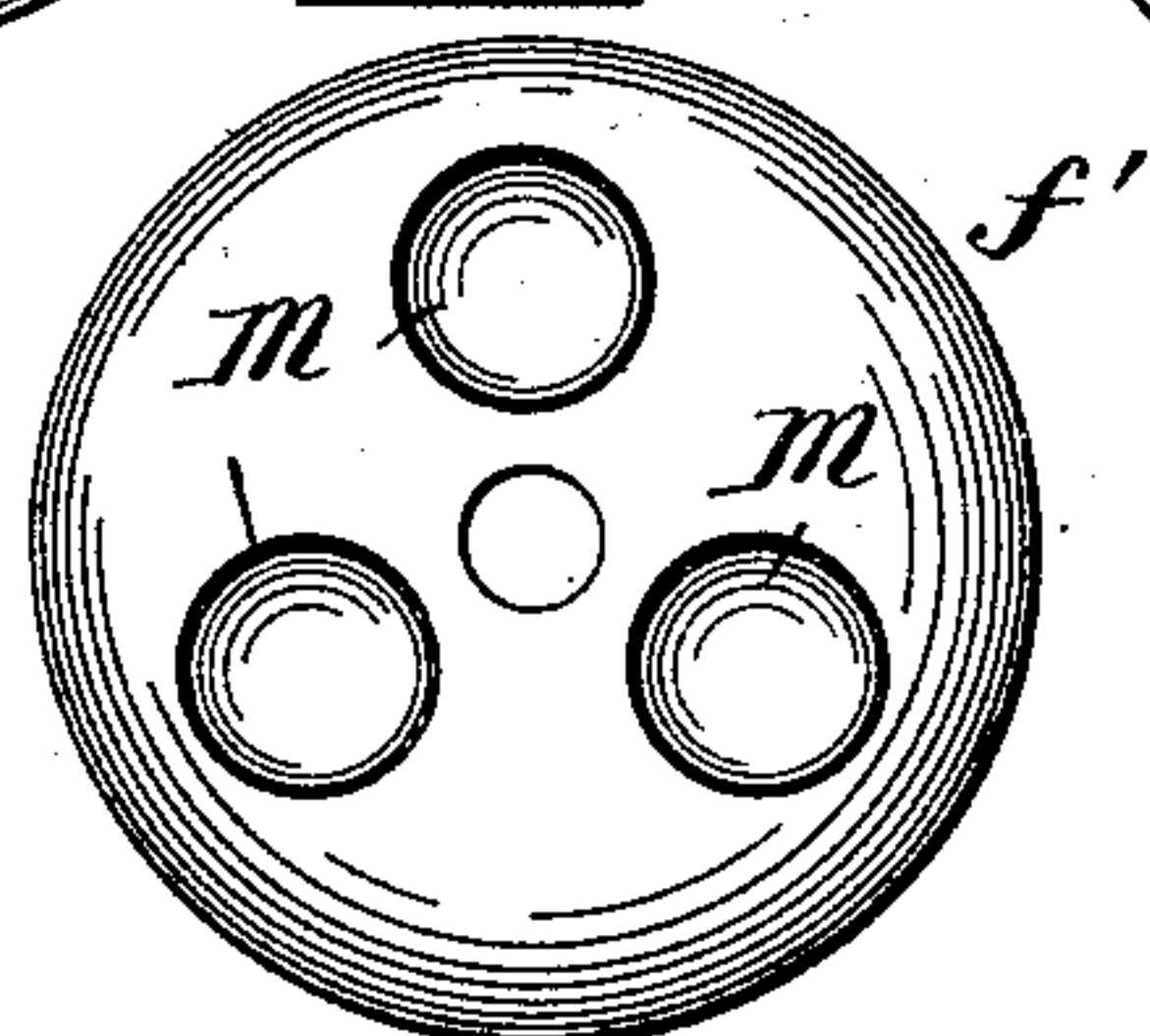
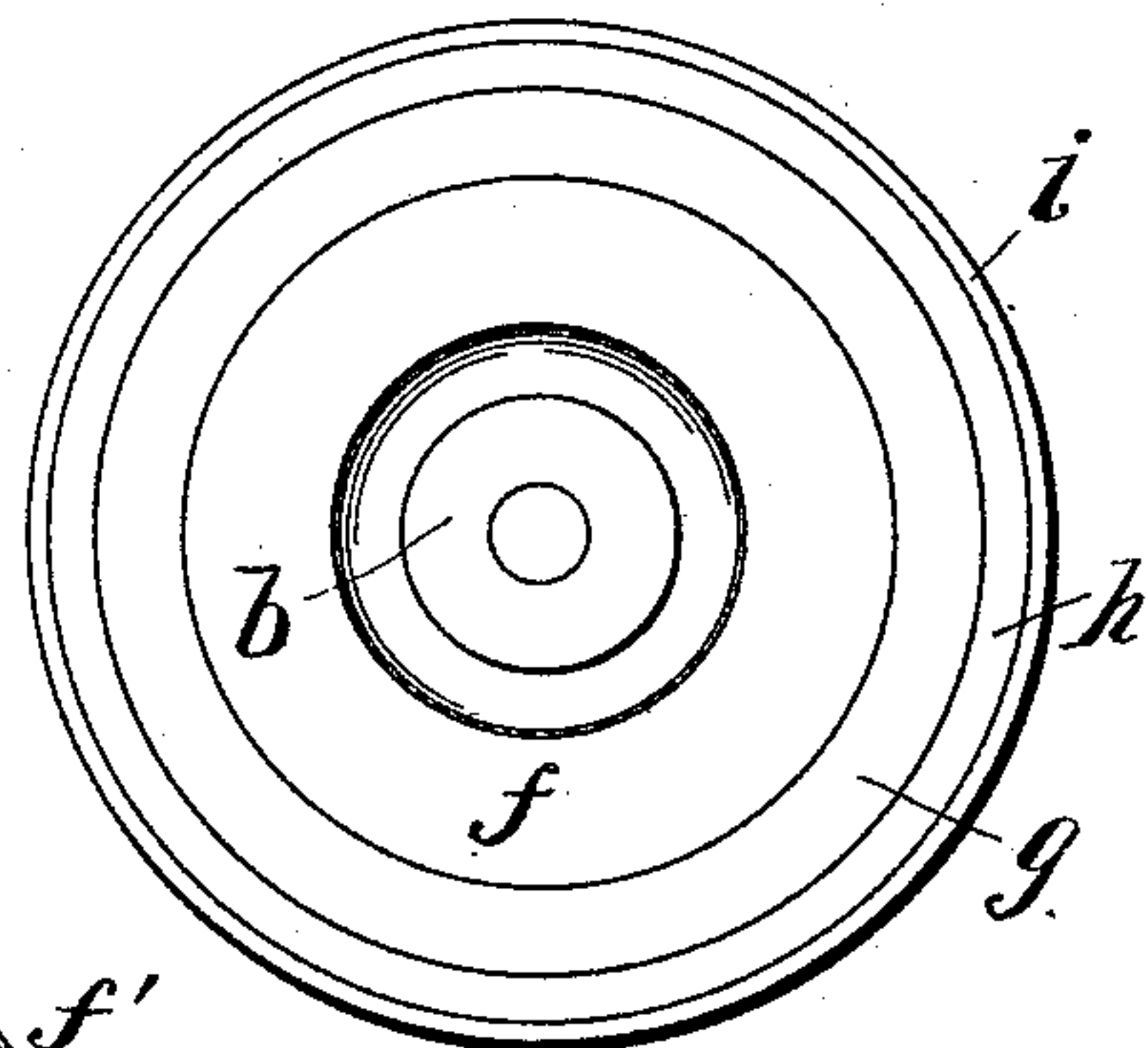
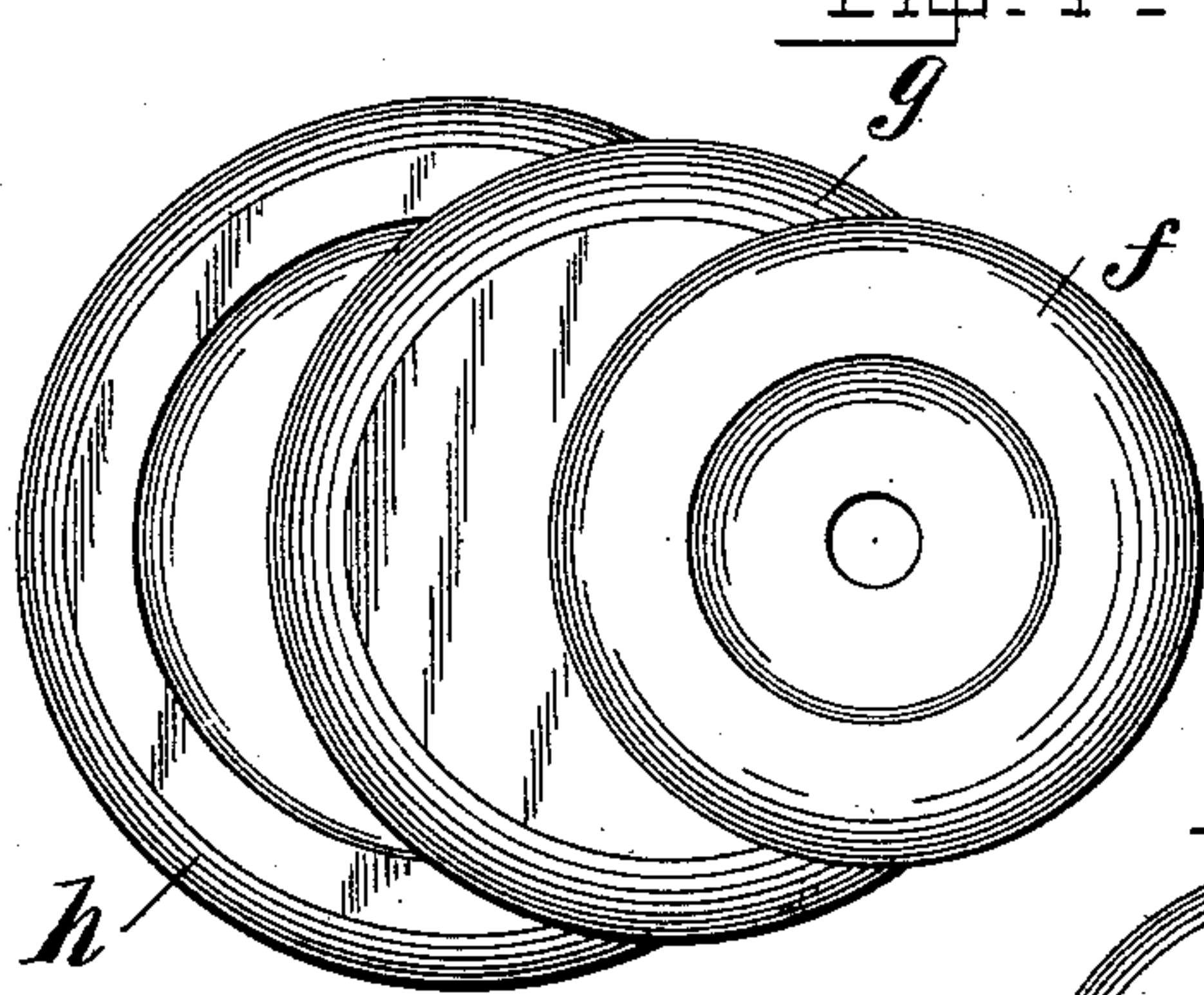
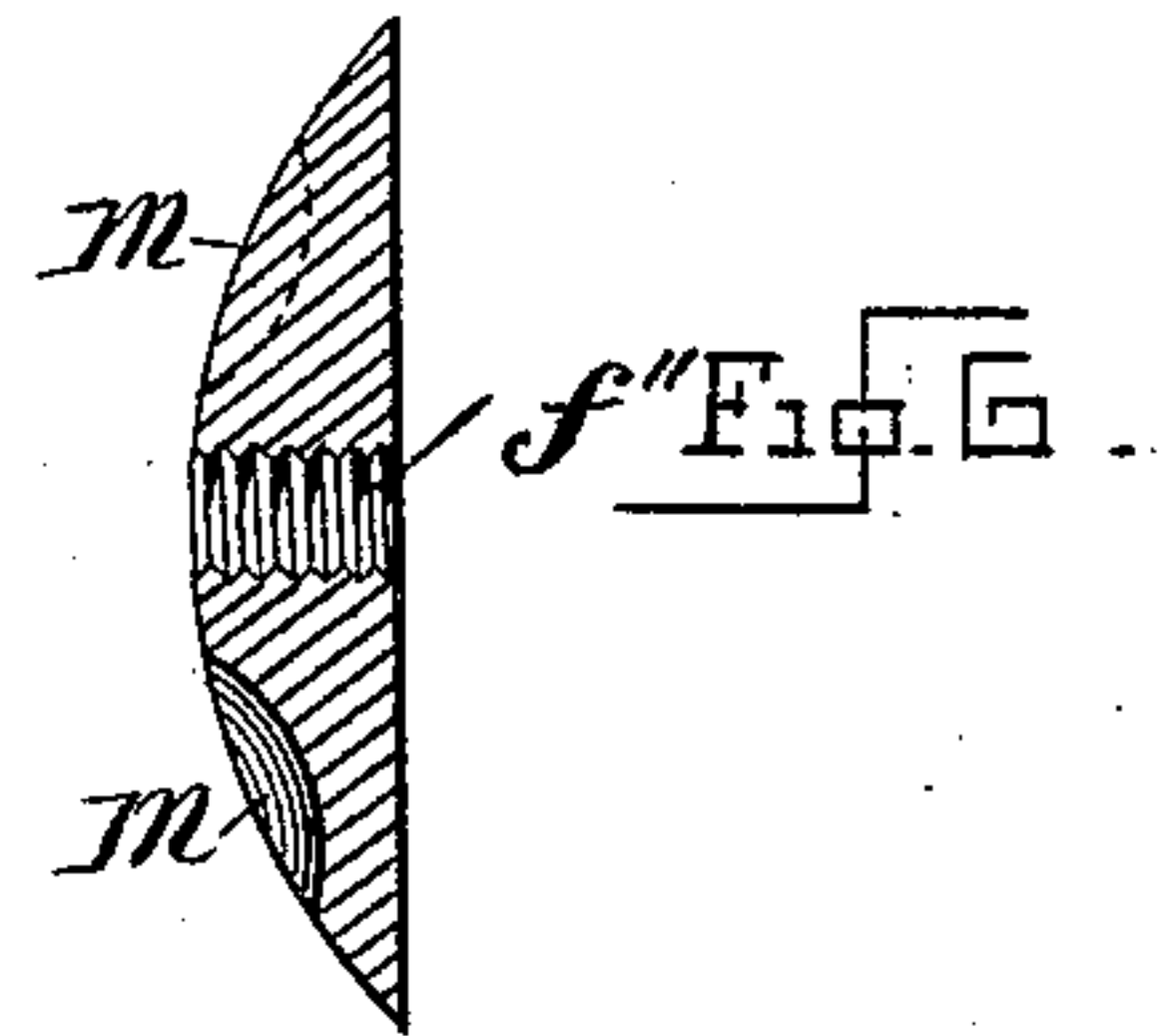
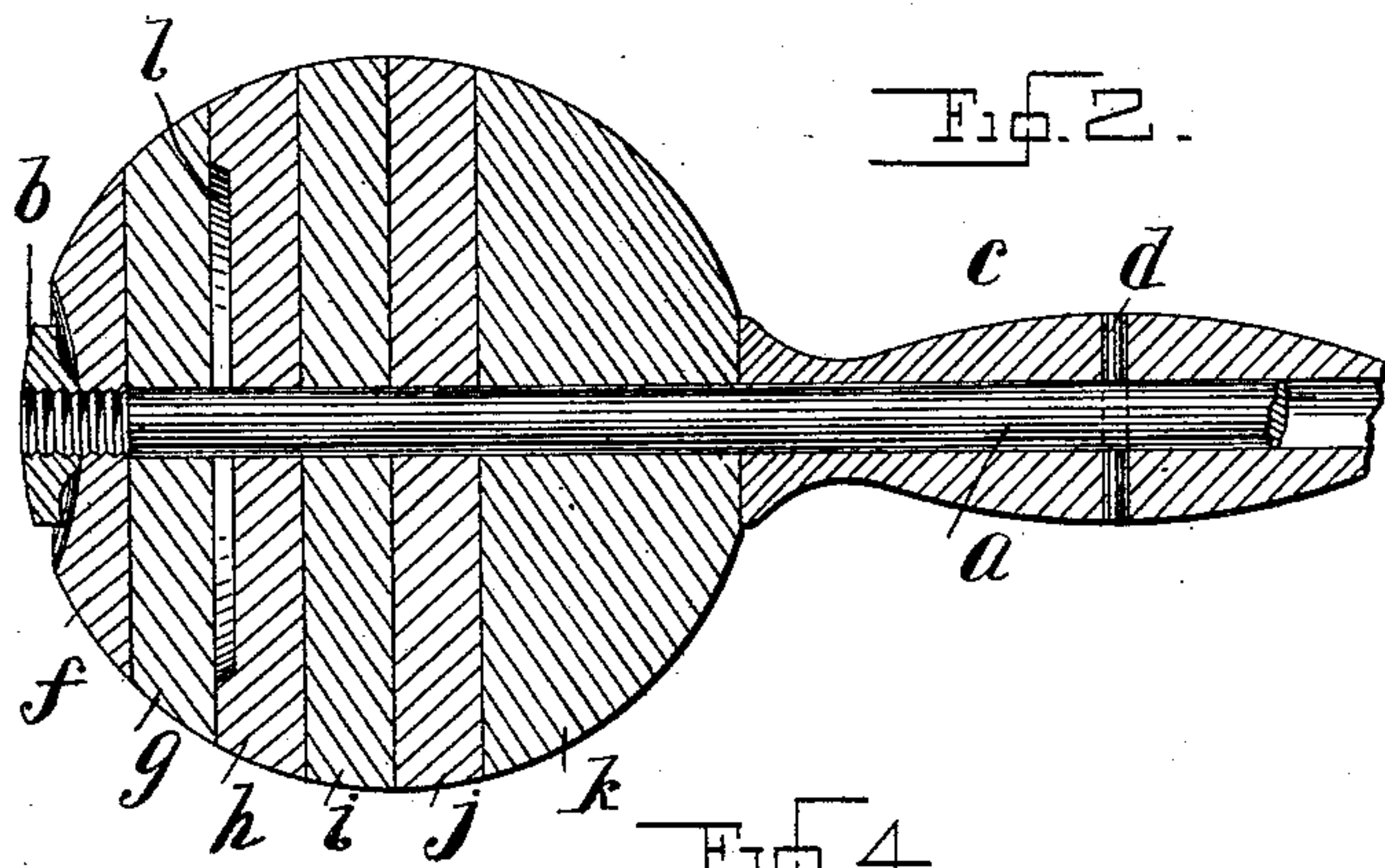
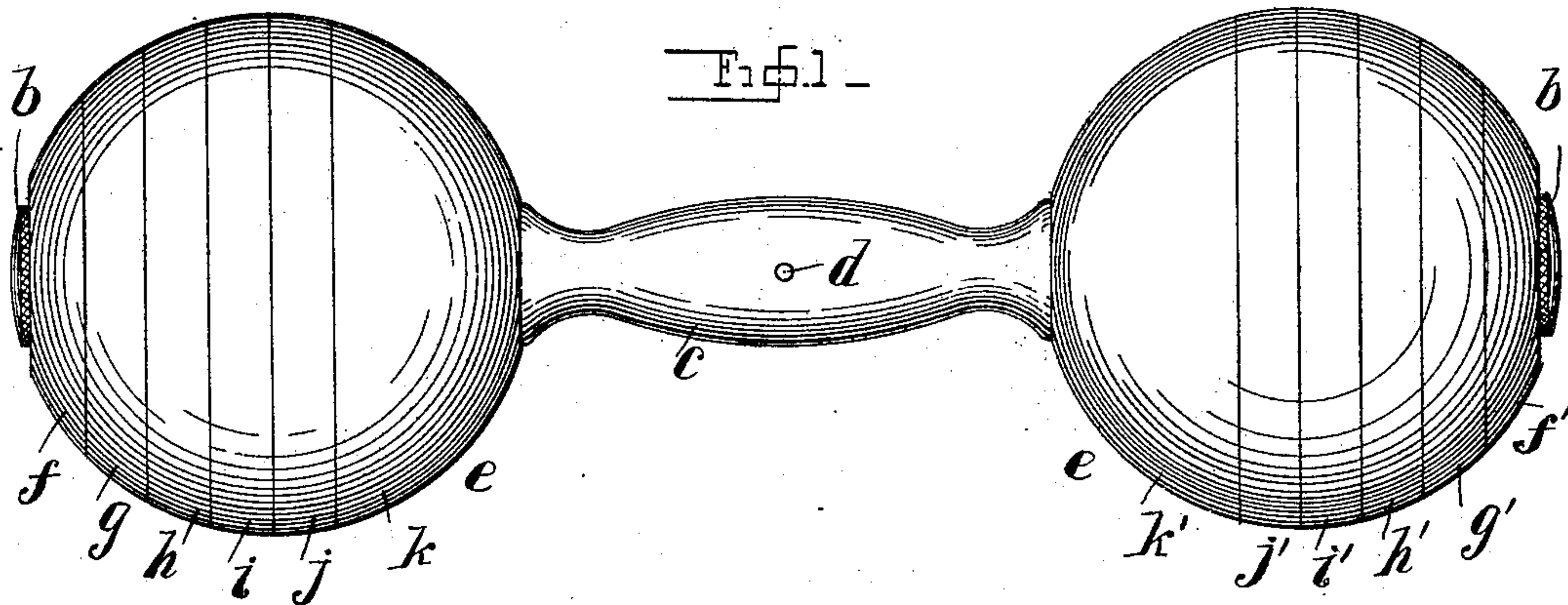


(No Model.)

C. W. AYTON.
DUMB BELL.

No. 484,352.

Patented Oct. 11, 1892.



Witnesses
Wm. A. Coutland
Nellie L. Pope.

Inventor
CHARLES W. AYTON
BY HIS ATTORNEY

Edward P. Thompson

UNITED STATES PATENT OFFICE.

CHARLES WILLIAM AYTON, OF NEW YORK, N. Y.

DUMB-BELL.

SPECIFICATION forming part of Letters Patent No. 484,352, dated October 11, 1892.

Application filed April 11, 1892. Serial No. 428,585. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WILLIAM AYTON, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Dumb-Bells, (Case No. 7,) of which the following is a specification.

In the market it is customary to find dumb-bells of various weights and sizes, and therefore in order that a person may be fully equipped with a set he is obliged to purchase as many bells as exist in a set.

My invention relates to the class of dumb-bells in which certain sectional parts are provided, so that it is necessary to buy but one dumb-bell, together with its adjuncts, in the manner described in the accompanying drawings.

Figure 1 is a full view of the device. Fig. 2 is a longitudinal view in which a part of the device is omitted, as that which is wanting is like that which is shown. Fig. 3 is an end view as taken from either end of the bell seen in Fig. 1. Fig. 4 shows the segments piled up irregularly and partly in perspective and overlapping each other. Fig. 5 is a plan, and Fig. 6 a section, of a modified form of nut for holding the segments together.

The device embodying my invention consists of the combination of a central tie-rod *a* with screw-threads on each end and a tightening milled screw *b* on each thread, a handle *c*, fastened at the middle portion of the rod by a pin *d*, balls *e* on the rod *a*, located one at each end and bearing against the ends of the said handle, spherical segments, lettered in order from the threaded end toward the center of the rod and being in duplicate in respect to both balls, the said lettering being *f g h i j k* on one ball and *f' g' h' i' j' k'* on the other ball, the end segments being with one base and the remaining with two bases and the inner segments, and other details hereinafter described. It is preferred that the segments *k k'* of one base be much larger than the others, in order to accomplish the proportioning of the weights similarly to those already in the market. It is now evident that if the segments are all of wood or similar substance of comparatively-low specific gravity

the weight of the bell is a given number of pounds. I construct it of such dimensions that when the same are all of hard wood—such as whitewood—the total weight is two pounds. If the segments are all of material of greater specific gravity than that of wood, of course the total weight is much greater in proportion to the increase in the specific gravity. I so construct the device that when the segments are all replaced by iron segments the total weight is twenty pounds.

In further explanation I may state that I provide two sets of segments of exactly the same volume and shape, but of different weights—*i. e.*, one of wood and the other of iron, preferably as a matter of cheapness and artistic appearance of cast-iron electroplated with nickel. As to the sizes, the segments *j k* or *j' k'* equal a hemisphere, while the segments *f g h i* or *f' g' h' i'* equal the other hemisphere, and are all equal in thickness, or rather in thickness measured on the surface in a plane which includes the axis of the rod *a*. This equality of thickness has no object as far as the merits of the invention are concerned; but it insures attractiveness in appearance, especially when alternate segments are respectively of wood and nickel-plated iron. In order to adjust the weights of the segments in order to obtain this equality of thickness and at the same time to conform to the usual series of total weights, some of the metal may be turned out from the hidden portion of the segment, as at *l* in segment *h*. The two sets of segments and the one handle and rod aggregate less than two complete dumb-bells, and yet it is possible and easy and a matter of very great rapidity to make seven dumb-bells. Again these bells have a uniform size and may be packed in a box which need be no larger than that necessary to carry two bells of the same size.

The series may be understood from the following explanation: By using wooden segments only the total weight is two pounds. By replacing the segments *f f'* by iron the total weight is three pounds. By substituting iron segments for the wooden segments *g g'* the total weight is five pounds. As these substitutions are made it is assumed that the iron segments first put on are left on. By

changing the wooden segments *i i'* to iron the total weight is ten pounds, the total weight being eight pounds in the substitution of the segments *h h'*. When the segments *j* are changed in a similar manner, the total weight is twelve pounds, and finally, as before stated, when all become iron the total weight becomes twenty pounds.

It is further the fact that a still greater variety of total weights may be obtained by having every second or every third segment of iron and the others of wood, and again by having iron more on one end of the bell than on the other, so that the peculiar exercise in the twisting of certain muscles may be obtained. For example, one ball *e* may be all iron and the other all wood, in which case the wrist will feel a peculiar twist and will become strengthened by proper regularity and moderation in using the same.

It is evident that the invention may be modified without departing from the spirit thereof. For example, the nut *b* may be replaced by the ring *f*, which itself may be a nut and may be provided with indentations *m*, so that the fingers may be placed therein and the nut removed. The nut thus modified is lettered *f''*. It is shown in Figs. 6 and 7.

In Fig. 4 the segments are piled up irregularly in the manner they are apt to be when removed from the device.

The practical advantage of the wood sections of equal volume with the iron is that

they serve to maintain the dumb-bell always of the same size and shape and facilitate the manipulation and simplify the construction. When an iron segment is removed to make the device lighter, a wooden one of the same size and shape, weighing, comparatively, nothing, is substituted. For this reason the wooden or light segments may be termed "spacers," as this word expresses one of their functions.

I claim as my invention—

1. A dumb-bell consisting of the combination of a central handle, balls attached to and removable from said handle, the said balls being divided into spherical segments of which some are of a material—such as wood—of a given specific gravity and the remainder of another substance—such as iron—of greater specific gravity, the volumes of corresponding segments on the respective balls being equal to each other.

2. A ball for a dumb-bell, consisting of the combination of segments of different specific gravities and means for holding the same together.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 6th day of April, 1892.

CHARLES WILLIAM AYTON.

Witnesses:

EDWARD P. THOMPSON,
J. R. IRWIN.