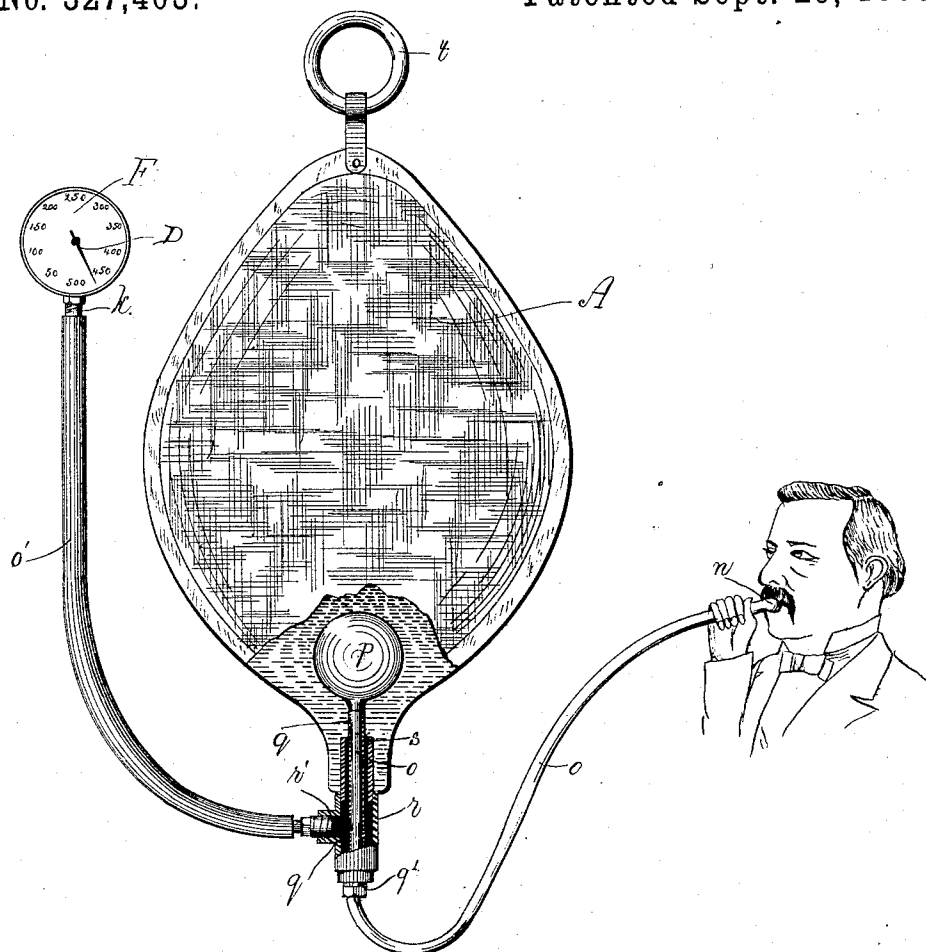


(No Model.)

P. E. McDONNELL.
EXERCISING APPARATUS.

No. 327,403.

Patented Sept. 29, 1885.



Witnesses.
Arthur Johnson.
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UNITED STATES PATENT OFFICE.

PATRICK ENEAS McDONNELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE
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EXERCISING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 327,403, dated September 29, 1885.

Application filed July 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, PATRICK ENEAS McDONNELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved Exercising Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of devices commonly used for developing the muscles of the human body used in striking with the arms, which devices it has hitherto been the practice to form by filling bags with some yielding substance—such as sand, sawdust, hair, and the like.

It is my object to provide an exercising apparatus which may be used not only for developing the particular muscles above referred to, but also for exercising the lungs; and it is a further object of my invention to afford means, to be used, when desired, in connection with my aforesaid device, whereby a force or weight, whether of a blow from the arm, or of pressure, or of a current of air expelled from the lungs, shall be truly registered.

To the above ends my invention consists in a receptacle, formed wholly or in part of flexible material, to contain a fluid, whereby a yielding object shall be provided to afford resistance to the force of a blow, and communicating with a suitable registering-gage operating by a force exerted upon the receptacle to cause the degree of force employed to be registered.

My invention further consists in means contained within the said receptacle and communicating with the exterior of the same and forming a receptacle for air expelled from the lungs, the expansion of which last-named receptacle shall compress the fluid surrounding it; and my invention still further consists in certain details of construction and combinations of parts, all as hereinafter particularly set forth.

The drawing represents device in elevation, showing a portion broken away to display details, and showing the construction to afford a lung-exercising apparatus, to which purpose it is represented as being applied.

A is a bag, preferably of the shape shown,

and formed wholly or in part of flexible non-elastic material. A link, *t*, is provided upon an extremity of the bag to afford means for suspending it. The opposite end of the bag is provided with an opening, *s*, to which an L-shaped tube, *r*, is removably connected at one end. Passing longitudinally through the stem of the tube *r* is a tube, *g*, fastened to the nut *g'*, through which passes a rubber hose, *o*, having a rubber bag, *p*, attached upon one end and lying within the receptacle A. The rubber hose *o* leads out from the receptacle *p* through the stem of the L-shaped tube *r*, and is provided at one end with a mouth-piece, *n*. From a branch, *r'*, of the L-shaped tube *r* rubber hose *o'* leads to a gage, *F*, producing communication with the interior of latter and the interior of the receptacle A.

The gage *F* is constructed on the principle of the Bourdon steam-gage; but I prefer to provide it with mechanism of peculiar construction to render it particularly applicable to the purpose for which I employ it—for causing the single index-finger *D* to be automatically held at the point of registration until released. Accurate description of the mechanism referred to is omitted from the present application, since it is intended that it shall form the subject of a future application for a patent.

The operation of my device is as follows: The receptacle A is filled with water or air, preferably through the rubber hose *o'*, which is disconnected for the purpose from the gage *F*. When suspended in position, as shown in the drawing, it is ready for use. A blow upon the surface of the receptacle A will compress its contents, causing them, through the connecting medium *o*, to force the index-finger *D* around, to register in pounds the force of the blow. The attachment comprising the rubber bag *p*, tube *g*, hose *o*, and mouth-piece *n* renders my device practicable as a lung-exercising apparatus. By blowing into the mouth-piece the bag *p* is expanded, whereby the fluid contained in the device is compressed into the gage, upon which the force of the current of air expelled from the lungs is registered in the manner already referred to of the force of a blow. The air blown into the receptacle *p* is afterward forced out by the re-

turn to its normal pressure of the fluid in the receptacle A, whereby the receptacle *p* is caused to collapse. The registering-gage F is not an indispensable part of my device, since the bag portion may be used alone for its purpose—viz., to afford a striking-bag and lung-exercising apparatus—though it is preferred to have provided suitable means for registering the force exerted. It may be desirable, in forming the receptacle A, instead of making it entirely of flexible material, to construct the rear side of sheet or cast metal either in the oval form shown or in any other suitable form, perhaps round, and provided with a lateral flange to afford to it the shape of a dish-pan, in which last-named case it may be covered with flexible material secured in position by a hoop, in the manner of adjusting a drum-head. By the foregoing construction the advantage is afforded of a flat rear surface to lie against the wall, and such construction is included within my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. An exercising apparatus for use with a suitable registering-gage constructed to register the degree of force exerted upon a fluid contained in the said apparatus, and comprising

a receptacle, formed wholly or in part of flexible material, to contain a fluid, and containing a receptacle of elastic material provided with means forming a communication from without the said first-named receptacle with the said elastic receptacle, whereby the said elastic receptacle may be expanded by a current of air expelled from the lungs of the operator, and caused to collapse after its expansion, substantially as described, and for the purpose set forth.

2. An exercising apparatus comprising, in combination, a receptacle, A, formed wholly or in part of flexible material, to contain a fluid, and containing a receptacle, *p*, of elastic material, a tube, *o*, communicating from without the receptacle A with the said elastic receptacle *p*, and a suitable registering-gage communicating with the interior of the receptacle A and constructed to register the degree of force exerted upon the fluid contained in the said receptacle A, substantially as described.

PATRICK ENEAS McDONNELL.

In presence of—

DOUGLAS DYRENFORTH,
CHARLES C. LINTHICUM.