J. M. ROHRER.

MANDRELS OR CORES FOR CASTING.

No. 182,482. Patented Sept. 19, 1876.

Fig. 1

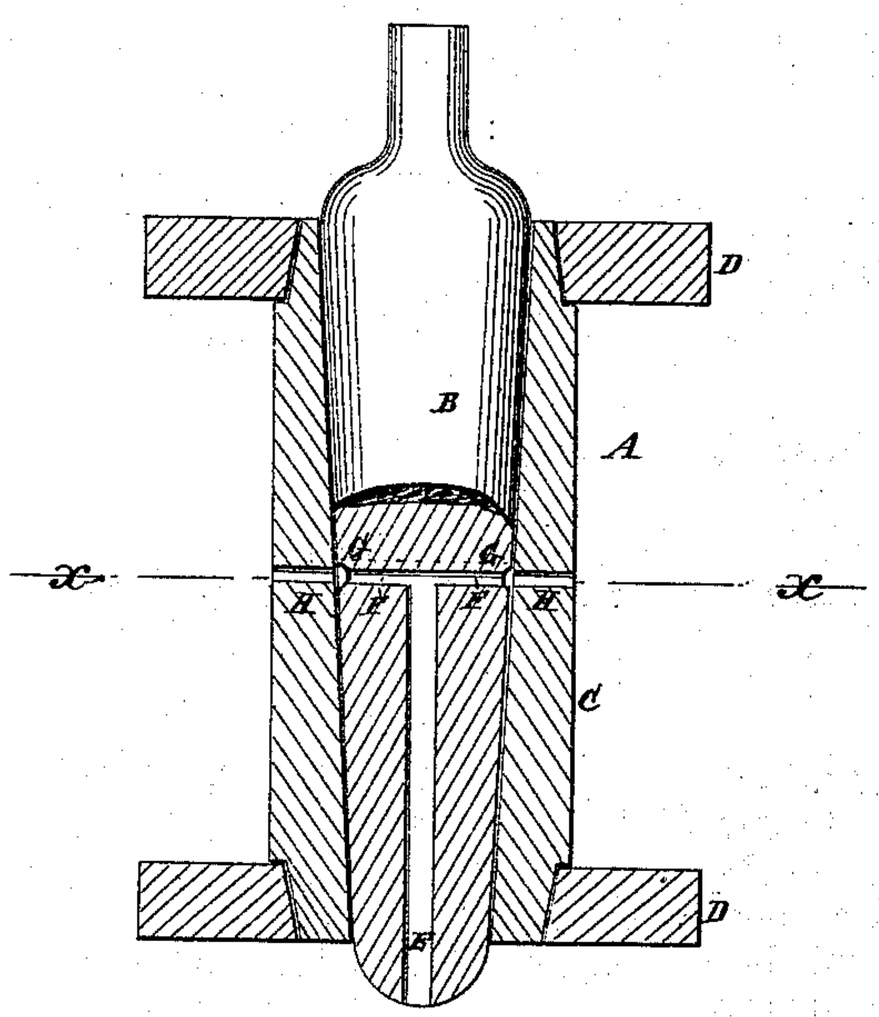
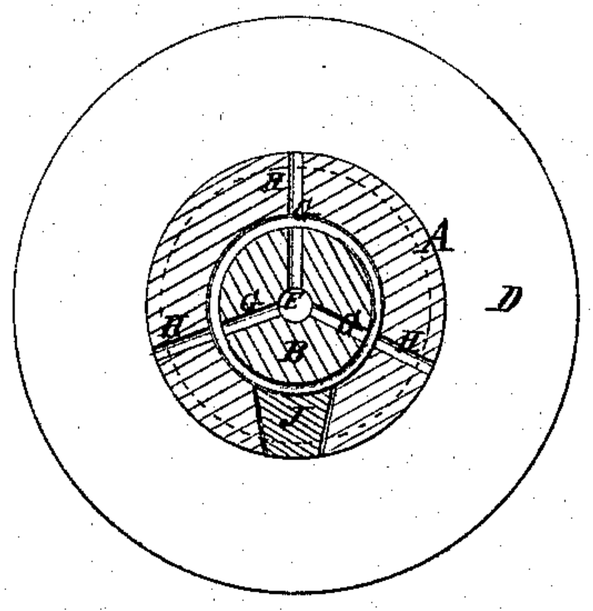


Fig. 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES M. ROHRER, OF SHAMOKIN, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM L. FOLLOWER, OF SAME PLACE.

IMPROVEMENT IN MANDRELS OR CORES FOR CASTING.

Specification forming part of Letters Patent No. **182,482**, dated September 19, 1876; application filed June 13, 1874.

To all whom it may concern:

Be it known that I, JAMES M. ROHRER, of Shamokin, Northumberland county, Pennsylvania, have invented a new and useful Improvement in Sectional Mandrels, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claim.

Figure 1 is a sectional view of the mandrel, and Fig. 2 is a transverse section of Fig. 1, taken on the line *x x*.

Similar letters of reference indicate corresponding parts.

A is the mandrel. B is the central plug. C is the shell, and D D are the flanges for holding the parts of the mandrel together. These flanges are bored out tapering to fit the tapering ends of the shell C, so as to be easily removed. The central plug B tapers to fit snugly the tapering hole through the shell, so that it may readily be driven out of the shell. E is the vent-hole in the plug, which extends from the small end to near the middle, where it connects with lateral holes F, which intersect the groove G, which is turned in the surface of the plug. H H are vent-holes in the shell, which correspond in position with the grooves G. The gases evolved from the cylinder or casting will pass through these holes into the center of the plug and escape. This vent arrangement is seen in Fig. 2. The shell C is cut longitudinally to receive the beveled key J. This key is cut beveling, so that it will give toward the center, as the shell contracts when the center plug is driven from the shell to relieve the pressure caused by the shrinkage of the casting in cooling.

This sectional mandrel is used in casting cylinders of any kind that require hard, smooth, inner surfaces. The flanges D D will smooth and harden the faces or ends of the cylinder, or other article cast. The vent arrangement shown in Fig. 2 may be applied to other purposes, if desired.

By extending the tapered plug B entirely through the shell C, it may be driven at a certain stage of the cooling operation, this being absolutely essential to the manufacture of chill-bore car-wheels, so that the yielding shell may be pushed out and the wheel placed in the annealing-oven at the proper time.

What I claim is—

The combination of central tapering plug B, internally-tapering sectional shell C, beveled key J, and flanges D D, the plug having vent-hole E, lateral holes F, and groove G, while the shell has vent-holes H, all substantially as shown and described, for the purpose specified.

JAMES M. ROHRER.

Witnesses:

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