

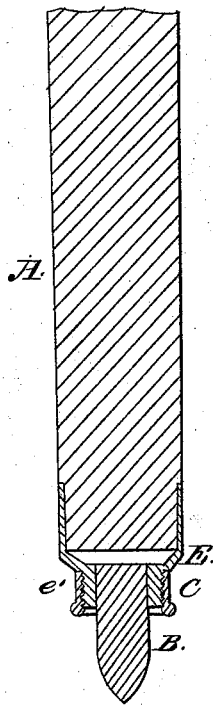
*A. Bickel,*

*Crutch.*

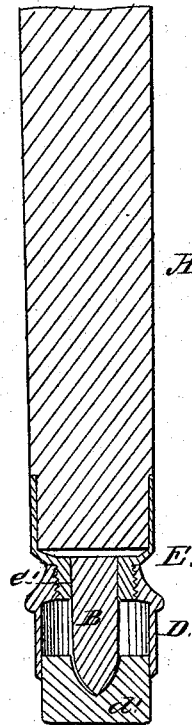
*N<sup>o</sup> 47,695.*

*Patented May 16, 1865.*

*Fig. 1*



*Fig. 2*



*Witnesses:*

*Benjamin  
Las Vissuero*

*Inventor.*

*August Bickel*

# UNITED STATES PATENT OFFICE.

AUGUST BICKEL, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN CRUTCHES.

Specification forming part of Letters Patent No. 47,695, dated May 16, 1865.

*To all whom it may concern:*

Be it known that I, AUGUST BICKEL, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Crutches for Invalids; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 are longitudinal central sections of the lower end of a crutch having my improvement applied thereto, Fig. 1 showing the spur exposed as when the crutch is to be used on icy ways, and Fig. 2 showing the elastic buffer applied over the spur, as when the crutch is to be used in dwellings.

Like letters of reference indicate the same parts when in both figures.

The nature of my invention consists in making a crutch readily convertible for use both on icy ways and within dwellings, as occasion may require, by means of a buffer adapted to be readily screwed upon the lower end of the crutch-staff, so as to cover the spur and present an imperforate elastic foot, which will not indent the floors or pierce the carpets of dwellings, or as readily be screwed off the staff, so as to uncover the spur for walking on icy ways, the said screw-thread on the staff in the latter case being protected from injury by a readily-removable guard-thimble, both the said devices being constructed and applied as hereinafter described and specified.

In the drawings, A is the lower part of the crutch-staff; B, the spur; C, the guard-thimble, and D the buffer.

The lower end of the crutch-staff fits permanently in a brass socket, E, which has a screw-thread, *e'*, around its lower end, adapted to receive over it either the guard-thimble *c'* or the buffer D, as occasion may require. In the lower end of the socket E the spur B, which is made of steel, is inserted and soldered fast, so as to present a projecting sharp point at its extreme lower end, as seen in the drawings.

The guard-thimble C is a short hollow cylinder of brass, which can be readily screwed upon the socket E, so as to serve the purpose of protecting the screw-threads of the latter

from injury in using the crutch without the buffer.

The buffer consists of a short hollow cylinder of brass, with a contracted neck or upper end formed and screw cut on its inner side, so that it can be readily screwed into connection with the lower end of the socket E, while its lower end has fixed in it an imperforate short cylinder of vulcanized or elastic gum, *d'*, which projects downward and outward about half an inch, more or less, so as to serve as a soft elastic foot when applied to the crutch, and prevent the spur B from coming into contact with a floor or carpet in using the crutch.

The devices are simple of construction, add but a trifle to the cost of a crutch, and can be readily adjusted by the invalid as occasion may require, while the removed guard-thimble C or the buffer D can be conveniently carried in the invalid's pocket, thus enabling him to convert the crutch into either of the required conditions in a few moments, and without objectionably or even perceptibly varying its length.

I do not desire to claim, broadly, the application of a buffer and of a spur to a crutch, as both have been used before in the same crutch; but,

Having fully described my improvement and shown its utility, what I claim as new therein of my invention, and desire to secure by Letters Patent, is—

1. The employment of a removable buffer, D, in combination with the spur B, fixed rigidly in the lower end of the crutch-staff A, as described, the said buffer being constructed so as to be applicable over the spur in the manner described and set forth, for the purpose specified.

2. The employment of the removable guard-thimble C, in combination with the spur-socket E on the lower end of the crutch-staff A, as described, the same being constructed so as to be applicable in the manner and for the purpose set forth.

AUGUST BICKEL.

Witnesses:

BENJ. MORISON,  
JAS. WINSMORE.