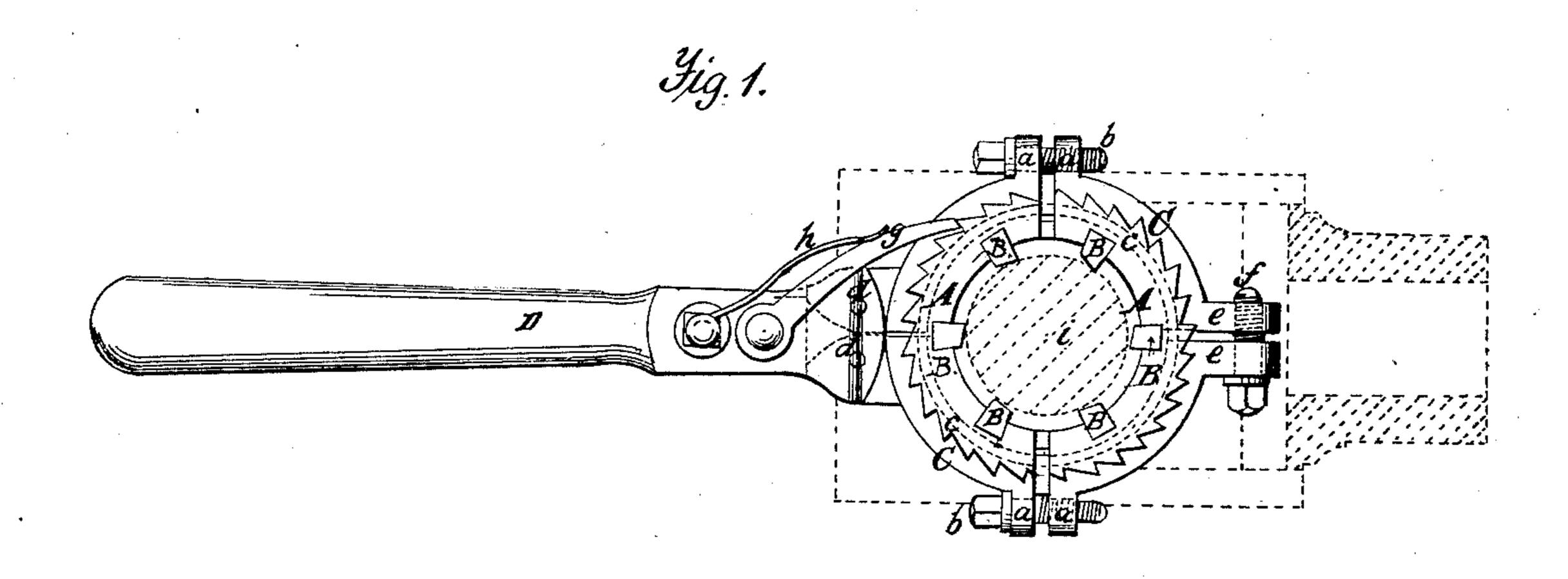
J. HALL.

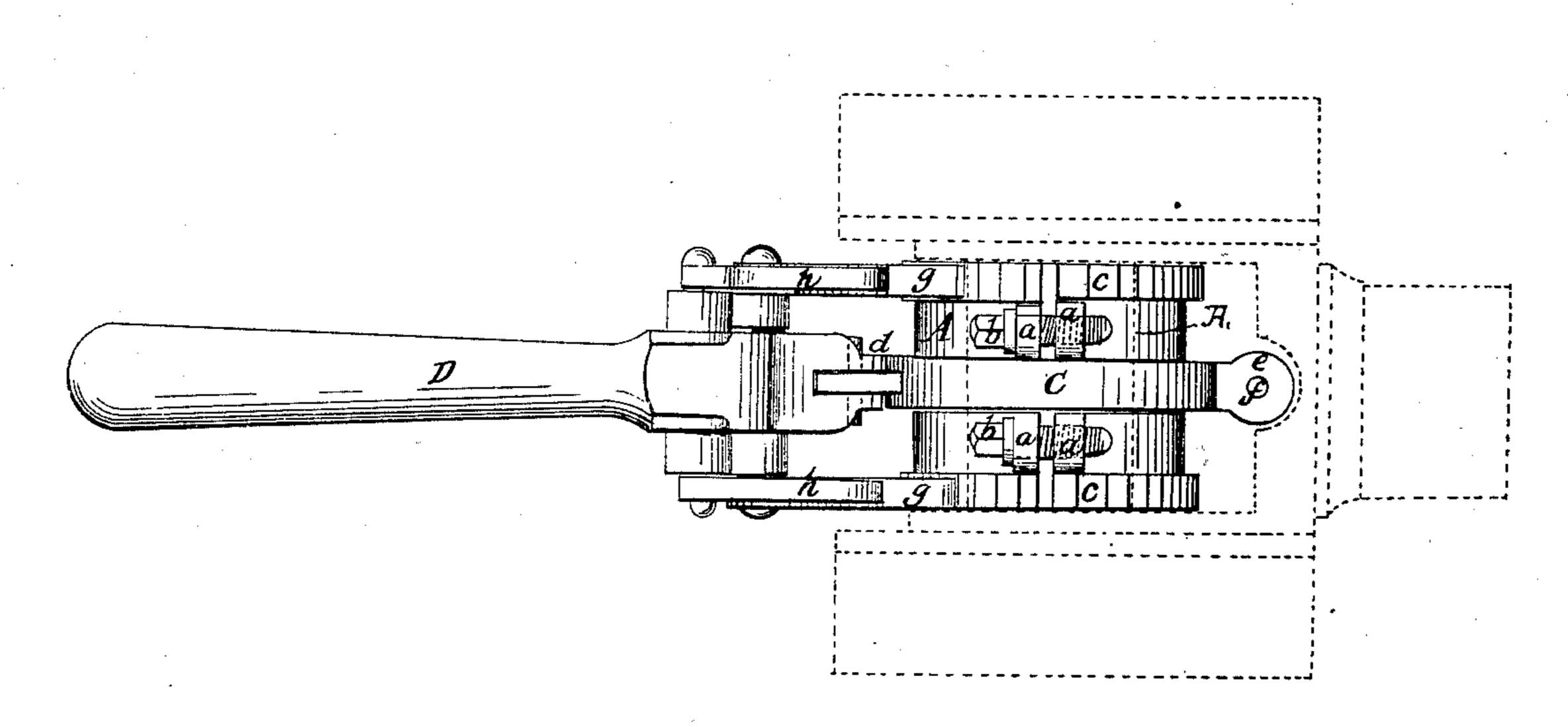
TOOL FOR TURNING JOURNALS OF LOCOMOTIVE CROSSHEADS, &c.

No. 18,970.

Patented Dec. 29, 1857.



Hig. 2.



UNITED STATES PATENT OFFICE.

JAMES HALL, OF NEW HAVEN, CONNECTICUT.

TOOL FOR TURNING JOURNALS.

Specification of Letters Patent No. 18,970, dated December 29, 1857.

Haven and State of Connecticut, have in-5 vented a new and useful Tool for Turning the Journals of Locomotive Cross-Heads and other Articles of Similar Character that cannot be Turned in a Lathe; and I do hereby declare that the following is a full, 10 clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a side view of the tool, show-15 ing it in operation on a locomotive crosshead. Fig. 2 is a top view of the same.

Similar letters of reference indicate cor-

responding parts in both figures.

A, A, is a hollow cylindrical cutter box, 20 of a length equal or nearly so to the journal to be turned, and of an internal diameter somewhat larger than the rough journal, divided longitudinally into two equal parts, each of which is provided with lugs a, a, at 25 each side, to receive screws b, b, which attach them together. The cutter box thus constructed is provided at each end with a circle of ratchet teeth c, surrounding its exterior.

B, B, are the cutters, of which there may 30 be any number, of a length equal to the journal to be turned, fitted to dovetail-shaped grooves made longitudinally in the interior

of the cutter box. C, C, is a metal ring, divided diametri-35 cally into two equal parts and fitted to a groove turned around the exterior of the cutter box A A; each of the said parts being hinged by a separate pin d, to a handle D; and opposite to their hinges, they are pro-40 vided with lugs e, e, to receive a screw f, by which they are kept closed upon the cutter DOX.

g, g, are two pawls, pivoted to the handle D, to engage with the circles of ratchet teeth 45 on the cutter box to turn the said cutter box by working the handle backward and forward.

h, h, are two springs, to keep the pawls in gear. The cross head is shown in red out-50 line in both figures; Fig. 1, representing it in section, and Fig. 2, representing it entire. Fig. 1, is the cross-head journal.

The cross-head or other article to be

Be it known that I, James Hall, of the city of New Haven, in the county of New large a locomotive cross-head already in use, it may be allowed to remain in its place in the engine. To apply the tool to it, the screw f. must be taken out and the ring C, C, opened on its hinges to allow the cutter box to be 60 taken out. The cutter box is then opened by taking out the screws b, b, and the two parts of it are applied on opposite sides of the journal, and secured together again by the screws b, b. The cutter box now encircling 65 the journal, has the ring C, C, applied to it and secured by its screw f, in such a manner as to allow it to turn freely on the cutter box. By working the handle D, back and forth, the pawls g, g, are caused to give the 70 cutter-box and cutters a rotary motion around the journal, and the cutters are thus caused to turn the journal to a circular form. The screws b, b, generally require to be tightened from time to time during the turn- 75 ing operation, to reduce the journal to a proper size, or to turn it down to the perfect circular form.

The journals of locomotive cross-heads and many other journals similarly arranged 80 have been heretofore commonly chipped and filed to the circular form, which is a very tedious and slow process, and occupies from four to five times the time shown by actual experiment to be required to do the same job 85 by my invention.

I do not claim to be the first inventor of a revolving cutter stock for turning journals; as I am aware that such a contrivance has been used for turning crank journals 90 and other articles, but—

What I claim as my invention, and desire

to secure by Letters Patent, is:—

The combination, substantially as described, of the divided hollow cylindrical 95 cutter-box A, A, furnished with ratchet teeth on its exterior, and tightening screws b, b, and the divided ring C, C, handle D, pawls g, g, and fastening screw f, the whole operating as herein set forth.

> JAMES \times HALL. mark

Witnesses: CHAS. C. WILDMAN, R. W. Bucher.