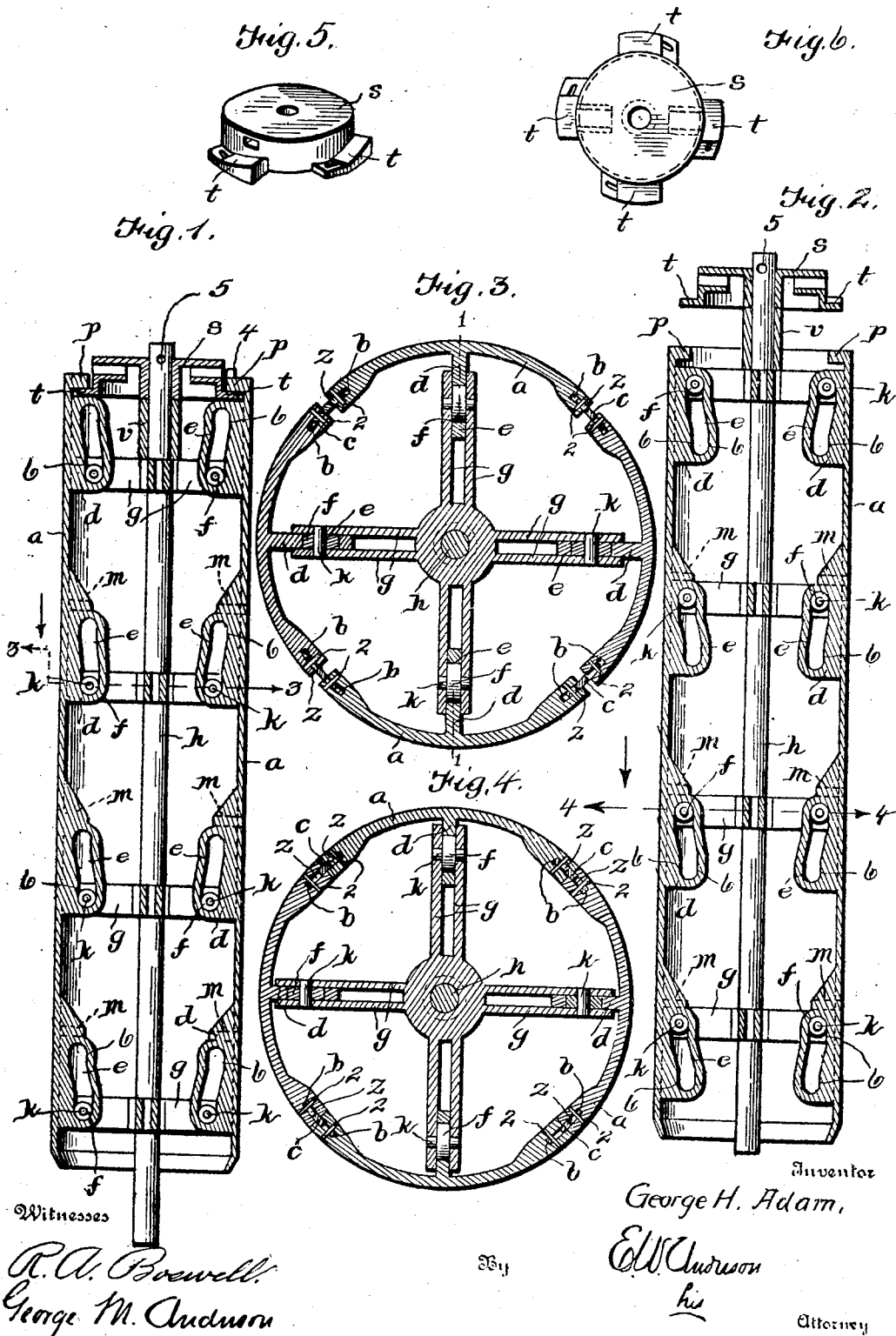


G. H. ADAM.
CORE BAR.

APPLICATION FILED FEB. 13, 1904.



UNITED STATES PATENT OFFICE.

GEORGE H. ADAM, OF HOME CITY, OHIO.

CORE-BAR.

No. 796,789.

Specification of Letters Patent.

Patented Aug. 8, 1905.

Application filed February 13, 1904. Serial No. 193,449.

To all whom it may concern:

Be it known that I, GEORGE H. ADAM, a citizen of the United States, and a resident of Home City, in the county of Hamilton and State of Ohio, have made a certain new and useful Invention in Core-Bars; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a section through my core-bar on the line 1 1, Fig. 3, with sections expanded. Fig. 2 is a similar view with sections contracted. Fig. 3 is a section on the line 3 3, Fig. 1. Fig. 4 is a section on the line 4 4, Fig. 2. Figs. 5 and 6 are detail views of the lock-head *s*.

The object of the invention is to provide an improved expanding and contracting core-bar adapted to be operated by longitudinal movement of a draw-bar spindle, so that when the core-bar is drawn by means of said spindle it will automatically contract, causing the bar to relieve itself from the core.

In the accompanying drawings the letter *a* designates the longitudinal sections or staves of the core-bar. Each of these sections is channeled in its edge portion to provide longitudinal seats *b* for the longitudinal joint tongues or strips *c*. Each of these strips *c* engages the seats *b* of the adjacent edge portions of adjacent sections in such wise as to bridge the interval between them when the core-bar is expanded and to strengthen the joint and hold the sections securely in relative position. It is designed by means of these strips or tongues to provide a closed and accurate joint of uninterrupted character not only when the core-bar is contracted, but also when it is expanded. The channels in the edge portions of the sections are made of proper depth to allow for the contraction of the core-bar when the sections are brought together with their edges in contact.

The sections are provided with interior lugs *d*, having inclined slots or guideways *e* engaging anti-friction-rollers *f* of the cross-heads or radial arms *g*, which are carried by the operating-rod or draw-bar spindle *h*. The anti-friction-rollers are connected to the arms *g* by means of short bolts *k*. Stop-lugs *m* are

provided on the inside of each section to engage the arms *g* when the core-bar is being withdrawn in order to protect the rollers and their bearings from strain. The staves or sections are also provided with interior locking-lugs *p* at the drawing end of the core-bar to engage inclined lugs *t* of the revolving lock-head *s*, which is pivoted on the draw-bar spindle near its end. A washer-sleeve *v* is provided on the draw-bar spindle between the lock-head and the upper cross-head.

Each bridge tongue or strip *c* is provided with short horizontal slots *z* in its lateral portions, said slots being engaged by horizontal pins *2*, which pass through the channels or seats *b* and are secured to the walls thereof. By this means the tongues are held in proper relative position to the sections, while the latter are allowed sufficient sliding motion on said tongues for the core-bar to be fully expanded or fully contracted.

The exterior surface of the core-bar is prepared in the ordinary manner to receive the loaming or covering.

In expanding the core-bar the draw-head spindle is depressed or pushed inward, thereby pushing the staves or sections outward by means of the engagement of its anti-friction-rollers with the inclined slots of said sections. At the same time the lock-head is made to enter the mouth of the core-bar, its wedge-lugs passing between the locking-lugs of said sections. When the core-bar is fully expanded, it is secured in this form by turning the lock-head on the spindle in such a manner that its wedge-lugs engage the locking-lugs of the sections. The lock is held by means of a key *4*, engaging the wedge-lugs and locking-lugs.

In the core-bar illustrated in the drawings the cross-head arms have a parallel or branched construction in order that the anti-friction-rollers can be located between parallel walls, which also serve to embrace the slotted lugs of the sections. In this manner a very strong construction is provided for, as the staves and cross-head arms are securely and yet movably connected.

When in expanded form, the core-bar is ready for loaming. After a pipe is cast the key is withdrawn and lock-head turned to release the parts. Then by simply making tension on the draw-bar spindle by means of a drag-hook through the perforation or eye *5* or otherwise the sections will automatically

draw away from the covering or loaming, being actuated by the inclined slots of their lugs to take the contracted position.

The inclined slots of the lugs of the sections are provided with straight extensions 6 at their end, said extensions or offsets being parallel to the axes of the core-bar. The object of this construction is especially to provide for setting the staves or sections in expanded position to prevent the liability of their being forced together by the shrinkage of the casting. It is designed also to avoid the liability of the core-bar sections being forced apart by the centrifugal action of the core-machine when the core-bar is revolving. It also forms a brace to the core-bar which aids in relieving the revolving lock of much of the shrinking strain which would otherwise come upon it in casting pipe.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a core-bar, the combination with the expansible and contractible sections, of the intermediate longitudinal movable slotted

bridge-strips engaging said sections, and the slot-engaging pins of said sections, substantially as specified.

2. In a core-bar, the combination with expansible and contractible sections and automatically-adjustable intermediate longitudinal bridge-strips engaging said sections, of a lock-head and a reciprocating draw-bar spindle, substantially as specified.

3. In a core-bar, the combination with expansible and contractible sections, slot-engaging pins thereof and intermediate longitudinal slotted bridge-strips engaging said sections, of a reciprocating draw-bar spindle, expanding and contracting devices in connection therewith, a lock-head and means for securing said head in locked position, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. ADAM.

Witnesses:

J. E. KINSELLA,

ANTHONY STUNTEBECK.