G. B. Windship,

Dumb Bell,

No. 46,413, Patented Feb. 14, 1865.

Fig. 3

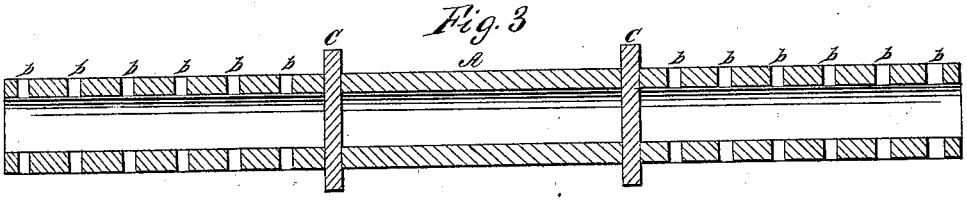


Fig. 1

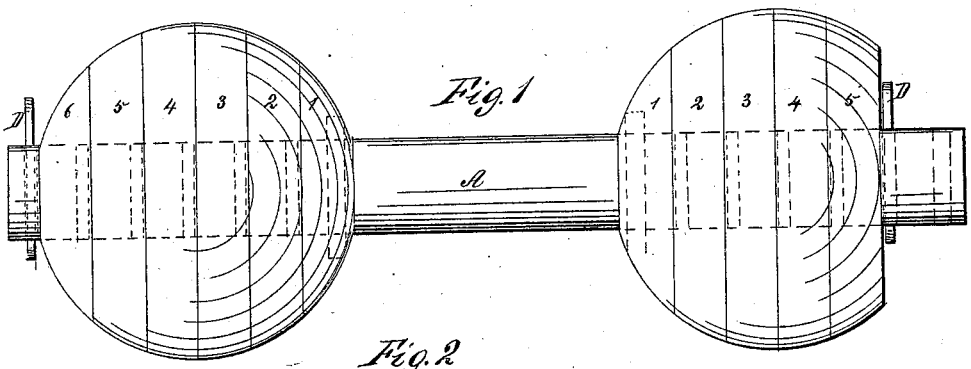


Fig. 2

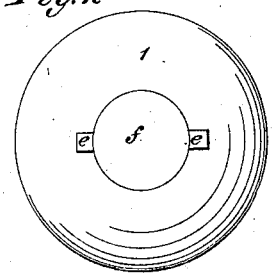
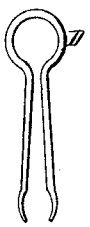


Fig. 4



Witnesses;
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Geo. R. Clarke

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UNITED STATES PATENT OFFICE.

GEORGE B. WINDSHIP, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GRADUATED DUMB-BELLS.

Specification forming part of Letters Patent No. **46,413**, dated February 14, 1865.

To all whom it may concern:

Be it known that I, GEORGE B. WINDSHIP, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Graduated Dumb-Bells; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation with one of the disks or sections removed from one of the balls; Fig. 2, an end or outside view of one of the two inmost disks, 1 1, showing the slot *e* for the reception of the fixed pins C C; Fig. 3, a longitudinal central section of the handle; and Fig. 4, a perspective view of one of the spring-pins by means of which the removable disks or sections are prevented from slipping off the handle.

Like parts are indicated by the same letters and figures in all the drawings.

My invention relates to what are known as "graduated dumb-bells," or dumb-bells which may be made lighter or heavier, as required, by taking off or putting on the different sections of which they are composed; and its nature consists in certain improvements in the construction of the same, whereby they are rendered cheaper and more readily adjusted than any known or used before.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

I am aware that a graduated dumb-bell has been made consisting of a central sphere or spheroid and removable concave cups or sections confined to the handle by means of screws; but this plan of construction produces an article comparatively expensive, inconvenient, and difficult to adjust. This, therefore, I do not claim as being any part of my invention.

The handle A is a cylinder of wrought, cast, or malleable cast iron, either solid or hollow, of any required diameter and length. Common cast-iron may answer the purpose, but, as it is liable to break by falling or concussion, I prefer to make the handle A of wrought or malleable cast iron; and to lessen the expense of this more costly material, as well as the drilling of so many holes through a solid cylinder, I propose to make it hollow, as represented in Fig. 3. In this latter case a piece of common gas-pipe will answer a good purpose; or the central bore may be cored out in the casting, and thus (being hollow and thin) the pipe can be readily rendered malleable.

C C are stationary metallic pins fast in holes drilled or cast through the handle A, and projecting about one-fourth of an inch on either side, as shown in Fig. 3.

b b b, &c., are a series of holes one-eighth of an inch in diameter, (more or less,) through the handle A, and as far apart as the thickness of the different disks or sections which compose the balls.

D is a double elastic pin, so shaped (see Fig. 4) that it may be compressed to enter any of the holes *b* in A, and after passing through the same will be expanded, and thereby effectually prevented from ever dropping out.

I construct the balls of flat metallic disks 1, 2, 3, 4, 5, 6, (more or less in number,) so shaped that when arranged together, as in Fig. 1, they will form a regular, scalloped, or otherwise irregular sphere, spheroid, oval, cylinder, cylindroid, or any other geometrical solid required. Through the center of all these sections is cast a round hole of the proper diameter to slip onto the handle A. In the ends or convex sides of the two inside sections, 1 1, are holes *e e*, (see Figs. 1 and 2,) just large enough to receive the stationary pins C C, whereby said sections are securely held in the required position, while the pins themselves (being embedded in the holes) will be prevented from ever working out. Thus it will be seen that my graduated dumb-bells are very simple in construction, cheap, strong, and quickly adjusted, being in these respects, I think, a great improvement over any others known or used before.

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

1. Constructing graduated dumb-bells of flat disks or sections, substantially as and for the purpose described.

2. Fixing the two inmost disks, 1 1, upon the handle A by means of the holes *e* and the

embedded stationary pins C, C substantially as described.

3. The method of confining the removable disks or sections by means of the spring-pins D and holes *b*, substantially as and for the purpose described.

4. Constructing the handle A of a dumb-bell of a hollow metallic cylinder, substantially as set forth, and for the purposes described.

GEORGE B. WINDSHIP.

Witnesses:
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