2 Sheets--Sheet 1.

W. A. COGSWELL.

Core-Boxes and Cores.

No. 154,747. Patented Sept. 8, 1874.

Fig. 1.

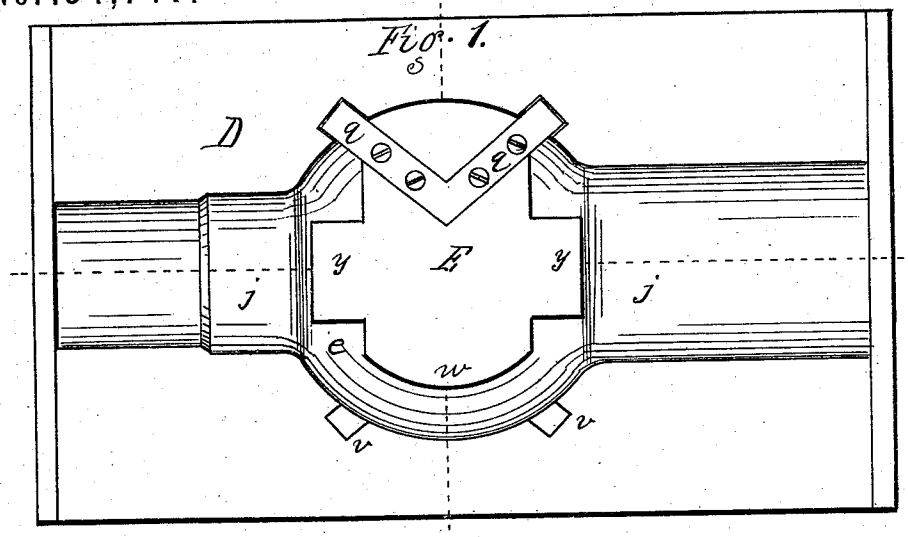


Fig. 2.

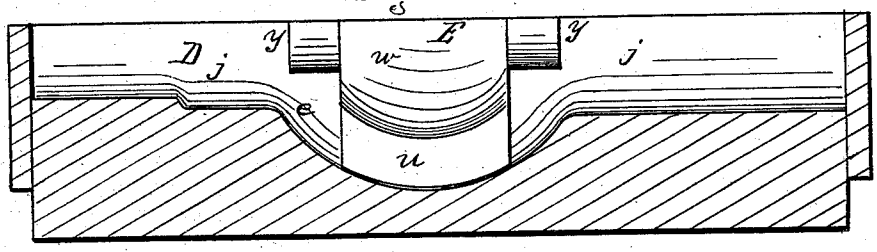


Fig. 3.

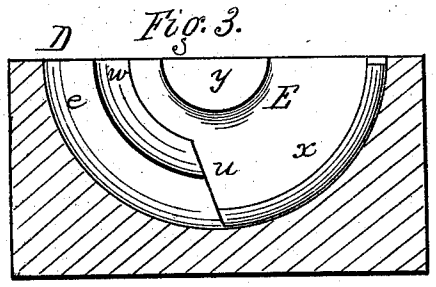


Fig. 4.

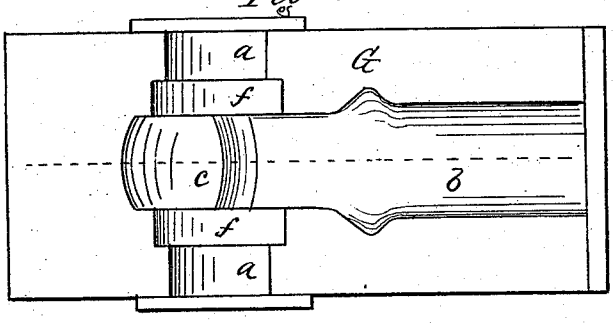
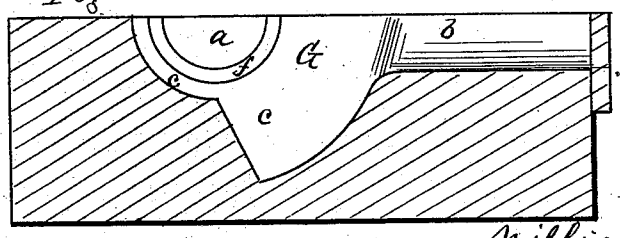


Fig. 5.



Witnesses.

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2 Sheets--Sheet 2.

W. A. COGSWELL.

Core-Boxes and Cores.

No. 154,747. Patented Sept. 8, 1874.

Fig. 6.

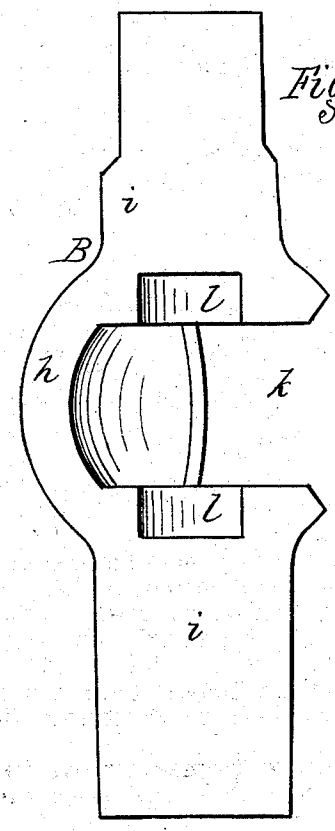


Fig. 7.

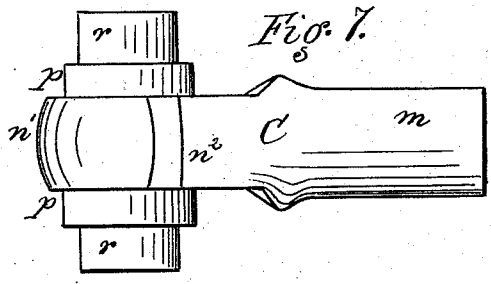


Fig. 8.

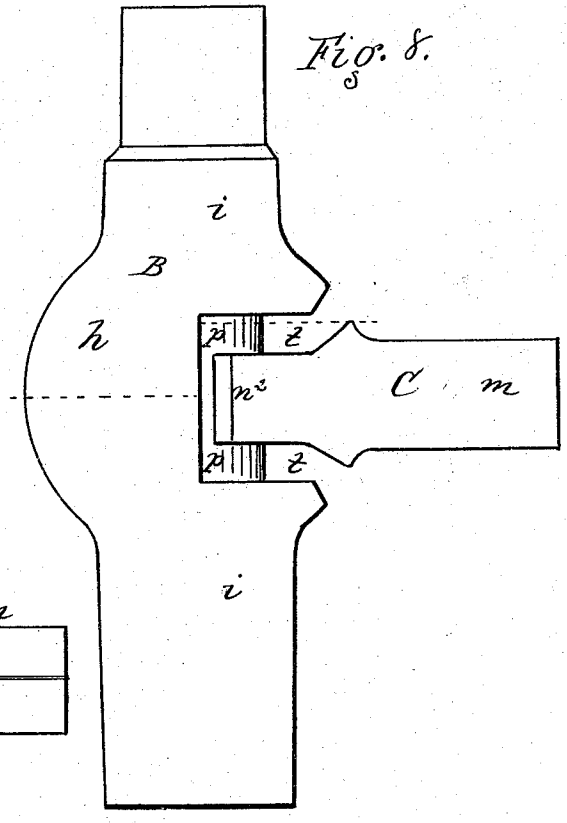
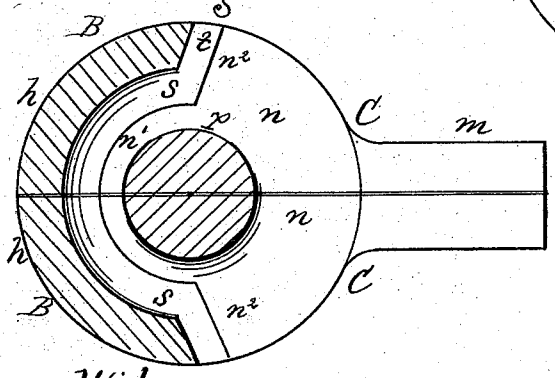


Fig. 9.



Witnesses.
E. B. Scott
George H. Tuttle

Inventor.
William A. Cogswell,
per R. F. Osgood,
atty.

UNITED STATES PATENT OFFICE.

WILLIAM A. COGSWELL, OF ROCHESTER, NEW YORK, ASSIGNOR TO JUNIUS JUDSON, OF SAME PLACE.

IMPROVEMENT IN CORE-BOXES AND CORES.

Specification forming part of Letters Patent No. **154,747**, dated September 8, 1874; application filed December 8, 1873.

CASE A.

To all whom it may concern:

Be it known that I, WILLIAM A. COGSWELL, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Core-Boxes and in the Construction of Cores; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

My invention consists of a core-box of peculiar construction for forming the cores used in casting the globular casings of steam governor-valves, and also in a novel construction of cores, as hereinafter described.

In the drawings, Sheet 1 represents the core-box, and Sheet 2 the core. Figure 1 is a plan of the main box. Figs. 2 and 3 are longitudinal and cross-sections of the same. Fig. 4 is a plan of the auxiliary box. Fig. 5 is a cross-section of the same. Fig. 6 is an elevation of one-half of the main core. Fig. 7 is a similar view of the auxiliary core. Figs. 8 and 9 are an elevation and cross-section, respectively, of the complete core.

This core is intended for casting the interior of globular governor-valve casings, in which a jacket is used to allow the steam passing through the upper seat to return to the bottom of the casing, to unite with the current passing through the lower seat before entering the steam-chest.

B B are the counterparts or halves constituting the main core. The inner faces of these parts fit closely together, and the exterior is formed with a central globe, *h*, which forms the enlarged globular space in the center of the shell. Above and below the globe are cylindrical projections *i i*, which form the openings in the upper and lower ends of the shell. A central opening, *k*, is made in one side of the globe, which extends inward halfway, more or less, thus leaving the closed portion of the globe of about an equal extent in cross-section. Half-sockets *l l* are formed in the inner faces of the counterparts, above and below the opening *k*, to receive the prints of the auxiliary core. C C are the counterparts or halves of the auxiliary core. Their flat inner surfaces also fit together; and the outer surface consists of a cylindrical projection, *m*, which forms the inlet-pipe of the casing; a body, *n*, with a circular projecting rim, n^1, at the rear, and offsets n^2 n^2 at the sides, which form the interior shell and jacket of the casing; hubs or projections *p p*, which form the openings of the seats in the casing; and core-prints *r r*, which rest in the half-sockets *l l* of the main core.

The construction is such that when the cores are fitted together and placed in the mold the molten iron poured in the latter will flow into the space *s*, Fig. 9, and form the jacket of the casing, and also into the spaces *t t*, above and below the body of the auxiliary core, and form the webs which contain the valve-seats.

The counterparts of the main core are both formed in a single core-box, D, having a changeable center-piece, E. The depression in the box is of the same outline as the half-core *e*, being the globular portion, and *j j* the cylindrical end portions. The center-piece E is changeable from one side to the other by means of arms *q q* attached thereto, and fitting in mortises *v v* on opposite sides. The top of the box and of the center-piece is plane, to allow smoothing off. The front and under side of the center-piece is provided with a segment-face, *w*, whose diameter is as much less than the diameter of the depression *e* as the thickness of the side of the globe *h* of the core which it forms. In the rear of this segment is an offset, *u*, which projects downward to the bottom of the cavity, and in the rear of this is a circular bearing, *x*, which fills the whole rear of the cavity. On each side of the center-piece are prints *y y*.

The operation is as follows: The center-piece being fitted in place, the sand is filled into the depression, and around the center-piece. The space between the segment *w* and the front of the cavity *e* forms the thickness *h*. The bearing *x* forms the opening *k*, and the prints *y y* form the half-sockets *l l* of the core. The sweeping off of the sand level with the top of the box forms the flat inner sur-

face of the core. To form the opposite counterpart, B, the center-piece is simply shifted to the opposite position, as before described.

The counterparts of the auxiliary core are both formed in a single box, G, as shown in Figs. 4 and 5. This box is a counterpart of the half-core before described, consisting of cavities *b c f a*, corresponding with the stem *m*, body *n* n^1 n^2, projections *p p*, and prints *r r*.

The main core-box may be adapted to form cores for valves having the steam pass horizontally, by forming right-angled cavities on opposite sides of the globular center, for an extension of the core. The center-piece E will cut off one of these cavities when not in use.

What I claim as new is—

1. The combination, with the box D, of the center-piece E, provided with the segment *w* and bearing *x*, and made changeable in position from one side to the other, for forming the counterparts B B of the main core, as shown and described.

2. A core for casting the interior of valve-casings, consisting of the main counterparts B B, and auxiliary counterparts C C, combined together so as to create an auxiliary space between for the casting of the jacket and webs with the main shell, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WM. A. COGSWELL.

Witnesses:

R. F. OSGOOD,

E. B. SCOTT.