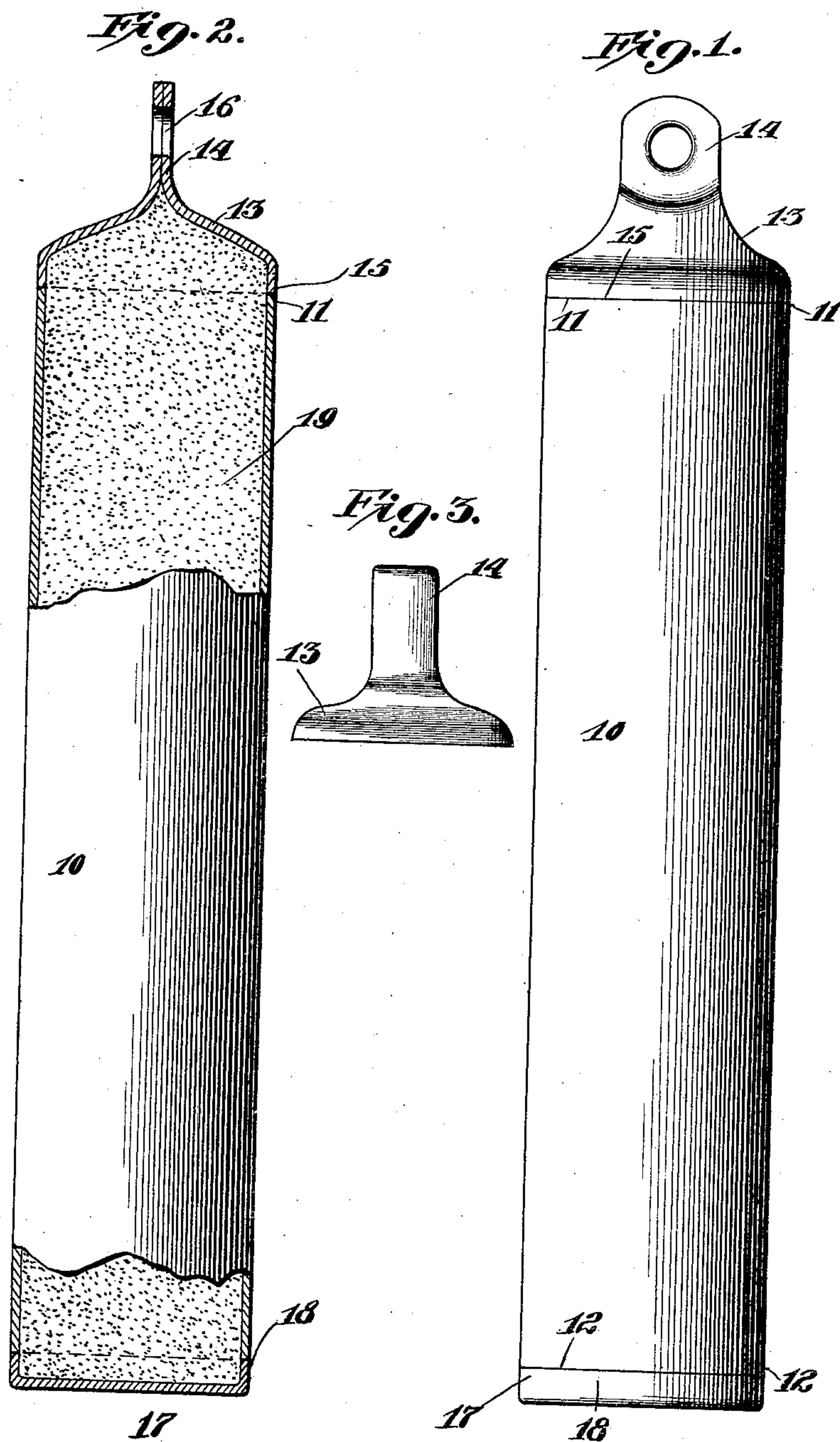


No. 863,637.

PATENTED AUG. 20, 1907.

C. E. POPE.
BALANCE WEIGHT.
APPLICATION FILED JUNE 11, 1906.



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UNITED STATES PATENT OFFICE.

CHARLES E. POPE, OF PITTSBURG, PENNSYLVANIA.

BALANCE-WEIGHT.

No. 863,637.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed June 11, 1906. Serial No. 321,135.

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 view partly in section and partly in elevation at a right angle to the view shown in Fig. 1. 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 the present invention I take a piece of wrought iron or steel tubing of the proper length and diameter for the required weight, the ends 11 and 12 of the tube being cut off preferably at right angles with its axis. I then draw or stamp from wrought metal a head or upper end 13 for the tube, the shoulder portion of which is of a diameter corresponding to the bottom of the tube so that its edge 15 will abut against the edge 11 of the tube.

The head 13 is formed with an indrawn portion 14, which I afterward flatten, as shown in Figs. 1 and 2, so that its walls are closed together for a substantial portion of their length. Through this closed flattened portion of the head 14 I pierce an aperture 16 for the reception of a supporting cord or chain. I also draw or stamp from wrought metal a bottom shell 17, the vertical walls 18 of which are of the same diameter as the tube body 10 and so as to abut thereagainst. One of the end closures, preferably the head 13, is then welded on one end of the tube body 10, preferably by the electric welding process. The tube is then solidly filled with a heavy filling material 19, which may be iron ore dust, pulverized scale or heavy cinder. The closure 17 is then welded on to the lower end of the tube, which completes the weight. Any projecting fins produced by the welding

process may be ground off in the well known manner. It will be seen that when made in this manner both ends of the tube are absolutely closed. The exterior of the weight has the smoothness of the wrought iron or steel tube from which it is made, the tube is of the same diameter for its entire effective length without any projecting shoulders, and the weight of the finished counterpoise is, as above stated, substantially equal to that of cast iron. The head being of wrought metal and welded to the body of the tube cannot be broken off with the roughest handling. In addition, the hole 16 for the cord being pierced and preferably tapered, as shown, affords a smooth easy passage for the cord, in which respect it is much superior to the holes usually made in cast iron weights, which are apt to fill with sand or slag which must 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. 321,132; 321,133 and 321,134, 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, 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. A balance weight comprising a tubular wrought body, an indrawn transversely pierced head welded thereon, a closed bottom, and a heavy filler.
2. A balance weight comprising a tubular wrought body, a bottom welded thereon, an indrawn closed transversely pierced head, and a heavy filler.
3. A balance weight comprising a tubular wrought body, end closures welded thereon, one of such closures being indrawn and transversely perforated, and a heavy filler.

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.