J. K. DIMMICK.

COLLAPSING CORE FOR CASTING.

No. 181,151. Patented Aug. 15, 1876.

Fig. 1

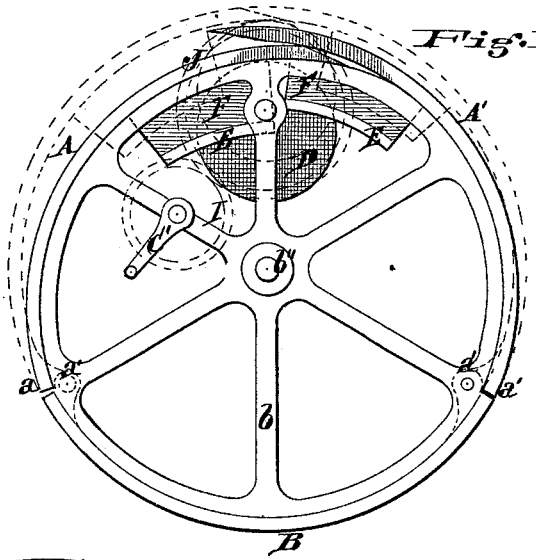

Fig. 4

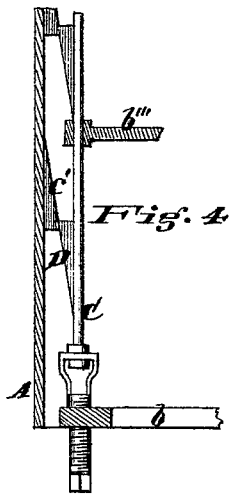

Fig. 2

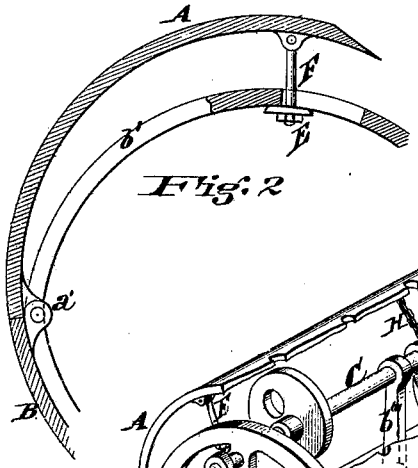

Fig. 3

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JACOB K. DIMMICK, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN COLLAPSING CORES FOR CASTINGS.

Specification forming part of Letters Patent No. **181,151**, dated August 15, 1876; application filed May 20, 1876.

To all whom it may concern:

Be it known that I, JACOB K. DIMMICK, of Newport, Campbell county, State of Kentucky, have invented an Improvement in Collapsing Core-Bars, of which the following is a specification:

My invention relates to the class of core-bars adapted to expand in diameter to assume the size necessary for use in the formation of the core, and to contract in diameter to admit of its being readily removed from the mold after the pipe is cast.

My invention consists, in the first part, of a hollow bar, whose shell is composed partly of an unyielding plate or cylindrical section, formed upon or secured to the casting, which forms the ends of the bar, and partly by two wings or sections hinged to the rigid part of the shell, and operated to expand or contract the bar by the movement of a longitudinal bar or shaft in the interior of the shell.

My invention consists, in the second part, of a combination of parts, including cams to operate the expanding wings.

My invention consists, in the third part, of a combination of parts, including stops, to limit the expansion of the wings, and enable the cams to rigidly secure them in the expanded position.

Figure 1 is an end view of a core-bar embodying my invention. Fig. 2 is a cross-section, showing one of the expanding wings and one form of stop for the same. Fig. 3 is a perspective view of my bar, part of the shell being removed to expose the interior mechanism. Fig. 4 is a view illustrating a modification in the form of the cams for expanding the wings.

The shell of the bar is composed of hinged expanding wings A A′ and rigid plate or bar B, the latter being attached to the ends *b b′*, to which the customary trunnions *b″ b″* are secured. From the points where the hinged wings A A′ join the fixed bar B the ends *b b′* are eccentric, as best seen in Fig. 1, thus permitting said hinged wings to assume the collapsed position there shown. The edges *a* of the wings A A′ are connected to the part B by positive hinges *a′*, or by any other connection which will permit these wings to swivel at these edges on the part B. The expanding edges of the wings may be overlapping, as shown, and beveled. In the ends of the bar B a longitudinal shaft, C, is supported, and it may be also supported at intermediate positions by the radial arms *b‴*. It may be either a rotating shaft with cams D, adapted to press against the inside face of one of the wings, as shown in Figs. 1 and 3; or it may be a sliding shaft or bar with right-line cams D, adapted to press against projections *c′* on the inside of one of the wings, as shown in Fig. 4. The wings are expanded by the movement of the shaft in a direction which will tend to bring the greatest projection of the cams in contact with the inside faces of the wings, and they are contracted by the reverse movement, the wings being then permitted to fall inward, so as to lessen the diameter of the bar, and permit its convenient withdrawal from the casting and flask. In order to secure the expansion of the wings to a definite limit, and allow the cams to rigidly secure the wings in the expanded position, I provide stops to the wings, designated by the letter E in the figures. These stops may be, as shown in Fig. 1, to wit, projections F from the wings, with the stops E in the shape of flanges, which, when the wings are expanded, impinge against the interior edges of the end pieces *b b′*, or, as shown in Figs. 2 and 3, to wit, projections F from the wings and stop-plates E, the projections being bolts or rods, and the stops, nuts, and washer-plates.

The wings A A′ may be forcibly drawn inwardly, if necessary, by the provision of rollers G and chains H, or otherwise; and, in order to give sufficient power for the expansion of the wings of heavy bars, the operating-crank C′ may be connected to the bar C by means of gear-wheels I J. (Shown in dotted lines in Fig. 1.)

I claim—

1. A collapsing core-bar composed of bar B,

provided with rigidly-connected ends or heads, and hinged wings A A′, substantially as specified.

2. The combination, substantially as specified, of the bar B, provided with rigidly-connected ends or heads, the hinged expansion-wings A A′, the shaft C, and the cams D.

3. The combination of bar B, provided with rigidly-connected ends or heads, expansion-wings A A′, shaft C, cams D, and limiting-stops E, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JACOB K. DIMMICK.

Witnesses:
JOHN E. JONES,
EDGAR J. GROSS.