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D. GALLAGHER.

Core-Bars for Castings.

No. 143,005. Patented September 23, 1873.

Fig. 1

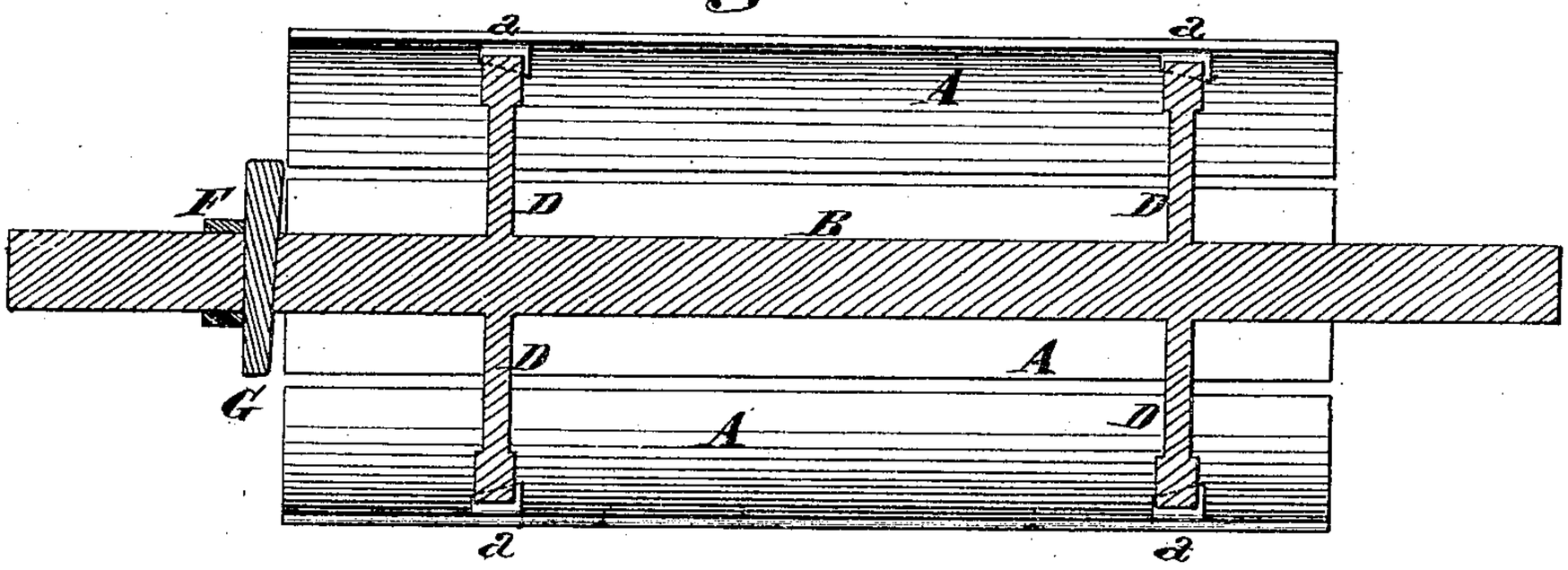

Fig. 2

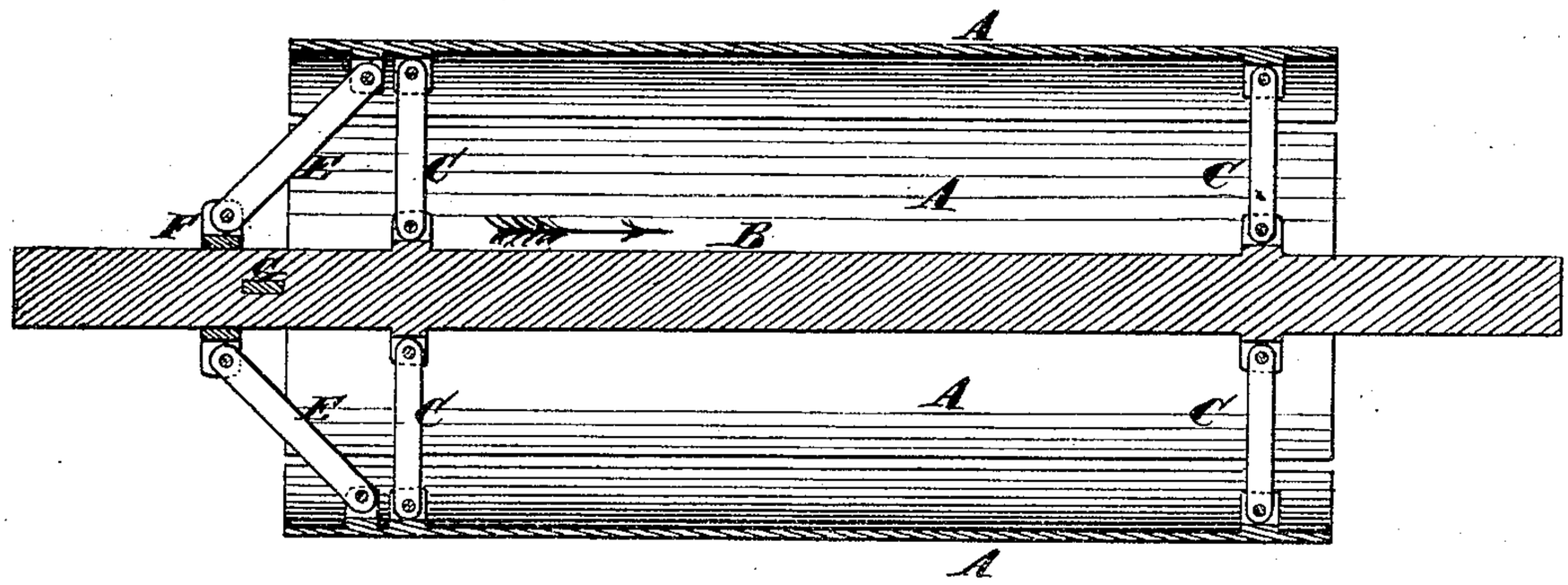

Fig. 3

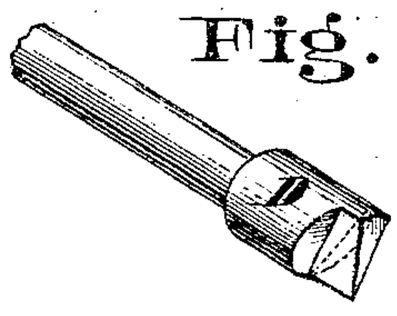

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Fig. 4

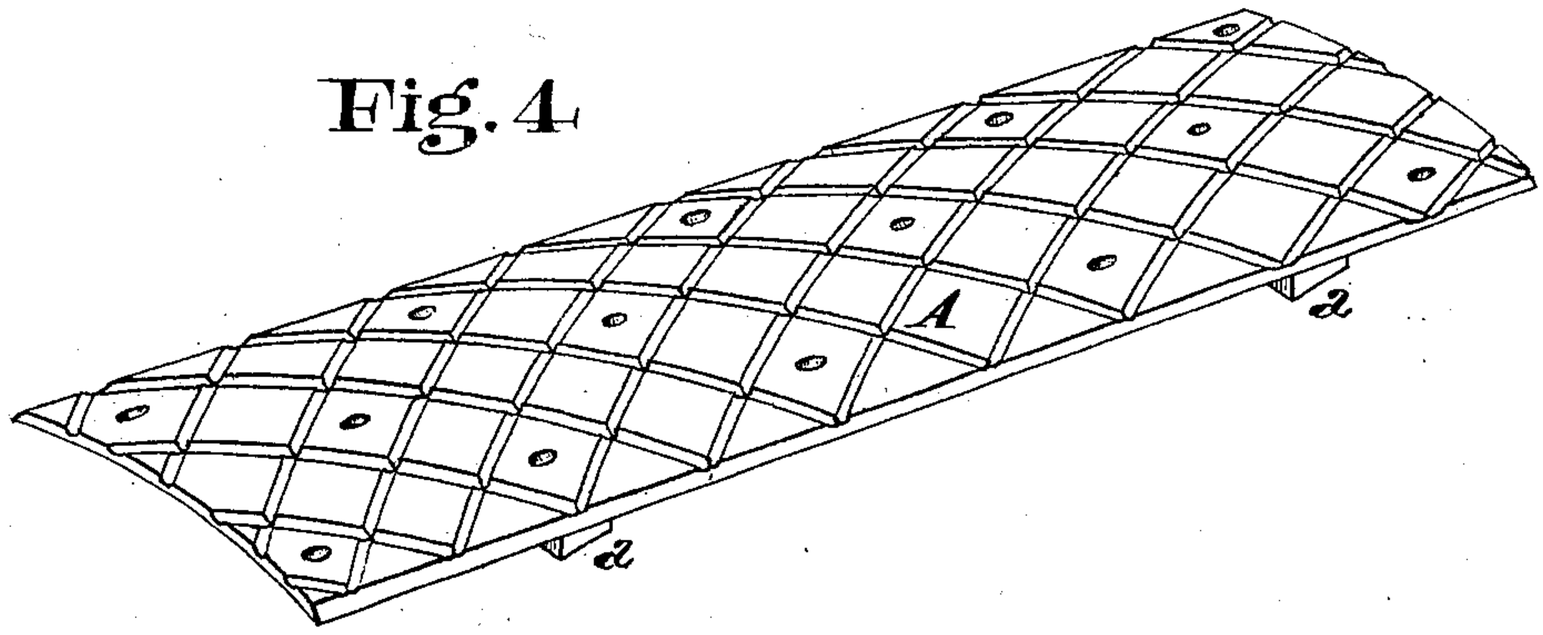

Fig. 5

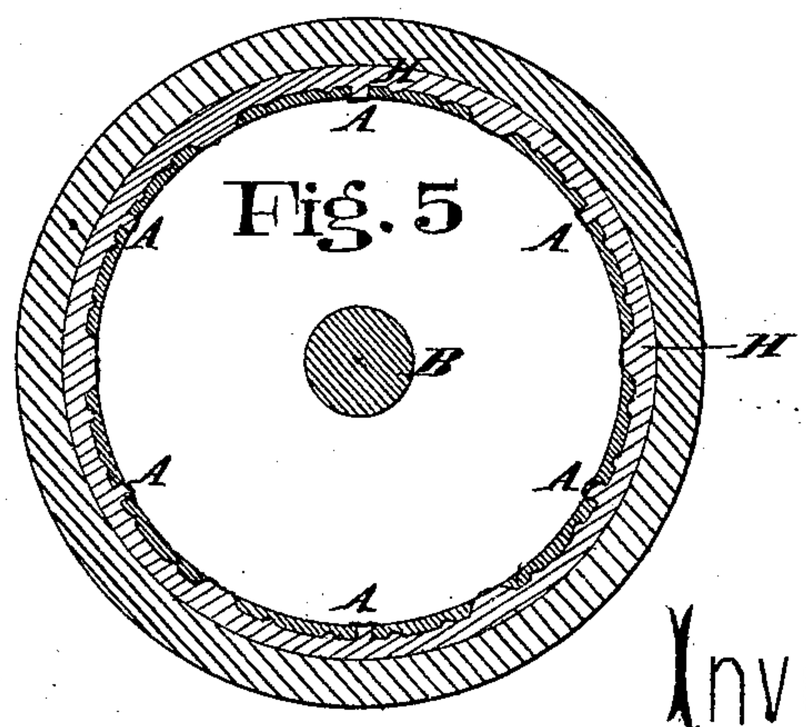

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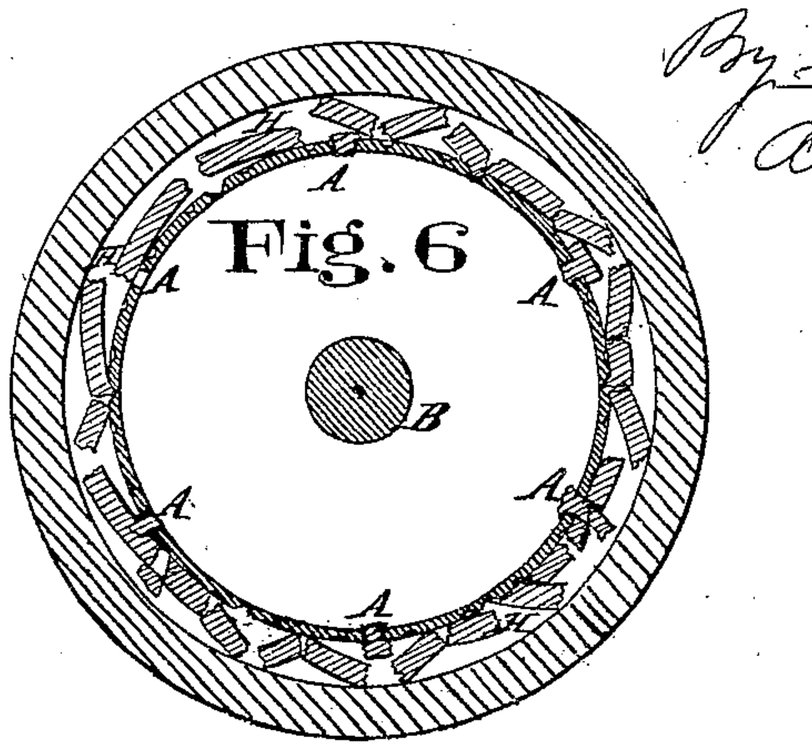
Fig. 6



UNITED STATES PATENT OFFICE.

DANIEL GALLAGHER, OF CINCINNATI, OHIO.

IMPROVEMENT IN CORE-BARS FOR CASTINGS.

Specification forming part of Letters Patent No. **143,005**, dated September 23, 1873; application filed June 21, 1873.

To all whom it may concern:

Be it known that I, DANIEL GALLAGHER, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Core-Bars for Molders' Flasks, of which the following is a specification:

My invention relates to the class of devices termed molders' core-bars, upon which loam is molded to form the core upon which pipes or other hollow castings are made; and my invention consists of certain combinations of devices, by which the periphery of the bar is expanded to receive the loam to form the core, and contracted after the casting is made to enable the withdrawal of the core-bar conveniently, and the breaking off of the crust of loam. My invention further consists of devices for rigidly sustaining the outer sections of the bar when expanded.

Figure 1 is an axial section of my improved core-bar when expanded. Fig. 2 is a similar axial section in a different plane, this figure being taken principally through the devices for contracting the bar, whereas Fig. 1 is taken through the devices for sustaining the sections of the bar when expanded. Fig. 3 is a perspective view of a part of one of the devices for sustaining the sections of the bar when expanded. Fig. 4 is an exterior perspective view of one of the outer sections of the bar. Fig. 5 is a cross-section through a cast pipe, with the bar in place expanded. Fig. 6 is a similar view of a cast pipe, with the bar in place contracted for removal, showing also the loam broken off from the outside of the bar.

The outer periphery of the bar is composed of several sections, A, whose faces may be cut or roughened in the manner shown in Fig. 4. These sections are connected to a central shaft, B, by radial toggle-arms C, in the manner shown clearly in Fig. 2, two arms being used to attach each section to its shaft. These toggle-arms are provided, principally, to contract the sections of the bar, as other devices are provided to assist in the expansion and support of the sections when expanded, as follows: Each section has near its edges inclined lugs *a*, upon which stiff arms D, projecting from the shaft B, are arranged to connect. The ends of the arms are cut inclined, as shown in Fig. 3, to match the inclined lugs *a*, so that when the shaft B is moved to expand the sections the projecting arms D may act in connection with the said lugs to expand the bar, and when expanded to support the same. In order to add to this support where the same may be necessary, I attach toggle-arms E to the sections at one end, and to a loose ring, F, at the inner ends; and through the shaft B I insert a key, G, so that when shaft B is moved in the direction of the arrow, and the sections thereby fully expanded, the key G may be inserted through a suitable aperture in the shaft, which will serve to fully support the expanded sections. H, Figs. 5 and 6, indicates the loam on the outer sections of the core-bar.

I claim—

1. The sections A and shaft B, connected together by toggle-arms C, in combination with the rigid arms D, whose inclined outer ends act upon inclined lugs *a* of the sections A, substantially as and for the purpose specified.

2. The core-bar, composed of the sections A *a*, shaft B, toggle-arms C, and rigid arms D, in combination with the toggle-arms E, loose ring F, and key G, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

DANIEL GALLAGHER.

Witnesses:

FRANK MILLWARD,

J. L. WARTMANN.