(No Model.) 2 Sheets—Sheet 1.

W. F. PARISH.

MACHINE FOR FINISHING ENGINE BED FRAMES.

No. 332,745. Patented Dec. 22, 1885.

Fig. 1.

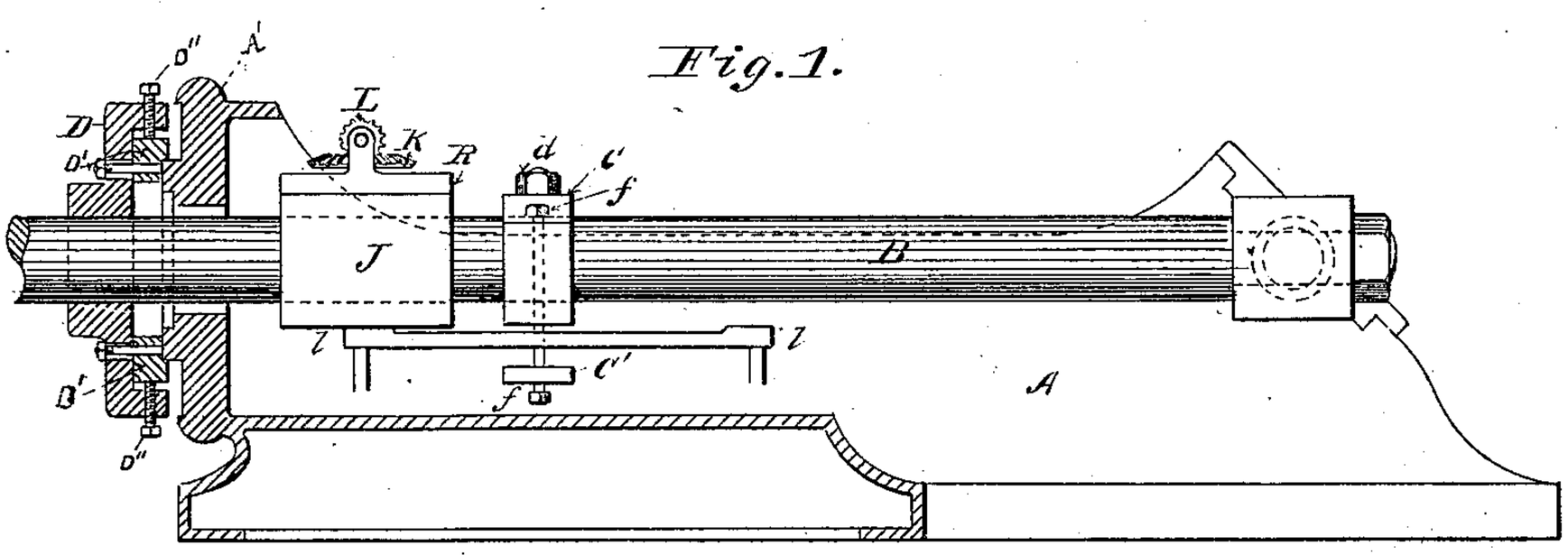


Fig. 2.

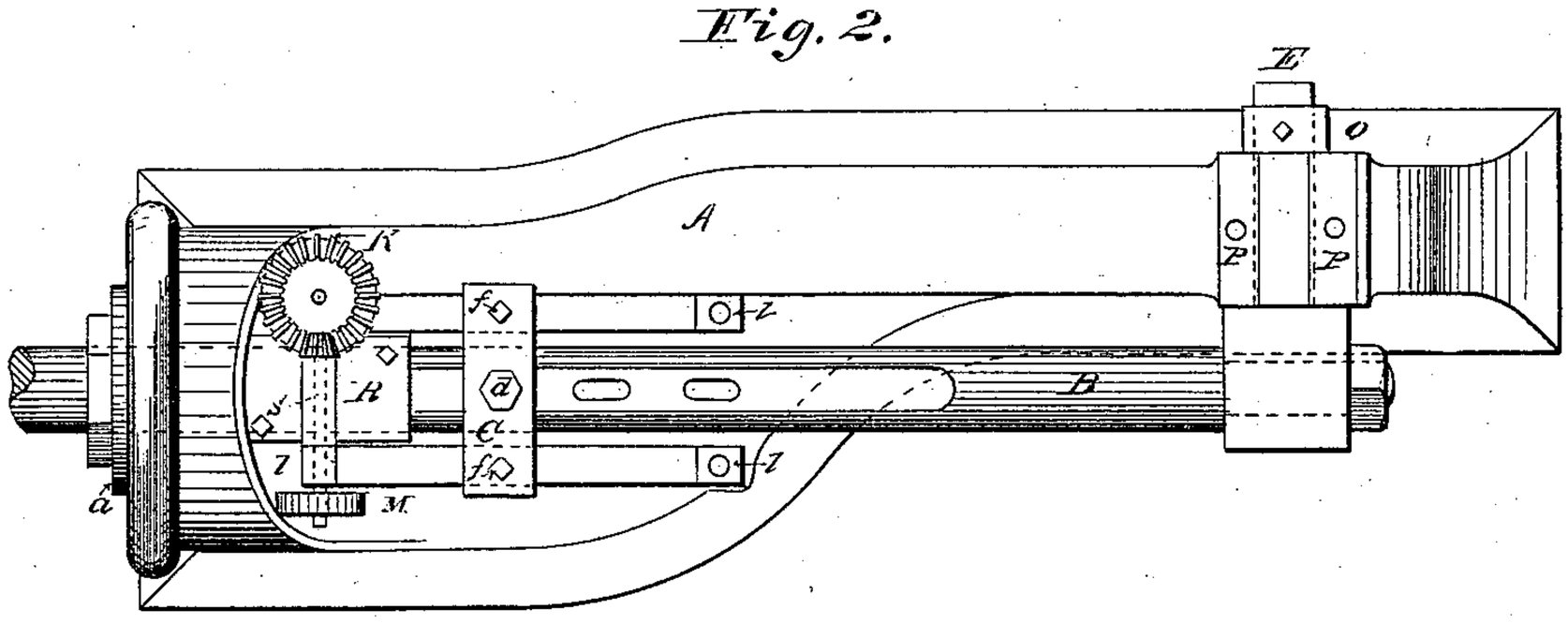


Fig. 3.

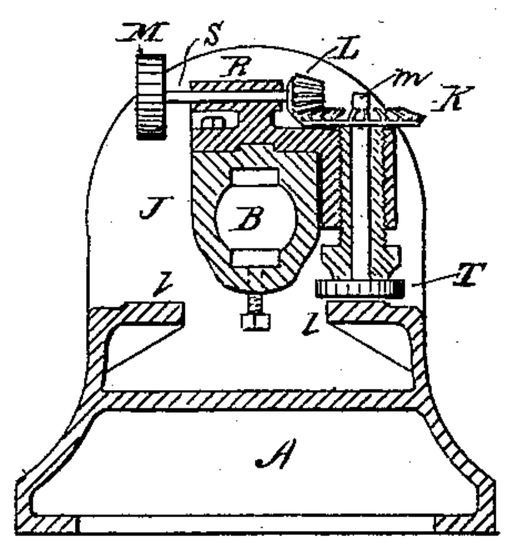
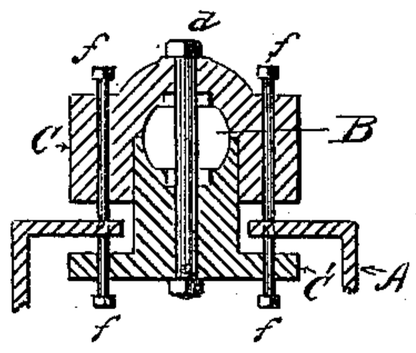


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

W. F. PARISH.

MACHINE FOR FINISHING ENGINE BED FRAMES.

No. 332,745. Patented Dec. 22, 1885.

Fig. 5.

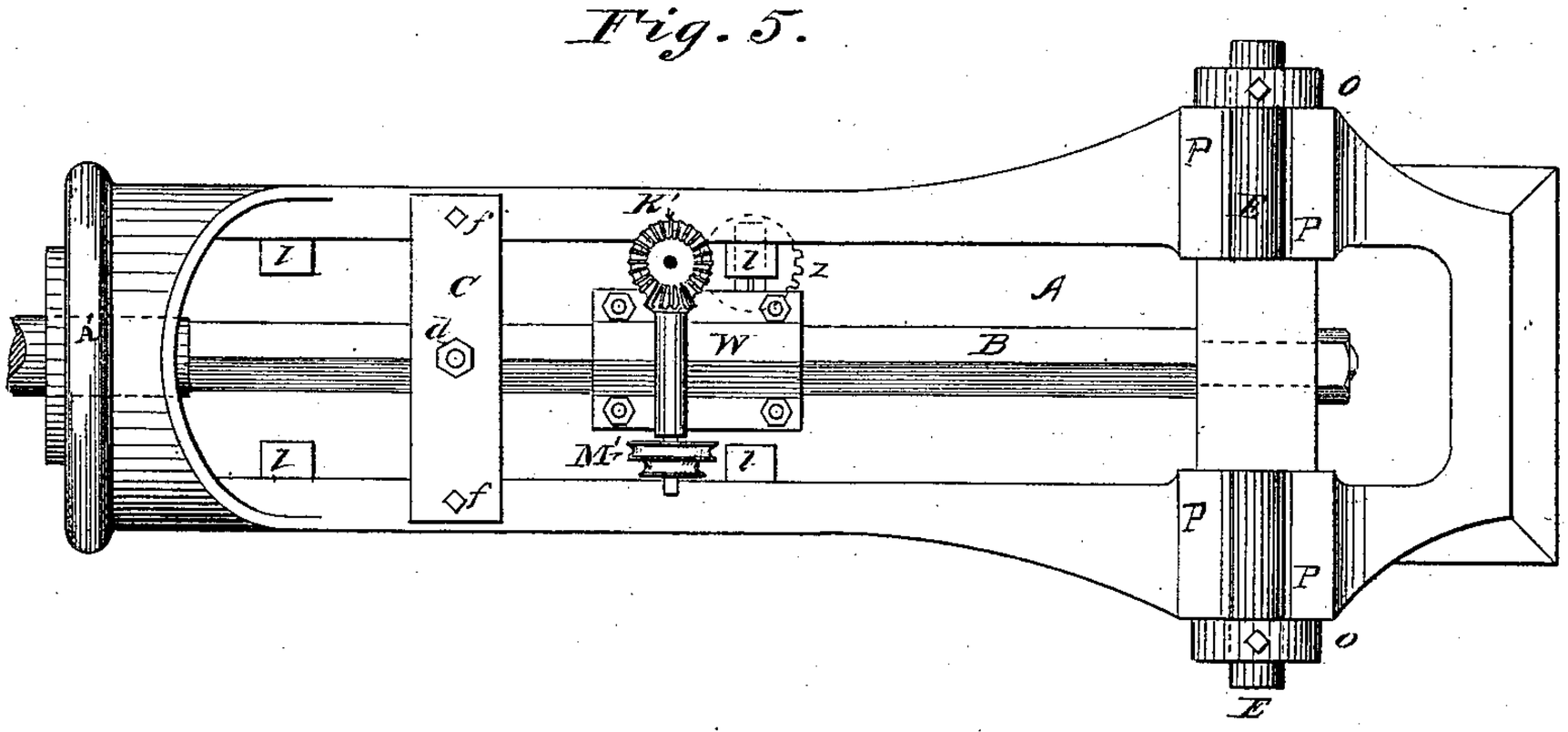


Fig. 6.

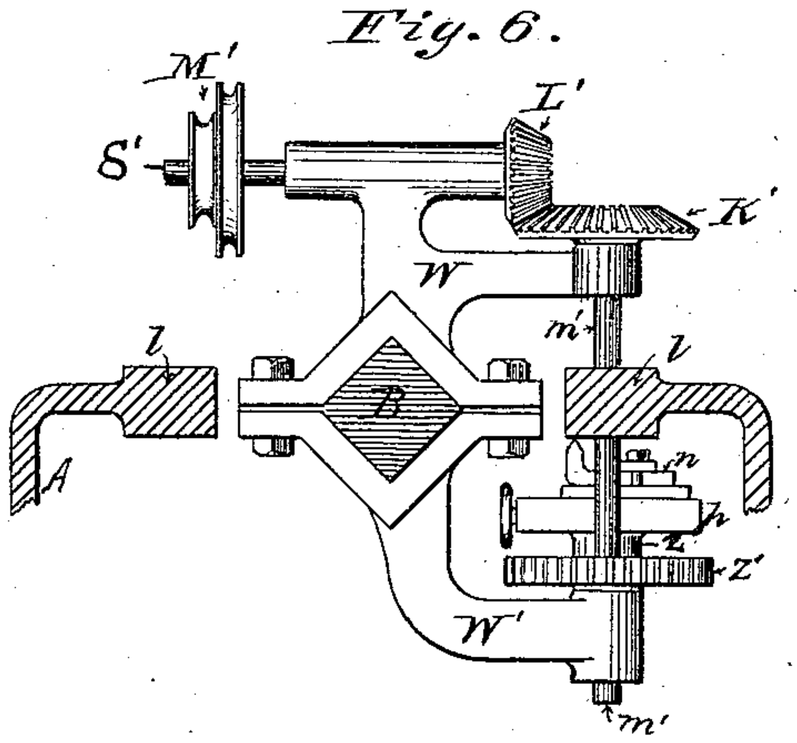
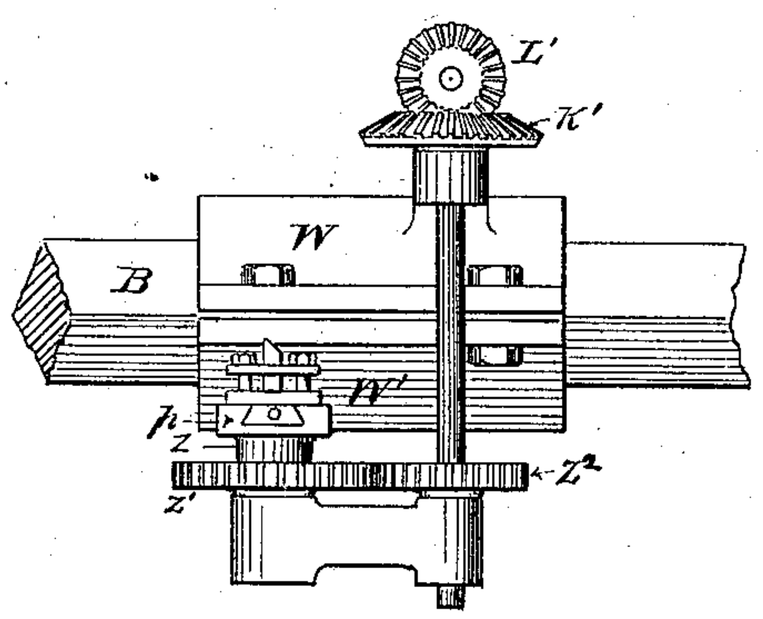


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM F. PARISH, OF MINNEAPOLIS, MINNESOTA.

MACHINE FOR FINISHING ENGINE BED-FRAMES.

SPECIFICATION forming part of Letters Patent No. 332,745, dated December 22, 1885.

Application filed November 10, 1885. Serial No. 182,325. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. PARISH, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Mechanism for Finishing Engine Bed-Frames, of which the following is a specification.

My invention relates to improvements in means for preparing and fitting cast-metal bed-frames of engines, to receive the several parts of the engine that are secured to or supported by them. These bed-frames are usually cast in one piece, and they have preferably a circular end, to which the end of the cylinder is secured, and through which the piston-rod extends. They have also a box or boxes for the crank-shaft, and supports or lugs to which the guides for the cross-heads are secured.

The object of the present invention is to provide means for truing and aligning these supports or lugs upon which the cross-head guides are supported.

In the accompanying drawings, forming part of this specification, Figure 1 is a section of a bed-frame, showing in elevation the means for fitting the bed. Fig. 2 is a plan of the same. Fig. 3 is a section of the jig. Fig. 4 is a section of the centering-plates. Fig. 5 is a plan with bed-frame of another construction. Figs. 6 and 7 are detail views showing the truing-tools.

Figs. 1, 2, and 5 show a cast-iron bed-frame. These frames are usually cast in one piece, and have the end A′, to which the end of the cylinder is bolted; also the box or boxes P for the crank-shaft, and the supports or lugs *l l*, to which the guides for the cross-head are secured.

B E represent an arbor, having the cross-part E at right angles to the main part B. This arbor is centered in the bed-frame, and upon it are mounted the tools for truing the supports *l l*.

The bed-frame shown in Figs. 1 and 2 is for a side-crank engine, and has but one box P. The arbor used with this bed-frame is of L shape, having the cross part E projecting from one side only.

D, Fig. 1, is a centerer, having a hole through it adapted to fit the arbor B, and having blocks D′ mounted in radial slots and provided with adjusting-screws D″. The centerer is placed on the arbor and brought near to or against the end of the bed-frame. The arbor is then centered by bringing the blocks against a ring on the end of the bed-frame.

C C are plates or blocks by which the arbor is centered between the supports *l l*, and held in proper alignment while the supports are trued and aligned by it. These plates are secured to the arbor, preferably by the following means: The plates are provided with recesses fitting the arbor, and a bolt or bolts, *d*, passes through the plates and the arbor, thus holding them firmly together. The ends of the plates project over the edge of the frame, or over a ledge between the supports *l l*, and are provided with adjusting-screws *f f*, arranged to bear on the upper and lower surfaces of such ledge or upon the upper edge of the wall of the bed. The lower plate, C, may, however, be omitted, if desired. These plates, with their adjusting-screws, center the arbor B between the supports *l l* and bring the cross-arbor E into position. The arbor E may be omitted at pleasure, and no claim is made herein to this means for fitting the boxes for the crank-shaft. When the cross-arbor is used, the boxes P are finished by pouring Babbitt or other suitable metal around the arbor. The arbor B may be provided with a groove or grooves and the plates or plate C with a corresponding groove. A key may be inserted in these grooves, thereby holding the arbor and plates in proper alignment.

In some instances I prefer to make the part of the arbor B that is within the bed-frame triangular or polygonal in cross-section, as shown in Figs. 5 and 6, and to provide the centering-plate with a corresponding recess to fit thereon. In this instance the grooves and key are unnecessary.

J, Figs. 1 and 3, represents what I term a "jig," carrying a tool for dressing the supports *l l*. This jig consists of a supporting block or plate mounted on the arbor and secured thereto, preferably by grooves and splines and a set-screw, as shown in Fig. 3, or by other suitable means.

The construction of jig shown in Figs. 1, 2, and 3 is as follows: R is a plate mounted

on the supporting block or plate and secured thereto by a set-screw. In this plate is mounted a shaft, S, carrying a driving-pulley, M, and a bevel-pinion, L, which meshes with a pinion, K, on a shaft, *m*. The shaft *m* carries a facing-tool, T, which is adapted to finish the surface of the supports *l l*. The plate R may be mounted to bring the tool on either side of the arbor, so that both of the supports may be faced. It is only necessary to true the upper surface of the bed shown in Figs. 1 and 2, but for the bed shown in Figs. 5 and 6 it is also desirable to true the under surface of the supports. For this purpose I use, preferably, the jig shown in Figs. 6 and 7. In this construction two brackets, W W′, are clamped to the arbor B. The lower bracket, W′, carries a truing-tool, *n*, mounted in a slide-rest, *p*, that is carried by a revolving stud, Z, having a gear, Z′, into which meshes a pinion, Z^2, upon a shaft, *m′*. The shaft *m′* is operated through pulley M′, shaft S′, and bevel-gears L′ K′. By this tool *n* the under surface of the supports may be trued and brought into alignment for the reception of the cross-head guides. The tool-frame is in every instance mounted on the arbor, and all the supports are thereby brought into the same relation to the axis of the arbor, and therefore into the same relation to the axis of the piston-rod when the engine is complete.

I have shown revolving-tools for finishing the supports; but in some instances a reciprocating tool carried by the jig may be used. I do not confine myself, therefore, to the exact construction of truing-tool or operating means described, it being only necessary that the tool be mounted on the arbor so that the supports will be brought into proper relation to its axis, and the construction of devices for centering the arbor in the bed-frame may also be varied without departing from my invention.

I claim as my invention—

1. The combination, with an arbor and means for centering said arbor in an engine bed-frame, of a tool-frame mounted on said arbor, a truing-tool carried by said frame for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described, and for the purpose set forth.

2. The combination, with an arbor and means for centering said arbor in an engine bed-frame, of a tool-frame mounted on said arbor and carrying a revolving truing-tool for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described.

3. The combination, with the main arbor B and cross-arbor E and means for centering said arbor in an engine bed-frame, of the tool-frame mounted on said arbor and carrying the truing-tool for truing the supports for the cross-head guides, and means for operating said tool, all substantially as described.

In testimony whereof I have hereunto set my hand this 6th day of November, A. D. 1885.

WILLIAM F. PARISH.

Witnesses:
GEO. MCNEIR,
A. C. PAUL.