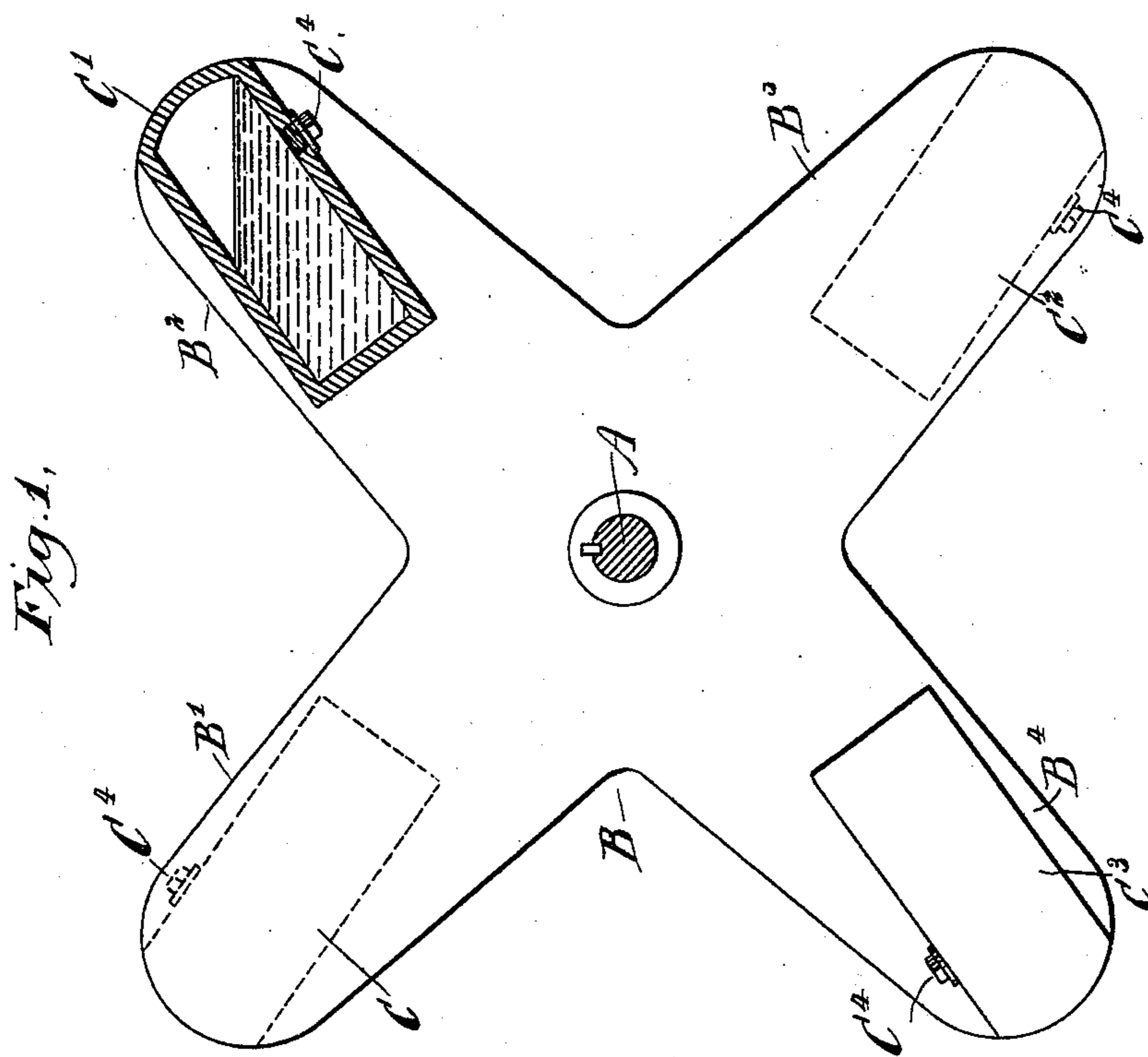
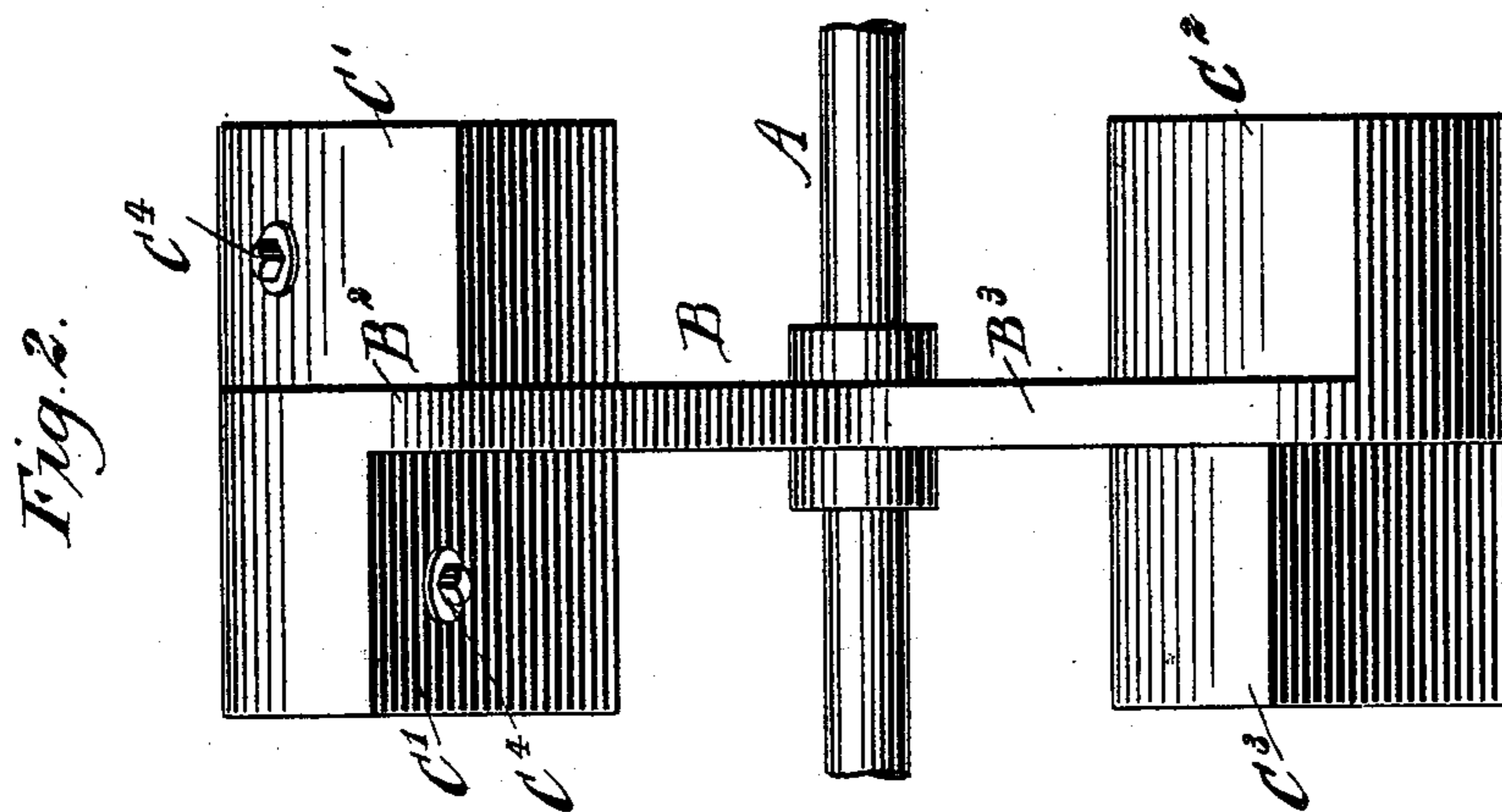


(No Model.)

A. S. LA FONTAINE.  
SHAFT BALANCE.

No. 583,756.

Patented June 1, 1897.



WITNESSES:

Edward Thorpe  
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# UNITED STATES PATENT OFFICE.

ALEXANDER S. LA FONTAINE, OF CERRO-COLORADO, ISLAND OF ARUBA.

## SHAFT-BALANCE.

SPECIFICATION forming part of Letters Patent No. 583,756, dated June 1, 1897.

Application filed May 8, 1896. Serial No. 590,786. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER SMITH LA FONTAINE, of Cerro-Colorado, in the Island of Aruba, near Curaçao, in the Dutch West Indies, have invented a new and Improved Shaft-Balance, of which the following is a full, clear, and exact description.

The invention relates to balance devices for shafts; and its object is to provide a new and improved balance, more especially designed for use on pumps and other manually-operated machines, the device being arranged to counterbalance any wheel or wheels upon its shaft and also permit the operator to start said shaft and to actuate the machine with great ease.

The invention consists principally of a spider adapted to be secured at its middle to the working shaft and provided on the free ends of its arms with closed boxes or chambers adapted to be partly filled with a liquid.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of the improvement with one of the boxes or chambers in section. Fig. 2 is an end or edge elevation of the same.

On the driving or working shaft A of the machine on which the balance is to be applied is secured a spider B, having a series of radially-extending arms B' B<sup>2</sup> B<sup>3</sup> B<sup>4</sup>, connected only at their inner ends or at the center of the spider and supporting on their outer or free ends closed boxes or chambers C C' C<sup>2</sup> C<sup>3</sup>, respectively, each of which is provided with a filling-plug C<sup>4</sup> for partly filling each of the chambers with a suitable liquid, preferably water.

By reference to the drawings it will be seen

that the boxes or chambers are arranged alternately on opposite sides of the arms, and when the shaft A is set in motion and the spider turns with the shaft then the liquids, partly filling the chamber, is thrown outward by centrifugal force, and the liquid being movable within its boxes will tend to drop by gravity in a vertical line and give a greater leverage to the spider to turn it than any construction of a fly-wheel of entirely solid material. My construction also, by reason of the liquid-contained boxes, will greatly aid the turning of the shaft A without jerks or jars, so that a sufficient force is obtained to counterbalance any wheel or wheels upon its shaft and also permit the operator to start said shaft and the machine with great ease.

It will be seen that by the arrangement described the liquid, partly filling the boxes or chambers, forms a running weight for the arms of the spider without, however, creating a jerk or jar, as is so frequently the case with balance-wheels for sliding weights.

My construction also by dispensing with a rim has less weight and bulk than a fly-wheel, and for the same reason and also because of the shifting liquid in the boxes there is less weight to be overbalanced and more weight and greater leverage to accomplish it.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

A shaft-balance consisting of two arms or spokes keyed to the shaft, said arms having upon their outer ends and projecting therefrom in a longitudinal direction closed chambers, said chambers being partially filled with a liquid and being also arranged alternately upon opposite sides of the arms, substantially as described.

ALEXANDER S. LA FONTAINE.

Witnesses:

JAN GERRIT LAMPE,  
JUAN B. CAPRILES.