

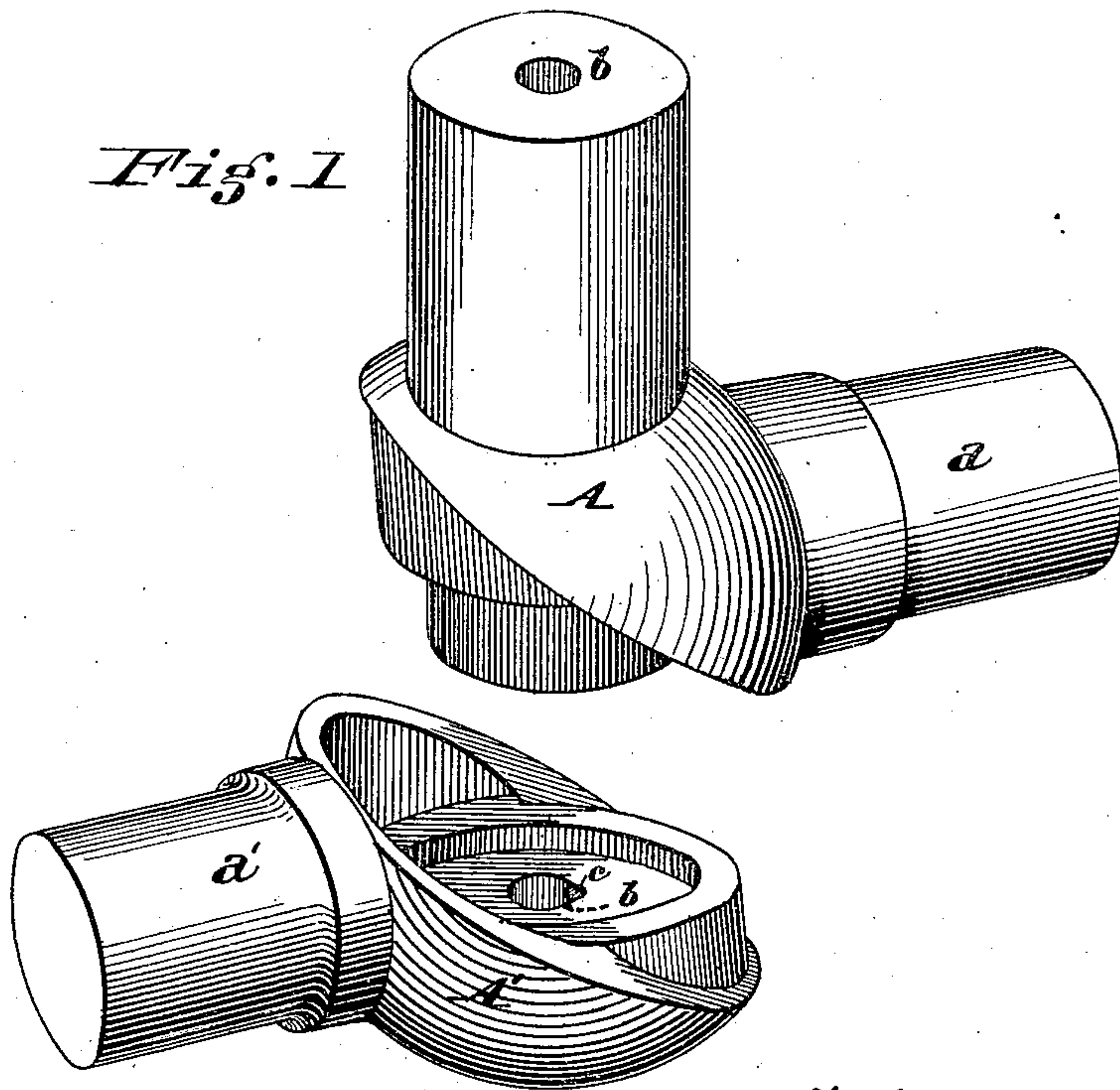
F. LUNKENHEIMER & A. RIEGLER.

Sand-Core for Casting.

No. 164,313.

Patented June 8, 1875.

*Fig. 1*



*Attest.*

*Edgar J. Gross*

*John C. Jones*

*F. Lunkheimer & A. Riegler.*

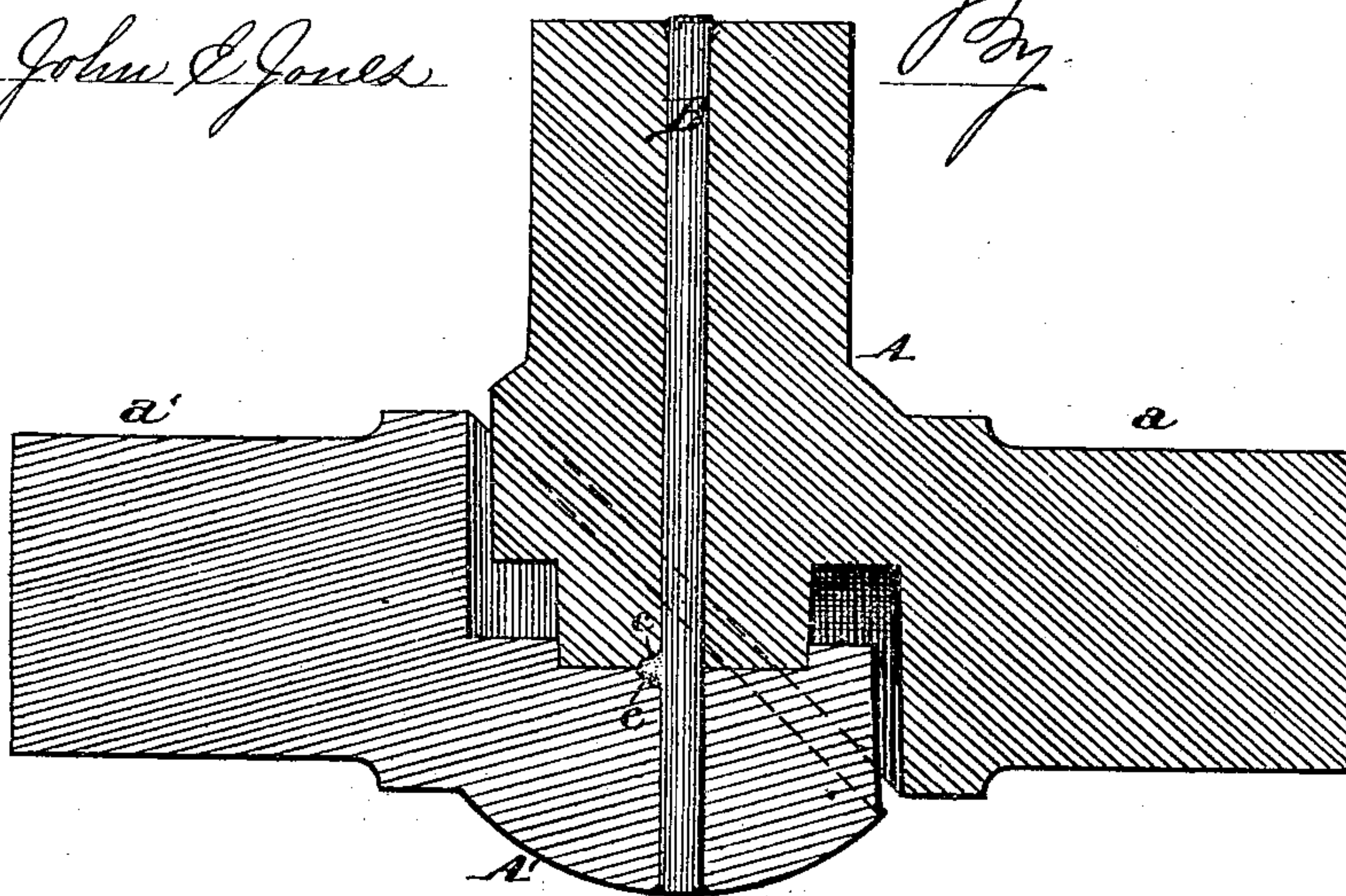
**Inventors.**

*D.P. Holloway & Co*

*By*

*Atty's.*

*Fig. 2*



# UNITED STATES PATENT OFFICE.

FREDERICK LUNKENHEIMER, OF CINCINNATI, OHIO, AND ALEXANDER  
RIEGLER, OF NEWPORT, KENTUCKY.

## IMPROVEMENT IN SAND-CORES FOR CASTING.

Specification forming part of Letters Patent No. **164,313**, dated June 8, 1875; application filed  
April 12, 1875.

*To all whom it may concern:*

Be it known that we, FREDERICK LUNKENHEIMER, of Cincinnati, Hamilton county, State of Ohio, and ALEXANDER RIEGLER, of Newport, Campbell county, State of Kentucky, have invented an Improvement in Sand-Cores for Castings, of which the following is a specification:

Our invention relates to the formation of two-part cores, which it has been necessary, heretofore, to balance by making the "prints" long and heavy, to exceed in weight the part which has no support; and our invention consists in joining the core together at the junction by a rivet of molten lead or other soft metal poured into an aperture extending through both parts.

Figure 1 is a perspective view of the two parts of a core for the formation of the interior of a globe-valve. Fig. 2 is an axial section of the core complete, its two parts being united by the soft-metal rivet.

A A' represent the two parts of the core of a globe-valve, having only the length of prints *a a'* necessary to support the ends of the core properly in the sand. It is obvious that with such short cores, the two parts would tip over and fall into the mold. To prevent this, and firmly unite the two parts together, we provide in each part an aperture,

*b*, located so as to match or be in the same line, and when the parts are placed together in the proper relation we run in a molten-metal plug or rivet, B, as shown, which, when cold, is the means of firmly connecting the two parts together. The ends of the lead plug may run in countersinks in the sand, so as to make rivet-head, but this is hardly necessary as the roughness of the sand will suffice to prevent the displacement of the plug. If desirable, indentations *c* may be made in the sand for the metal to run into, for the prevention of the twisting of one of the parts of the core upon the other. In manufacturing globe-valves, we place a number of these two-part cores in a frame, and with a ladle go along the line and run in the leaden plugs, so that a great number can be done quickly and all will be alike.

We claim—

In combination with a two-part sand-core, A A *a a*, the molten-metal plug B, substantially as and for the purpose specified.

In testimony of which invention, we hereunto set our hands.

FREDERICK LUNKENHEIMER.

ALEXANDER RIEGLER.

Witnesses:

EDGAR J. GROSS,

J. L. WARTMANN.