

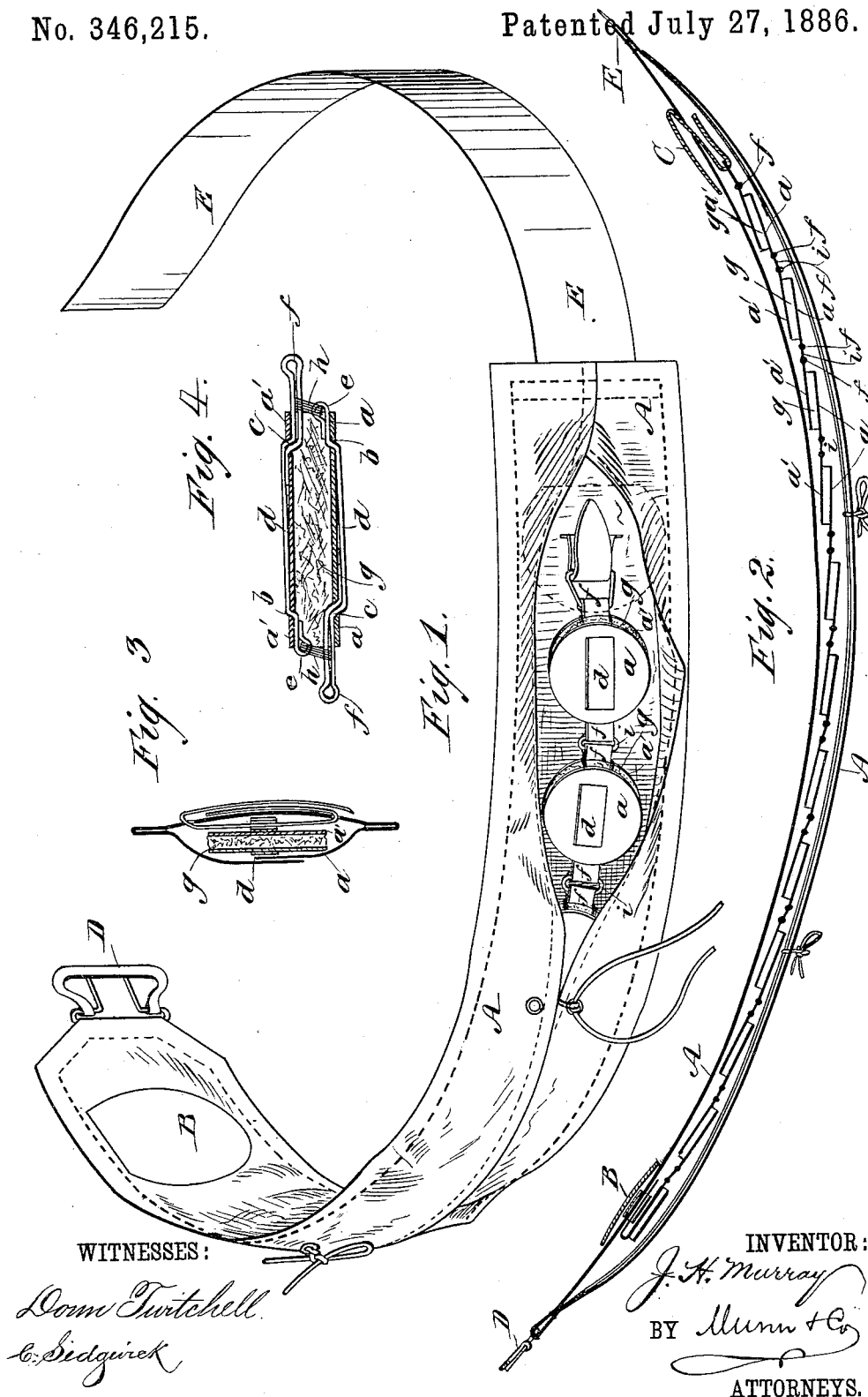
(No Model.)

J. H. MURRAY.

GALVANIC BELT.

No. 346,215.

Patented July 27, 1886.



UNITED STATES PATENT OFFICE.

JAMES H. MURRAY, OF HOPKINS, MO., ASSIGNOR TO DANA A. SARGENT,
GEORGE D. BOWMAN, AND JOHN H. MARTIN, ALL OF SAME PLACE.

GALVANIC BELT.

SPECIFICATION forming part of Letters Patent No. 346,215, dated July 27, 1886.

Application filed September 2, 1885. Serial No. 175,998. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. MURRAY, of Hopkins, in the county of Nodaway and State of Missouri, have invented a new and Improved Galvanic Belt, of which the following is a full, clear, and exact description.

The object of my invention is to utilize the prophylactic and therapeutic qualities of galvanic currents; and to this end the invention consists of a series of metal plates which will produce an electric current when acted on by an exciting-liquid, said plates being placed in pairs and separated by a cotton or woolen fabric, the pairs of plates being connected in series, as will be hereinafter explained, the ends of the chain formed by the connected plates being in electric communication with two body contact-points.

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

Figure 1 is a view of my improved galvanic belt, a portion of the covering being drawn back to disclose the interior construction. Fig. 2 is a longitudinal sectional view of the inclosing case, illustrating the galvanic chain in diagram. Fig. 3 is an enlarged cross-sectional view illustrating the construction and manner of connecting one of the contact-points, and Fig. 4 is an enlarged longitudinal sectional view of one of the elements of the chain.

In the manufacture of a belt to be used to carry my invention into practical use, I take a number of zinc and copper plates or disks, *a a'*, respectively, and in each plate I puncture two slots, *b* and *c*, and through the slots so formed I insert a copper strip, *d*, one end of which is simply bent under to form a loop, *e*, while the other end is bent back and under to form the loop *f*, the bent end being inserted through the slot *c* beneath the body of the strip *d*, as best shown in Fig. 4.

The zinc and copper plates or disks prepared as described are united in pairs, the disks however being separated by a fibrous insulating material, *g*, which is preferably a cotton or woolen fabric, the disks being secured in place by thread or silk, (shown at *h*,) which

passes through the loops *e* and through the opening between the body of the strip *d*, and that portion of the strip which is bent under to form the loop *f*. A pair of disks, united as described, constitute one element of my belt, the necessary number of elements to form the belt being connected by wires or links *i i*, which connect the zinc disk of one element to the copper disk of the next element.

The chain of elements formed and connected as described is inclosed in a water-proof sack, *A*, made, preferably, of an insulating material, and upon the face of this sack which is to rest against the body there are placed two contact-surfaces *B* and *C*, which are in electrical contact with the galvanic chain described, the point *C* being connected to the copper disk of the element at its end of the chain and the point *B* being connected with the zinc disk of the element at the other end of the chain.

The sack *A* is provided with a buckle, *D*, and a strip of webbing, as *E*, so that it may be readily secured about the body.

If such a chain as has been described is immersed in an acid bath, preferably of ordinary vinegar, a strong current will be generated in each element, and, as is well known, the current given off by the end elements of the chain will be equal in strength to the combined strength of the currents generated in the individual elements.

In wearing this galvanic belt care should be taken that the acid-absorbing material should not become dry, and to that end the chain should be moistened at least every forty-eight hours.

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

1. The herein-described galvanic chain, consisting of a series of elements each composed of a zinc and copper plate, *a a'*, provided with a copper strip, *d*, having loops *e f* projecting from the ends of the said plates, fibrous fabric *g* between the plates, the threads *h*, secured to the ends of the copper strips, and the links *i*, connecting the zinc plate of one element to the copper plate of the next element, substantially as herein shown and described.

2. A galvanic chain composed of elements
made up of disks *a a'*, formed with slots *c* and
b, in which a strip, *d*, looped at *e* and *f* is in-
serted, said disks being separated by a fabric,
5 *g*, but connected by the thread *h*, the several
elements being connected electrically by links
i i, in combination with a sack, *A*, having con-
tact-plates *B C*, to which the end elements of

the chain are connected, and a means for se-
curing said sack to the body, substantially as is
described. 10

JAMES H. MURRAY.

Witnesses:

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H. KEUPTON.