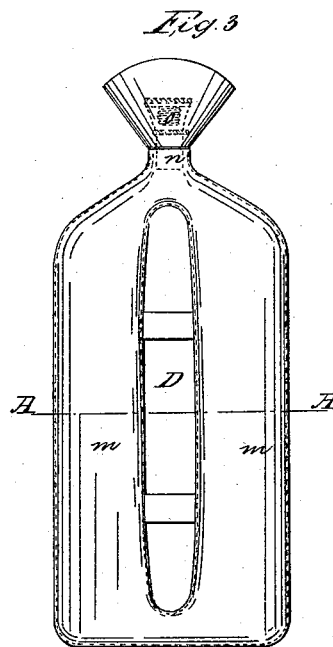
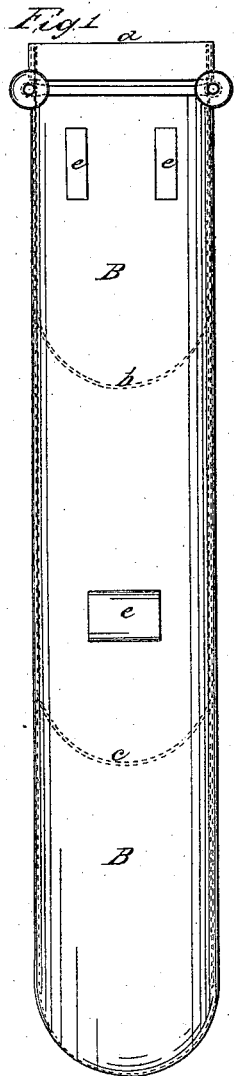
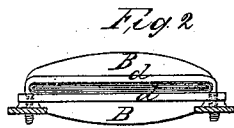


*J. Chapman,*

*Bandage.*

*N<sup>o</sup> 46,535.*

*Patented Feb. 21, 1865.*



*Witnesses*  
*George Kasetaria*  
*S. C. Squire*

*Inventor*  
*J. Chapman*

# UNITED STATES PATENT OFFICE.

JOHN CHAPMAN, OF SOMERSET STREET, PORTMAN SQUARE, COUNTY OF MIDDLESEX, ENGLAND.

IMPROVEMENT IN MEANS FOR APPLYING HEAT AND COLD IN THE TREATMENT OF DISEASES.

Specification forming part of Letters Patent No. 46,535, dated February 21, 1865.

*To all whom it may concern:*

Be it known that I, JOHN CHAPMAN, M. D., of Somerset Street, Portman Square, in the county of Middlesex, England, have invented an Improved Apparatus for Treating Diseases by Modifying the Temperature of Different Portions of the Spinal Region; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plane view of a "spine-bag" with three separate or independent compartments; Fig. 2, an elevation of the clamp used in closing the mouth of this bag. Fig. 3 is a plane view of a bag especially designed for applying hot water or other fluids; Fig. 4, a transverse section of this bag at the line A A.

Like letters refer to corresponding parts in the several figures.

The nature of my invention consists of an improved apparatus for advantageously and conveniently applying heat and cold to the nervous centers along the back, including the spinal cord, and the ganglia of the sympathetic nerve on each side of it, for the purpose of increasing and decreasing the circulation of the blood in different parts of the body and thereby curing certain diseases.

It is well known that the sympathetic nerve, sometimes called "the nervous system of organic life," presides over those processes by which the body is developed and sustained. The power of this nerve to control the action of the blood-vessels has been termed its "vasomotor function." But the sympathetic and the cerebro-spinal nervous systems are intimately related, and in some parts indistinguishable both in structure and function; hence when the nervous influence which is exerted over the several organs is abnormal either in kind or degree the most effective method of restoring its healthy condition is by simultaneously acting upon both systems of nerves. To be able to control these systems is to be able to exert a curative power over a large number of diseases. This control or power of controlling the circulation of the blood, which is the chief object of my invention, is obtained by modifying the temperature of the spinal region at different points, the amount of heat and cold most beneficial to apply in any given

case depending mainly upon the character of the disease. In practice I exercise the desired control by the combined or independent application of hot and cold substances and fluids—as, for instance, ice and warm water—to the region of the spinal cord by means of bags formed especially for the purpose of india-rubber, or other flexible water-proof materials. These "spine-bags" are divided into two or more compartments or cells by means of interior partitions, or by means of clamps applied to the exterior thereof, the said compartments being formed independent of, or communicating with, each other, as may be desired.

The bag B (illustrated in Fig. 1) has independent cells or compartments. The different compartments have each a mouth at *a*. The first compartment terminates at the dotted lines *b*, and the second at the dotted lines *c*, while the bag B, to the under side of which the other two compartments are attached near their bottoms, forms the third compartment. To prepare for the application, I fill the deepest compartment of the bag to *c*, and then the second compartment to *b*, and then the first to nearly the top, when the mouths are closed by the clamp *d*, as clearly shown in Fig. 2. Similar clamps may also be employed just below the dotted lines *b* and *c*, and these are especially needed when it is desired that the contents of the several compartments should be of different degrees of heat. For convenience in securing spine-bags to the body the loops *e* are attached, as shown in Fig. 1.

Instead of a spine-bag with separate or independent compartments, a simple bag may be employed and the desired number of compartments formed by means of clamps *f*, applied transversely to the exterior. This bag, which is flat when empty, becomes oval when sufficiently filled for use, and the clamp pressing the front and back aids it in maintaining an oval form. After putting a certain quantity of ice, water, or other material into the bag a clamp is applied, thus hermetically sealing the lower compartment. The other cells are formed and filled in the same manner and the mouth of the bag closed by a clamp, as shown in Figs. 1 and 2.

When it is desired to make application

near, but not upon, the spinal cord, I form a bag, D, Fig. 3, consisting of two or more compartments, *m*, which communicate at the bottom and top. This bag has a mouth or nozzle, *n*, through which the hot or cold fluid is poured. This mouth is closed by means of a screw, *o*, similar to those employed in closing the nozzle of india rubber bags used as foot-warmers.

Having thus described my invention, I wish it understood that I do not confine myself to the exact form of constructing spine-bags illustrated and set forth, for that may be considerably modified without essentially departing from its spirit. At the same time I am aware that flexible water-proof bags have been previously used for applying heat and cold to different parts of the human body; but

What I claim, and wish to secure by Letters Patent, is—

1. The manner of applying heat and cold, solids or fluids, by means of spine-bags composed of india-rubber or other water-proof flexible material, when said bags are divided into two or more cells or compartments, whether such cells or compartments are formed by the pressure of clamps upon the exterior or by the use of one or more interior partitions.

2. Spine-bags for making hot applications when such bags are composed of two or more tubular compartments.

JOHN CHAPMAN.

Witnesses:

GEORGE HAZELTINE,  
S. E. SQUIRE.