fig. 1, of German silver, or other suitable metal, and forming the top into a kind of semi-elliptical spring, with corrugations B, 50 B, B, B, B, and slots P, P, Fig. 1. This metal part, is thickest at the staff or socket

part o, o, o, and tapering off toward end parts. This thickness may be varied to suit the strength required. At C, is shown cap or rim part soldered onto the spring part. This cap or rim part fits nicely to the top part of staff, merely to play loose enough to revolve nicely without working too loose. Combined with this spring part of the top, and arranged within the same, is an air 60 cushion A, A, A, Fig. 3, of india rubber, or of any other suitable material. By this combination of corrugated, semi-elliptical spring and air cushion, great ease, comfort, and convenience are attained; for the armpit, instead of having to press upon the hand support or top of the ordinary crutch, is relieved of this pressure, and instead, rather swings, or is eased off the staff, by the spring or air cushion, and in the movement of the 65 person, all pressure against the armpit and muscles of the shoulder is avoided. The spring top also gives downward, forward 70 and backward, with every motion, or movement of the body, and thus preventing friction and galling of the armpit, and creating no deformity, or throwing up of the shoulders out of their sockets. The objects of 75 having the top to revolve, is to avoid sudden concussion, or bruising of the flesh, and straining of the muscles, in the event of accidentally stumbling, or twisting, or slipping around of the body. The top of the crutch in such instance, instead of twisting (and thereby bruising the shoulder, straining 80 the cords or muscles of the arm) remains in 85 its place under the arm, while the staff of the crutch will revolve in the socket of the top, in the act of twisting or stumbling.

Another feature and advantage in my 90 improved crutch is the having a revolving and adjustable hand rest or handle H, attached to a band G, by screw and nut I, as shown in Figure 1, and as represented dissected in Fig. 6. This handle, folds upward, as seen at Fig. 9, and revolves and accommodates itself, to the movements or position of the hand. By this arrangement, there is no strain upon the muscles, or no cramping or fatiguing of the hand in grasping 95 hold of the crutch, as would be the case otherwise in using the ordinary crutch staff, where the grasp of the hand, is oblique, and consequently, much straining, cramping, and discomfiture ensues.

Another important desideratum is the improved compound extension ferrule and elas- 100 105 110 115

tic bulb end. By this arrangement the length of the crutch may be altered, from one to two inches, or less, and the advantage of the gutta percha, or other elastic bulb, is, 5 that the end of the crutch will not slip, or cut, or indent anything upon which it is placed, besides, too, noise and stamping are prevented. This extension ferrule, is shown in detail and dissected as seen at Fig. 7, L 10 is the sheath or outward ferrule, fitting over F part, Fig. 3, and also incasing parts m, n, o, p, Fig. 7. Fig. 7, m, is a screw plug, the end, m, of which, screws into the end of staff, as shown in Fig. 2, at s, s, and the 15 thread or screw part N, Fig. 7, screws half-way into the socket ferrule o, into which at the lower end, is fitted tight the elastic bulb P.

As heretofore stated, the upper part or 20 half of the crutch may be made of a hollow round tube of silver or other metal as shown in sections at Figs. 2 and 4, and at E, Fig. 4, is shown screw thread or chasing any desired length; generally from one half 25 to one inch is sufficient, into the ferrule screw, or chasing at D, is fitted a screw plug E, E, Fig. 5, with a hole through its whole length G, F, F, Fig. 5, into which is fitted to work or play smoothly, (not too loosely), 30 a headed bolt C, C, with screw and nut C, D, Fig. 5, to which headed bolt is attached the top of the crutch so as to admit of the tops revolving and keeping the top from twisting, or working out of its proper position 35 and by which arrangement sufficient strength and safety are acquired in connecting the top and staff part of crutch.

The arrangement of the expanding and closing of the crutch is as follows: At Fig. 40 6, o, n, is a socket, tube of from one and a half to two inches in length. Half of it at o

is chased with a thread, which fits or screws into (E, Fig. 4). At s, s, Fig. 6, are slots, cut opposite, to each other in the form of the letter L, into these slots, works or fits 45 the cap catch, D of lower part of crutch as shown in Figs. 2 and 3. In drawing out the lower half of crutch, it is turned either right or left, which ever way the catch slots s, s, are cut, and thus is prevented from 50 slipping upward again. And for the better security, and prevention of this folding up in the act of walking or using the crutch, I have also a little contrivance, or latchet ketch H, H, Fig. 2, arranged in a slot in the 55 lower half of crutch at e, Fig. 3. By this arrangement the crutch is kept fully extended and securely fastened while in the act of using it. Figs. 3 and 6 z, z, z, z, are attached rings to the socket tube, which prevent the collar or handle band P, Fig. 6, from falling off or slipping down the staff.

Having described the construction and operation of my improved crutch, what I claim, and desire to secure by Letters Patent, is—

1. The revolving, plain, or corrugated spring top, in combination with an air cushion, substantially as above described.
2. I claim in combination with the revolving spring top, the sliding joint, applied to the staff of a crutch, in the manner, and for the purpose described.
3. I claim in combination with the sliding staff the revolving handle, extension ferrule, 75 and elastic bulb, as above described and set forth in the accompanying drawing.

JOHN S. GALLAHER, JR.

Witnesses:

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JOHN M. CLARKE.