No. 668,474. Patented Feb. 19, 1901.

G. H. ADAM.

CORE BAR.

(Application filed July 12, 1900.)

(No Model.)

FIG. 3.

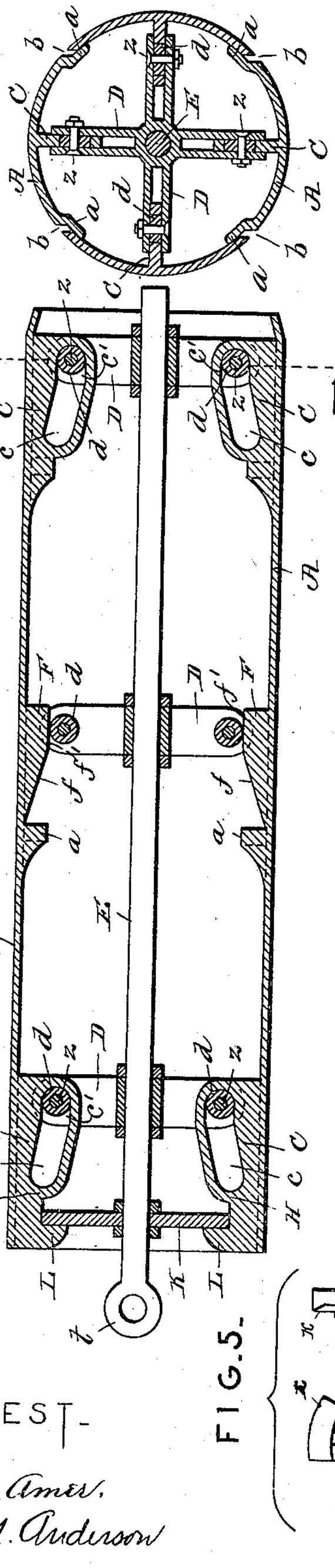


FIG. 4.

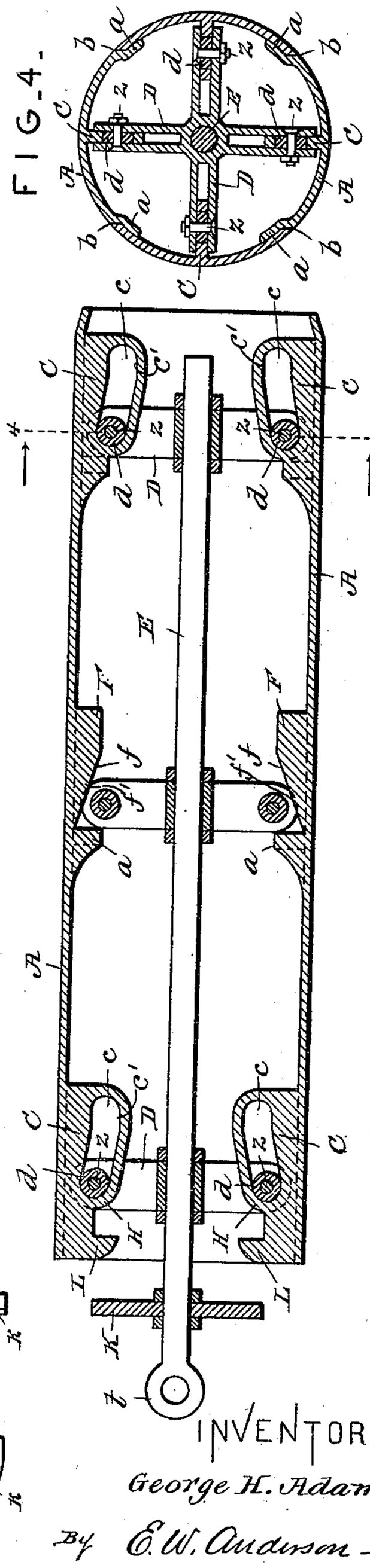
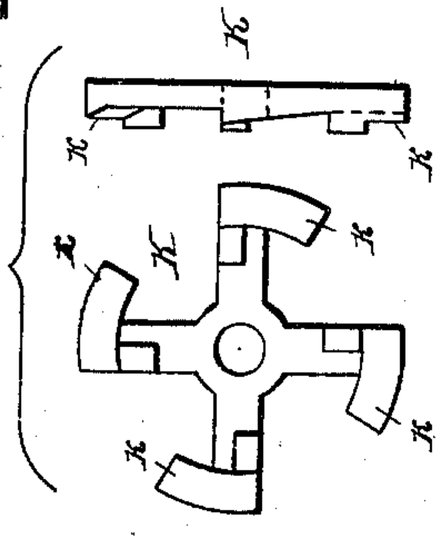


FIG. 1.

FIG. 2.

FIG. 5.



ATTEST-

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UNITED STATES PATENT OFFICE.

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CORE-BAR.

SPECIFICATION forming part of Letters Patent No. 668,474, dated February 19, 1901.

Application filed July 12, 1900. Serial No. 23,353. (No model.)

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 of reference marked thereon, which form a part of this specification.

Figure 1 is a central longitudinal section of the invention with parts expanded. Fig. 2 is a similar view with parts 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. Fig. 5 illustrates the lock K in detail.

The invention relates to core-bars; and it consists in the novel construction and combinations of devices, as hereinafter set forth.

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

In the accompanying drawings the letter A designates the longitudinal sections or staves of the core-bar, which are respectively provided with interior lapping flanges *a* to close the longitudinal intervals at *b* when the core-bar is expanded. These lapping flanges are formed by marginal depressions of alternate sections A, engaged by the marginal portions of the remaining sections to form an uninterrupted peripheral surface of the core-bar when contracted and when expanded to form a peripheral surface interrupted by narrow closed depressions or longitudinal intervals *b*. These staves or sections are provided with interior lugs C at each end, having inclined slots or guideways *c* to receive the roller *d* of the radial arms D, which are carried by collars E′, secured to the operating-rod or draw-bar spindle E. These lugs extend lengthwise of the core-bar, and the slots or guideways are inclined inward and toward the seat end *g* of the core-bar. The rollers *d* are pivoted to the cross-heads by means of short bolts *z*.

Between the end lugs C may be provided intermediate lugs F, having inclined ways *f* for the rollers of intermediate arms D. On the staves or sections are also provided interior stop-lugs H H, and interior locking-lugs L L are formed at the drawing end of the core-bar to engage the wedge-arms *k k* of the revolving lock K, which is pivoted on the draw-bar spindle near its end.

The stop-lugs H H engage the arms D when the core-bar is being withdrawn, and thus serve to protect the rollers and their bearings from strain.

The exterior surfaces of the staves or sections are perforated and roughened in the ordinary manner to receive the loaming or covering.

In expanding the core-bar the draw-bar spindle is depressed or pushed inward and the inclined slots and planes of the staves or sections are pushed outward by the rollers of the arms of said spindle. At the same time the lock K enters the mouth of the core-bar, its wedge-arms passing between the locking-lugs L L. When the core-bar is fully expanded, it is secured in this form by turning the lock K on the spindle in such manner that its wedge-arms *k k* engage the locking-lugs.

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

When in expanded form, the core-bar is ready for loaming.

After use in casting the lock K is turned to release the parts, and then by simply making tension on the draw-bar spindle by means of a drag-hook through its ring *t* or otherwise the staves will automatically draw away from the loam, being actuated by the inclined slots of their lugs to take the contracted position.

The slots and bearing-lugs of the staves or sections are provided with inner short extensions *c′ f′* at their ends, which are parallel to the axis of the core-bar, in order that when the staves are in expanded position they will be set in such position, and thereby the liability of the core-bar sections being forced

together by the shrinking of the casting is avoided. This construction 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 the casting.

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

1. A core-bar consisting of longitudinal sections, all of said sections having interior lugs provided with cam-slots of the same shape, all of said slots having a short inner extension parallel to the axis of the core-bar, a central operating-rod, having forked radial arms embracing said lugs and carrying rollers working in said slots, whereby the core-bar sections have each an equal movement in expansion and contraction of the core-bar, and are set when expanded, together with independent means for locking said sections expanded, substantially as specified.

2. A core-bar, consisting of longitudinal sections having interior lugs provided with cam-slots, said slots having inner extensions parallel to the axis of the core-bar, a central operating-rod having radial arms, rollers carried by said arms, and working in said slots, locking-lugs forming a part of said sections, and a revoluble locking-disk engaging said lugs to keep the core-bar expanded, substantially as specified.

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

GEORGE H. ADAM.

Witnesses:

ARTHUR B. MATSON,

RALPH W. MATSON.