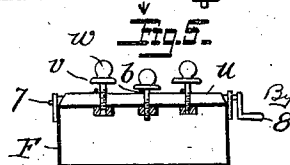
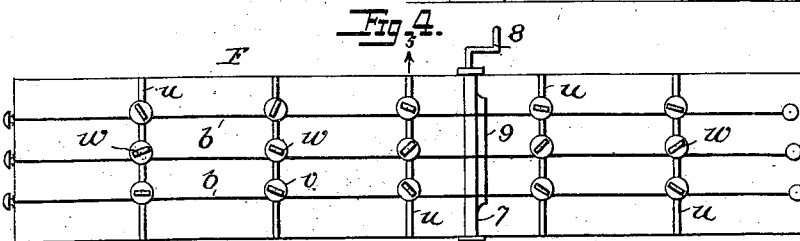
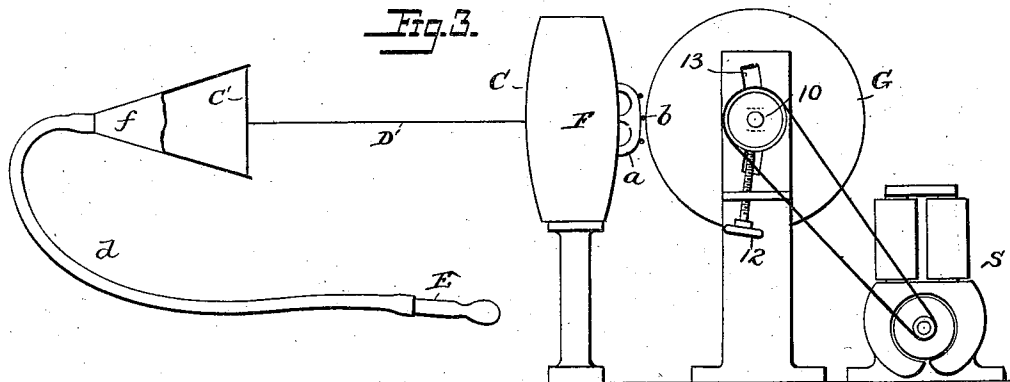
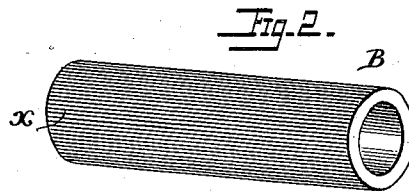
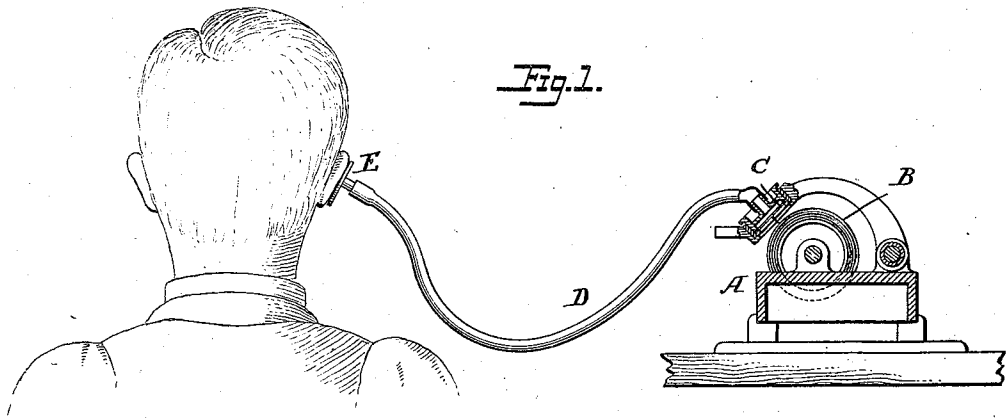


(No Model.)

E. J. GODMAN.
APPARATUS FOR TREATING DISEASES.

No. 499,785.

Patented June 20, 1893.



Witnesses
J. A. Fairgrave
Alex. H. Hobson

Inventor
Emory J. Godman
Foster & Freeman,
Attorneys

UNITED STATES PATENT OFFICE.

EMORY JACOB GODMAN, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE
VIBROMETER COMPANY, OF SAME PLACE.

APPARATUS FOR TREATING DISEASES.

SPECIFICATION forming part of Letters Patent No. 499,785, dated June 20, 1893.

Application filed June 13, 1892. Serial No. 436,537. (No model.)

To all whom it may concern:

Be it known that I, EMORY JACOB GODMAN, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Apparatus for Treating Diseases, of which the following is a specification.

My invention relates to the treatment of diseases of various kinds by subjecting the part afflicted to a series of pulsations or blows continued for a greater or less length of time and of a uniform character, and to this end my invention consists of means fully set forth hereinafter for securing and transmitting such pulsations or blows or vibrations, reference being had to the accompanying drawings, in which—

Figure 1 is a view illustrating one method of producing and transmitting the vibrating force or motion. Fig. 2 is a perspective view of part of the apparatus illustrated in Fig. 1. Fig. 3 is a diagrammatic view illustrating another form of apparatus. Fig. 4 is a view illustrating part of the apparatus Fig. 3. Fig. 5 is an enlarged section on the line 5—5, Fig. 4.

It has been found that certain diseases may be treated very effectively, and in some cases cured, by subjecting the afflicted part, in connection with other treatment of course, to a massaging action, and it has been found in some cases that by securing a massaging action of a steady and uniform character and prolonging it for a greater or less length of time at each treatment a very much better result can be attained than would be possible from intermittent irregular blows or pulsations.

One of the main objects of my invention is to secure such blows or pulsations of an absolutely uniform character and another is to continue such blows or pulsations without varying their character for any desired length of time, and another is to vary the rapidity and the intensity of the vibrations when desired; but in all cases having an interposed conductor between the part producing the pulsations and the patient.

While I have referred to the action as being a series of blows it will be understood that these blows are so slight and so rapidly re-

peated that they are more properly pulsations or vibrations.

I have found that in order to secure the desired results I must first have a vibrating object, which may be a board or diaphragm like the sounding board of a piano or of a violin or other musical instrument, or the vibrating object may be the tongue of a reed and in connection therewith I employ means for imparting a continuous series of uniform vibrations to the said object, with means for varying the rapidity of the vibrations when required, and between the said object and the part to be treated I interpose a conductor of any suitable character that will conduct the vibrations of the said object to the part to be treated. These three features embodied in my apparatus may each of them be variously constructed. As before stated the vibrating object may be of different forms. The method of imparting the vibrations may be of any suitable character to secure rapidity and uniformity. For instance it may be a current of air as in the case of the motion imparted to the tongue of a reed producing thereby a musical sound, or it may be the vibration of a string of a violin or positive mechanical means on a vibratile object, may be employed. Thus, in Fig. 1, I have shown a phonograph A, the cylinder B, of which is provided with a longitudinal series of parallel lines *a*, or it may have a regularly arranged series of dots or dashes, the lines, dots or dashes produced in any suitable way and a uniform rotation is imparted to the cylinder from an electro-motor as usual and the result will be that a uniform series of pulsations or vibrations is imparted to the diaphragm C, of the phonograph and the conductor, in this case between the diaphragm C, and the ear is in the form of a column of air in a flexible tube D, having an ear piece E, which concentrates the vibrations upon the drum of the ear when the latter is to be treated.

In the construction shown in Fig. 3, the diaphragm C, is the back of a case F, something like the case of a violin or an Æolian-harp provided with one or more bridges *a*, over which are stretched one or more strings *b*, of gut or other suitable material. When a

uniform vibration is imparted to one of the said strings by means of a bow or other suitable means a uniform vibration is imparted to the diaphragm C, and this vibration may be conducted to the drum of the ear or other object by a conductor in the form of a light rod or wire D', in contact with the diaphragm C, and also in contact with the drum of the ear or other object, but I prefer to connect the diaphragm C, with a smaller diaphragm C', at the end of a conical receiver f, with which communicates the pipe d, the column of air in which serves to conduct the vibrations to the ear piece E.

In order to secure an absolutely uniform vibration or tone from the string b, I prefer to make use of a rotating bow G, which may be a thin rubber disk rosined at the edge where it runs in contact with the string and is driven by an electro-motor S, or otherwise.

The pitch or tone of the string may be varied by shortening or lengthening it and for this purpose I prefer to provide the box F, with a series of frets u, over which are stretched one, two or more strings b, and to provide means whereby any one of the strings may be pressed upon any one of the frets to shorten it. For instance adjacent to the point where each string crosses one of the frets I may use the screw w, having a circular flange v, and when the screw is screwed down the flange presses the string upon the fret beneath. When the screw is lifted the string is let free. The bow or rubber G, may be supported by movable bearings 10, adjustable by screws 12 in curved guides 13, so as to bring it into contact with any one string as desired.

It will be seen that in all of the constructions which I have described there is an object to which a vibration may be imparted; there is means whereby the uniform vibrations may be imparted to the said object and continued for any desired length of time, and there is a conductor between the said object and part to be treated.

While I have referred to the continuous series of uniform pulsations and vibrations it will be understood that these may be continued for a greater or less length of time as may be desired, perhaps only for a fraction of a minute at one time or for fifteen or twenty minutes at another, but that they are continuous so long as the application is required, and

I have found that it is of the utmost importance that they should be uniform and not vary, being more of the character of a single tone and not of the character of an intermittent broken series of actions producing simply a noise. For this reason I have found that pulsations derived from the vibrations of a string like that of a violin are very much better than those which result from the mechanical action of a series of indentations upon the cylinder of a phonograph.

For some purposes it is desirable to vary the intensity of the vibrations which may be done by a buffer consisting of a rock shaft 7, having a felt rib 9, and which may be turned by a handle 8, to bring it against the strings.

I do not herein claim the particular means of vibrating the strings upon a sounding board, illustrated in Fig. 3, as the same constitutes the subject-matter of Letters Patent.

Without limiting myself to the precise construction and arrangement of parts described, I claim as my invention—

1. An apparatus for the treatment of diseases consisting of a vibrating object, means for imparting a continued series of uniform vibrations to said object, and a conductor as a column of air interposed between the said object and the part to be treated, substantially as set forth.

2. The combination in an apparatus for treating diseases of a vibratory object, means for imparting a continuous series of uniform vibrations to said object, means for varying the number of vibrations as desired, and a conductor as a column of air between the object and the part to be treated, substantially as set forth.

3. The combination in an instrument for treating diseases of a diaphragm, means for imparting a series of uniform vibrations to the said diaphragm, a second diaphragm connected with the first, a funnel extending from the second diaphragm and provided with a tube and an end piece, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMORY JACOB GODMAN.

Witnesses:

H. F. GAREY,
WM. F. REILLY.