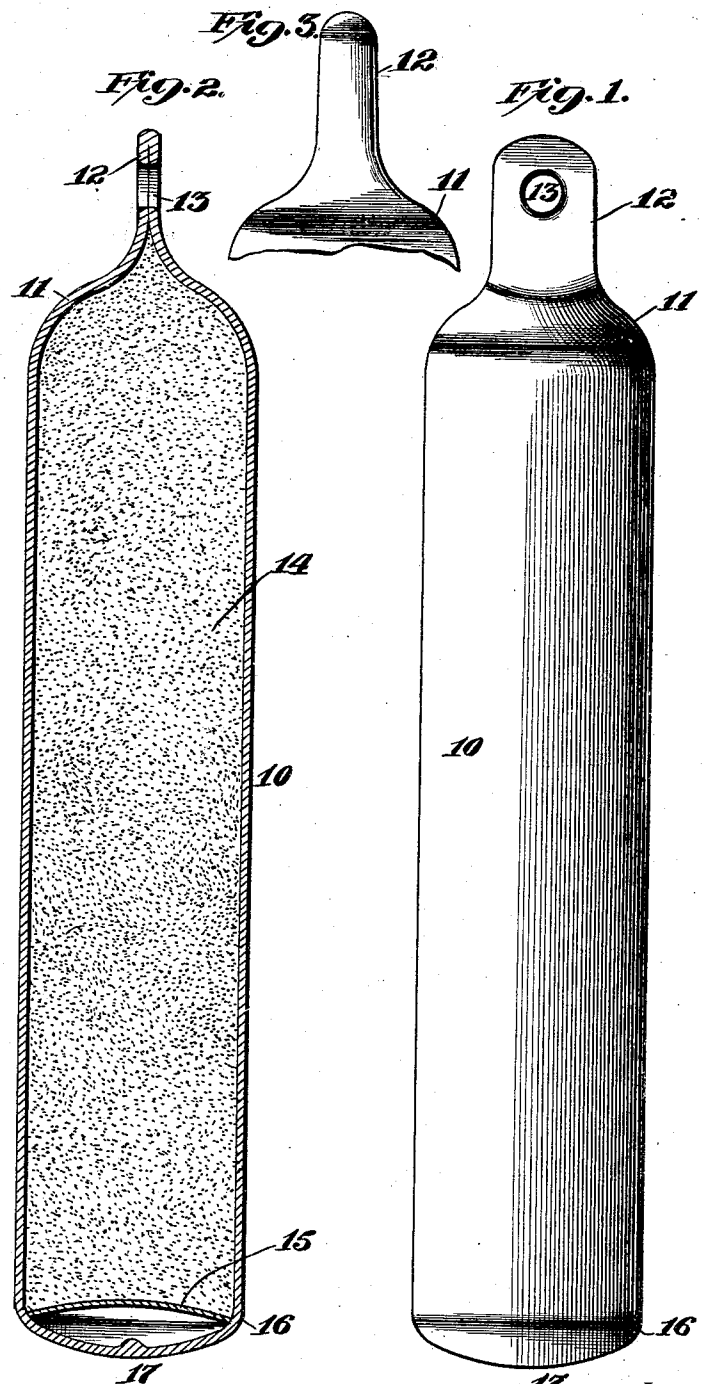
No. 863,634. PATENTED AUG. 20, 1907.

C. E. POPE.

SASH WEIGHT.

APPLICATION FILED JUNE 11, 1906.



Attest:

E. Mitchell

Geo. L. Cooper

Inventor:

Charles E. Pope.

by Dickerson, Brown, Raegener & Binney Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES E. POPE, OF PITTSBURG, PENNSYLVANIA.

SASH-WEIGHT.

No. 863,634. Specification of Letters Patent. Patented Aug. 20, 1907.

Application filed June 11, 1906. Serial No. 321,132.

To all whom it may concern:

Be it known that I, CHARLES E. POPE, a citizen of the United States, and a resident of Pittsburg, county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Balance-Weights, of which the following is a specification.

My invention relates to tubular balance weights such as are commonly used to counterpoise window sashes, and for similar purposes. Its object is to produce a weight which shall be of substantially the same specific gravity as the ordinary cast iron weight, but of smoother exterior surface, and less frangible, as well as more economical in manufacture.

In the drawings, Figure 1 is an elevation of the sash weight embodying my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a partial elevation showing the upper end of the weight during the process of manufacture.

To make a sash weight according to my invention, I take a piece of wrought iron or steel tubing of the proper length and diameter for the required weight, and draw in its upper end to form a shoulder 11 and a head 12, the head being substantially or entirely closed at its tip. I then flatten the head 12 and transversely pierce it at 13 to form an aperture for the reception of the supporting cord or chain. I then fill the body 10 of the weight with a mass 14 of suitable heavy filler, which may be iron oredust, pulverized scale or heavy cinder. I preferably place in the lower end of the weight a disk 15, which may be of light sheet metal, and then draw in the lower end of the tube to form a shoulder 16 and closed end 17.

I preferably perform these operations as follows: The body 10 of the tube is first chucked in a lathe with one end projecting from the face of the chuck. By means of a suitable tool applied to this projecting end during the rapid rotation of the tube the end is indrawn, as shown in Fig. 3, and its upper end frictionally welded together. The head 12 is then flattened by a blow or pressure in a suitable press and transversely pierced at 13, the aperture being preferably beveled from the center toward each edge to prevent chafing of the suspending cord. The tube is then inverted and solidly filled with the filler, the disk placed in position, and the tube again placed in the lathe with its open end projecting from the chuck. A tool of suitable shape applied to the open end of the tube forms it to the shape shown in Fig. 2 of the drawings, and welds its lower end by reason of the great heat frictionally generated.

It will be seen that the weld in the bottom is preferably thicker than the surrounding portions, thus better insuring its complete closure and also reinforcing the bottom centrally.

It will be seen that when made in this manner, both ends of the tube are absolutely closed by the frictional welding process. The exterior of the weight has the smoothness of the wrought iron or steel tube from which it is made. There are no projecting shoulders or fins at any point, while the weight of the finished counterpoise is, as above stated, substantially equal to that of cast iron. The head being like the entire tube of wrought metal is very strong and cannot ordinarily be broken off with the roughest handling. In addition, the hole 13 for the cord being pierced and preferably tapered, as shown, affords an easy passage for the cord in contradistinction to the hole cast in the upper end of the ordinary sash weight, which is apt to fill with sand or slag which has to be chipped out before the cord can be placed therein, leaving rough edges, which are apt to cut or chafe the cord.

I have filed of even date herewith, Serial Nos. 321,133; 321,134 and 321,135, other applications for balance weights formed with wrought tubular bodies, and showing different methods of closing the upper and lower ends thereof. As these closures of the upper and lower ends are independent of each other, it is obvious that they are to a certain extent interchangeable, that is, that the indrawn head of the present application might be used with the form of bottom closure shown in either of the other applications.

It is of course obvious that I do not herein claim anything claimed in any of said applications.

What I claim is:

1. As an article of manufacture, a balance weight composed of an integral hollow seamless or welded metal body containing a heavy filling material, one end of the body having a reduced shoulder and perforate head, and the other end being closed by the integral metal of the body.

2. As an article of manufacture, a filled metal balance weight having a completely closed seamless casing of integral tough metal such as wrought steel provided with means at one end for attaching a cord.

3. As an article of manufacture, a filled metal balance weight having a closed cylindrical body portion with an indrawn flattened and perforated head integral therewith.

4. A balance weight comprising a seamless tubular body having an indrawn transversely perforated head and an integral closed bottom, and a heavy filling.

5. As an article of manufacture, a filled metal balance weight having an indrawn, seamless and imperforate integral bottom and an indrawn head transversely perforated.

6. As an article of manufacture, a filled metal balance weight having a closed head end and an integral seamless indrawn and welded imperforate bottom.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES E. POPE.

Witnesses:
JOHN F. KRAFT,
JAMES S. DOUTHITT.