No. 812,144. PATENTED FEB. 6, 1906.

A. W. MACKENZIE & J. ROSS.

DUMB BELL.

APPLICATION FILED SEPT. 6, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

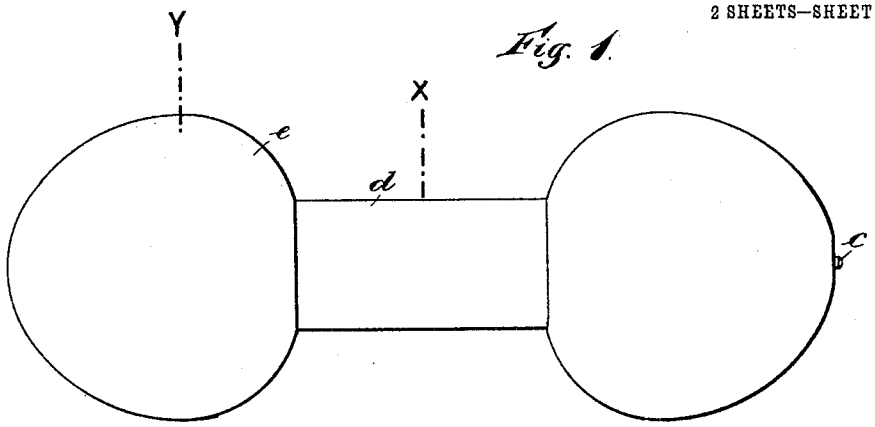


Fig. 2.

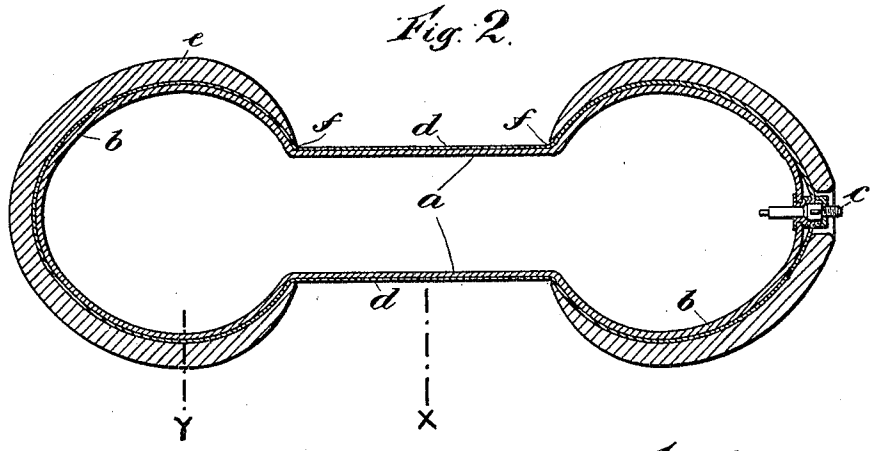


Fig. 3.

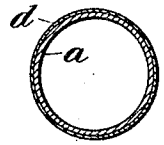
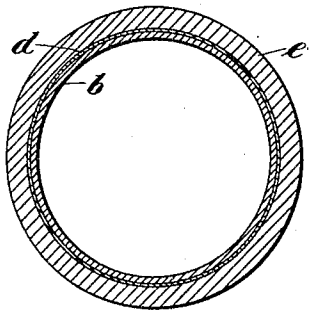


Fig. 4.



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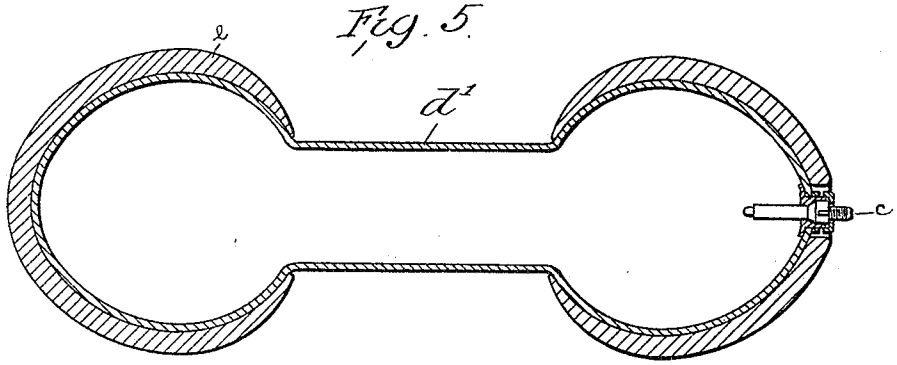
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2 SHEETS—SHEET 2.

Fig. 5.



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DUMB-BELL.

No. 812,144. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed September 6, 1904. Serial No. 223,430.

To all whom it may concern:

Be it known that we, ALEXANDER WOODCOCK MACKENZIE and JAMES ROSS, subjects of the King of Great Britain, residing at Edinburgh, Scotland, in the United Kingdom of Great Britain and Ireland, have invented certain new and useful Improvements in and Relating to Dumb-Bells; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved dumb-bell or grip-resisting device for exercising and developing the muscles of the fingers, hands, arms, and body of the operator whereby a complete all-round elastic grip-resisting force is provided which is capable of being regulated as may be desired; and in order that the said invention may be fully understood we will proceed to describe the same with the aid of the accompanying sheet of drawings, in which—

Figure 1 represents a dumb-bell constructed in accordance with our invention; Fig. 2, a longitudinal section of same; Figs. 3 and 4, transverse sections taken on the lines *x x* and *y y*, respectively, of Figs. 1 and 2. Fig. 5 is a longitudinal section of a modification.

For the purposes of this invention we employ a tube *a*, of india-rubber or other suitable elastic material, of convenient length and diameter, both ends of which are closed—as shown at *b*, for example—so as to form an air-tight chamber or receptacle. A valve *c* is fitted in any suitable position—as at one end, for example—to enable the receptacle to be inflated or deflated or the air-pressure therein to be regulated at pleasure.

The air tube or receptacle *a b* is incased in an outer cover *d*, which may be made of canvas or other suitable flexible material which is practically unstretchable. This outer cover may be made of any suitable shape, but preferably that of an ordinary dumb-bell.

Instead of employing an inner elastic tube *a b* and an outer flexible unstretchable cover *d* the inner elastic tube may be dispensed with and the outer flexible unstretchable cover only employed, as shown in Fig. 5, the latter being in that case made of any suitable air-tight material—such as, for example, two sheets of canvas cemented together with india-rubber solution. In this case the valve *c* will of course be fitted directly to the flexible unstretchable air-tight part *d'*. It will now be understood that when the chamber or receptacle is inflated to a sufficient degree by means of an ordinary inflating-pump rigidity is imparted to the said chamber or receptacle, which thus forms our improved dumb-bell, and the greater the air-pressure the greater will be the resisting force at the part gripped by the person using the dumb-bell. When it is desired to reduce the resisting force, it is only necessary to reduce the internal air-pressure by allowing air to escape through the valve *c*.

A dumb-bell constructed as above described is extremely light in weight; but if it is desired to add weight to it a metallic sphere or ball *e* of any desired shape may be placed at each end, holes *f* being provided therein to allow of the insertion of the ends of the chamber or receptacle before the latter is inflated, so that when the same is inflated each sphere or ball will be held firmly in place thereon, but can be readily detached by deflating the dumb-bell.

We claim—

1. A dumb-bell comprising an air-tight inflatable body having a central tubular portion and substantially spherical end portions carried thereby, and an inflating and deflating valve, substantially as described.

2. A dumb-bell having a hand portion consisting of an air-tight receptacle made of practically unstretchable flexible material, and an inflating and deflating valve, substantially as described.

3. A dumb-bell consisting of an inner air-tight elastic chamber or receptacle *a*, *b*, an outer cover *d* of practically unstretchable flexible material, an inflating and deflating valve *c* and hollow spheres or balls *e*, combined and arranged substantially as described.

4. A dumb-bell consisting of an air-tight receptacle made of practically unstretchable flexible material, an inflating and deflating valve *c* and hollow metallic spheres or balls *e*, combined and arranged substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

ALEXANDER WOODCOCK MACKENZIE.
JAMES ROSS.

Witnesses:
ROBERT FINDLAY SCOTT,
GEORGE BRAID.