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# MIRACLE OF THE PHONOGRAPH.

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## Edison's Invention Applied to the Scientific Cure of Deafness.

Dr. George A. Leech delivered a lecture Tuesday evening at the Leech Institute, 39 West Twenty-seventh Street, on a new method of curing deafness by means of the Edison-Leech phonograph. Illustrations were given of his method of treating deaf patients by introducing into the ear a vibratory piece of an intensity sufficient to cause even deaf-mutes to hear.

"I regard the Edison phonograph," he said, "as the most wonderful invention of an age remarkable for its great discoveries. It is the human voice and the human ear rolled into one.

"But it was not designed as an instrument for the cure of deafness until I invented and applied to it certain apparatus which makes it complete for that purpose. In order to hear, it is absolutely necessary that three little bones called the hammer, anvil, and stirrup, situated in a little cavity known as the drum or middle ear, should be made to vibrate at a certain rate of speed."

After explaining how these bones were connected, and the manner in which sound was conveyed to the auditory nerve and brain, he said: "The speed with which these bones move varies from 16 to 30,000 times in a second. Vibrations slower than 16 times a second are not fast enough to be recognized as sound by the human ear, while those exceeding 30,000 vibrations are so rapid as to be beyond its capacity for hearing.

"A person is deaf when the joints of these bones become stiff and do not respond properly to the vibrations of sound, and the degree of deafness is measured by the amount of stiffness in these joints.

"The reason why most deaf people hear better in a noise such as the rumbling of street cars is because the extraordinary loud sounds falling on the ear compel the bones in the drum of the ear to vibrate with the required speed to convey sounds to the brain. In this fact lies one of the secrets of the method employed for the cure of deafness. We apply in a scientific way, by means of the improved phonograph, vibrations of sufficient intensity to move the delicate mechanism of the human ear. In this way we render the joints in the drum of the ear movable.

"The principle of treatment employed is the massage, or mechanical stimulation, and the consequent reawakening of the sound-conducting apparatus of the ear, by means of vibrating force. The character, frequency, and intensity of the vibrations are regulated by the surgeon, according to the exigencies of the case under treatment."

Dr. Leech explained at much length the mechanism of the human ear. His system will soon be introduced into some of the deaf and dumb institutions, and he feels sanguine that wonderful cures will be effected.

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