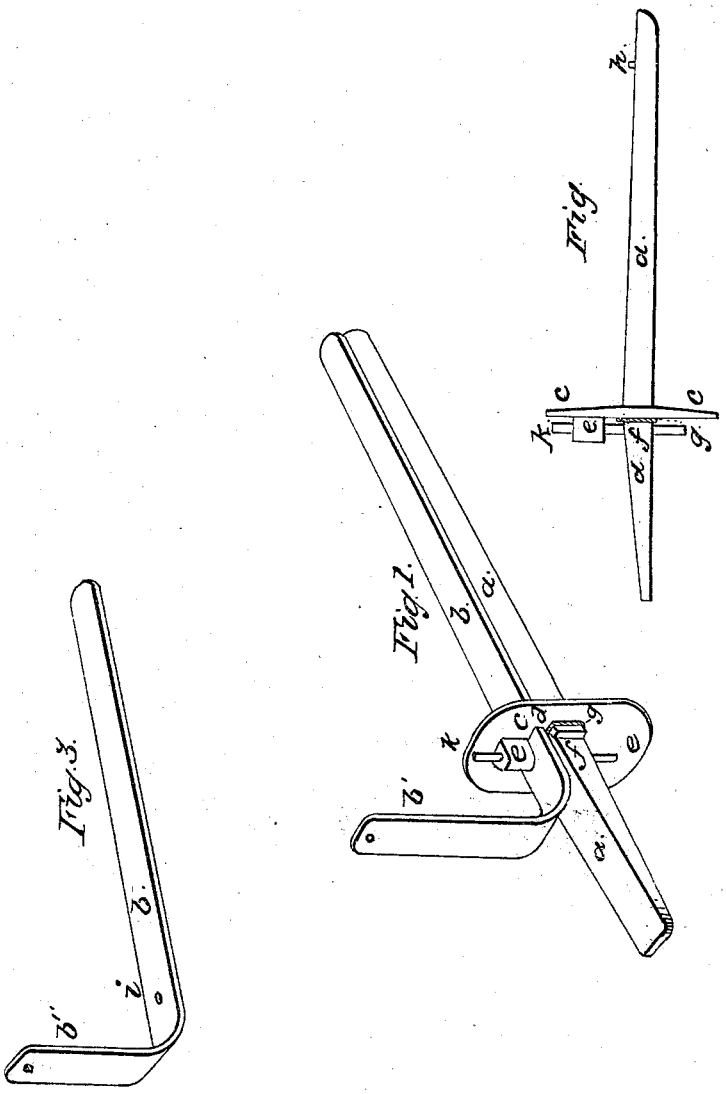
D. HARRINGTON.

Electric Instrument for Medical Use.

No. 4,176. Patented Sept. 2, 1845.



UNITED STATES PATENT OFFICE.

DANIEL HARRINGTON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GALVANIC INSTRUMENTS.

Specification forming part of Letters Patent No. **4,176**, dated September 2, 1845.

To all whom it may concern:

Be it known that I, DANIEL HARRINGTON, of the city of Philadelphia and State of Pennsylvania, have invented a new and improved mode of conveying galvanic electricity (for the cure or alleviation of disease) into the human system through the different cavities thereof, particularly through the rectum and vagina, and also, by the same instrumental process, a new and improved mode of accompanying the said galvanic influence by life-giving action in the way of alternate distention and contraction of the parts in quick succession; and I do hereby declare the following is a full and exact description.

In the drawings, Figure 1 is a perspective view; Figs. 2 and 3, parts detached.

The nature of my invention consists in constructing two pieces of metal, one of zinc, *a*, the other of copper, *b*, (or of any other metals that will produce galvanic action,) about eight or nine inches in length for an adult (male or female) of ordinary size. About five to six inches of the zinc piece *a* from one end is made of a triangular form, (a circular or other form would answer, but not so well,) with the corners so rounded as not to be liable to injure the delicate lining-membrane of a cavity. This triangular part is in diameter about six-tenths of an inch and tapers a trifle toward its rounded end, which end is rounded for the purpose of its entering a cavity with ease and without doing injury to the part. The other (say outer) end of this zinc piece is flattened on one side from near the triangular part to its end in a slanting form, so that it is only about one-half of the thickness at this end that it is where the triangular part commences, and where a flange or collar, *c*, is attached. The triangular end I call the "inner" and the flattened end the "outer." The opposite or back side of this flattened part is slightly rounded at its corners. This collar is of zinc and cast on, and is about two and one-half inches in length by one and three-fourth inch in width, (it may be greater or less,) and rounded at its corners, rendering it nearly oval in form. It is about one-eighth of an inch in thickness at its connection with the above-described zinc piece and thinner at its circumference. This collar has a small opening through it in the form of an oblong mortise, *d*, at its junction with the flat side of the zinc piece, a trifle longer than the width of the zinc and about one-eighth to one-fourth of an inch wide. It has also, immediately above the central part of this oblong mortise, a small projection, *e*, of zinc, cast on, (or the back side of said collar,) through which a small hole is made, about one-tenth of an inch in diameter, at a right angle with the zinc piece and continued quite through the zinc piece. The use of this hole will be hereinafter described. Upon each edge of this zinc piece, immediately at the junction of the collar on the back side, is a small projection, *f*, of zinc, cast on, sufficiently large to admit of a small groove in each, which grooves are to hold in place a small string, *g*, made of any non-conducting substance, and which non-conductor passes quite around and is tied on the back side of said zinc piece, and thereby made stationary immediately adjoining the back side of the collar. This non-conductor is required to be sufficiently large to prevent the contact of the copper piece (hereinafter to be described) at that part with the zinc piece; or a square piece of leather or any non or bad conducting substance may be put between the metals at the same place and held in its proper position by the string (hereinafter to be described) passing through it.

There is also a small piece of bone, *h*, or any non-conducting substance, inserted into the zinc piece near its inner end, which prevents at all times the contact of the metals at that end.

The copper piece *b* or counterpart of this said instrument is flat from end to end, and corresponds in width with the zinc piece, and is in thickness about a small eighth of an inch, with its edges somewhat rounded, and likewise the inner end. About an inch back of the collar (when it is in its place) the outer end, *b'*, is bent upward, forming a right angle. About three-fourths of an inch from said angle, in the center of this copper piece, is a small hole, *i*, about one-eighth of an inch in diameter, the use of which will be seen below. This copper counter half of the instrument is coated with silver by the common galvanic process; or it may be plated with silver, the object being merely to prevent the copper from touch-

ing the flesh or its membrane. This counterpart, in putting the instrument together, is passed through the mortise above described until the holes above described are in a range with each other, and a non-conducting pin of wood or ivory, or a thong of leather, *k*, is passed through the same, which holds the parts together and renders the instrument complete for use.

In the application of this instrument to a cavity of the human system—say the rectum—it is first to be oiled or lubricated at its inner end to enable it to be inserted with ease, and then pressed in until the collar stops it. A less distance may be made to answer. The turned-up copper end is then to be moved to the right and left as far as it will go in quick succession by the thumb and finger of either hand. In this way the two metals are brought into contact on each side, and each contact produces a delicate shock and simultaneously a gentle mechanical movement or action in the intestine as far inward as the instrument is made to reach.

A much greater or more powerful mechanical movement, and simultaneously a galvanic shock, may be given by pressing the turned-up end backward, or toward the feet of the patient, with such force as may be conveniently borne.

The improvements embraced in this new instrument, and for which I ask Letters Patent, are—

The method of combining the pieces of copper and zinc into an instrument, said pieces being insulated from each other, and having liberty to rock so as to touch together by being moved to the right or left, and thereby produce a galvanic shock, (while they are so affected they produce mechanical action,) all as above described, by which a much greater (see above) number of shocks are experienced in a given time than the ordinary instrument in any of its forms can be made to do, and thereby furnishing a large increase of curative or medicinal power.

The above-named improvements, it will be seen, are threefold. There is also one other improvement embraced in this instrument which is important to such invalids as are feeble in the strength of their fingers, which is a usual thing with emaciated females. The shocks produced by moving the turned-up end to the right or left can be accomplished with the least possible exertion of the hand or thumb and finger.

It is my intention to vary the construction of this newly-improved galvanic electric instrument, so as to adapt it to the requisitions of the various cavities of the human system and the wants of invalids of all descriptions, still preserving and embracing its general principles, features, and improvements, as above described and claimed; and I do hereby declare that it is not my intention to claim anything herein that is embraced in my former Letters Patent.

DANIEL HARRINGTON.

Witnesses:
JOHN THOMPSON,
SIMON COLTON.