

(No Model.)

E. J. ARMSTRONG.
CRANK DISK FOR STEAM ENGINES.

No. 561,071.

Patented May 26, 1896.

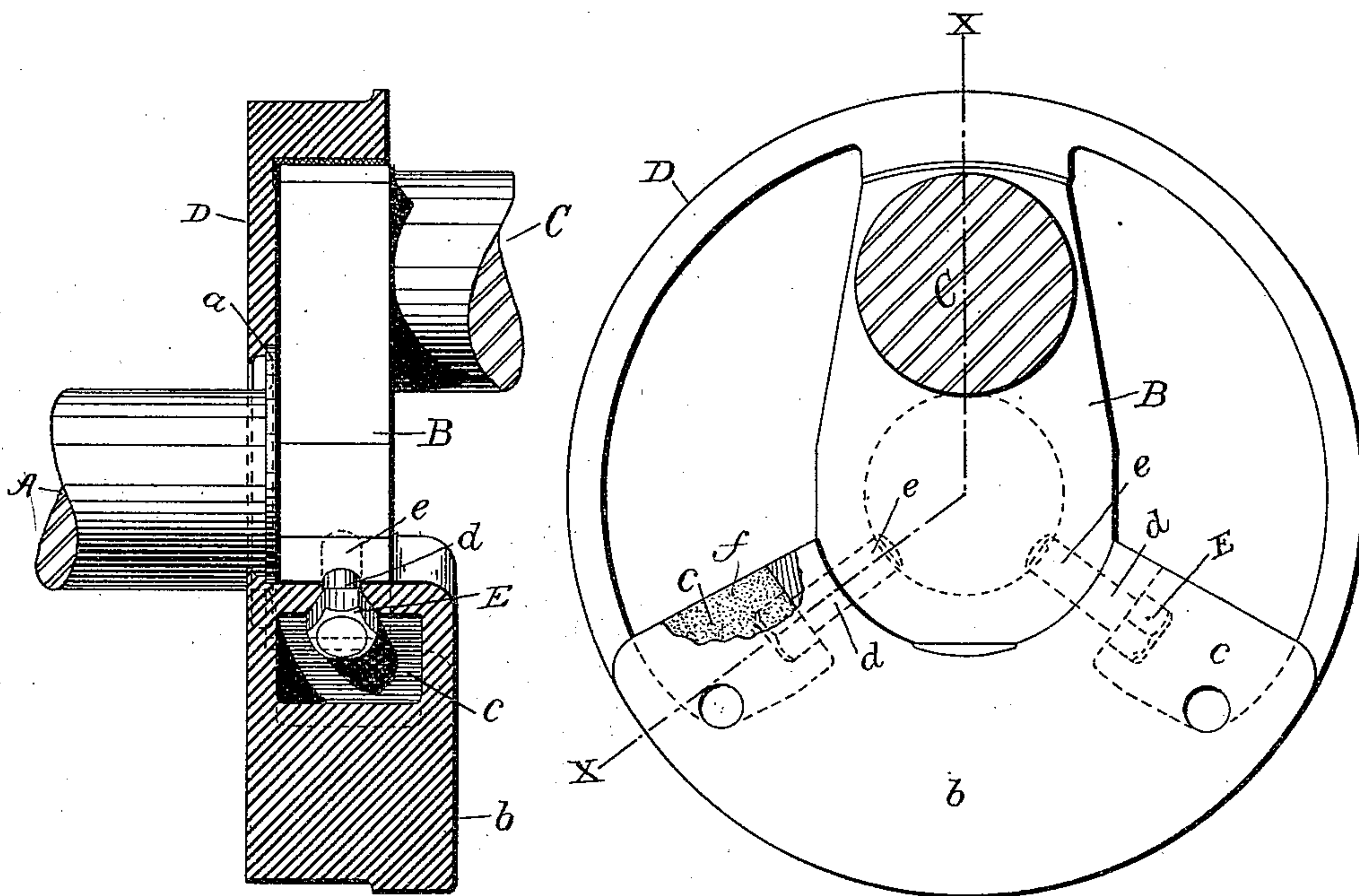


Fig. 2.

Fig. 1.

Witnesses.
T. A. Low
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UNITED STATES PATENT OFFICE.

EDWIN J. ARMSTRONG, OF OSWEGO, NEW YORK, ASSIGNOR TO AMES
IRON WORKS, OF SAME PLACE.

CRANK-DISK FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 561,071, dated May 26, 1896.

Application filed April 6, 1895. Serial No. 544,757. (No model.)

To all whom it may concern:

Be it known that I, EDWIN J. ARMSTRONG, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Crank-Disks for Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates generally to crank-disks for steam-engines, and particularly to devices for securing the disks to the crank-shaft forging; and it has for its object to provide a simple, durable, and inexpensive device for securing the crank forging and disks rigidly together and without liability of the same working loose during the operation of the engine; and it consists of the parts and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation showing the inner face of one of my improved disks mounted on its shaft; and Fig. 2, a sectional view taken on the line *xx*, Fig. 1.

Similar letters refer to similar parts in both the views.

A represents the shaft, B the crank-webs, and C the crank-pin, all cast or forged together in the usual or any desired manner. The shaft A is also provided with collars or hubs *a*, on which the disks D fit. The lower portions of the disks are enlarged or thickened, as at *b*, on their inner faces to form the counterbalancing-weights, and are bored out to fit the ends of the webs B of crank-pin. Great difficulty is found in securing the disks to the shaft in a permanent manner owing to the means usually employed for this purpose being inadequate to prevent working or jarring loose during the running of the engine. I provide a fastening of unusual rigidity by

forming a pocket *c* in the counterweight at each side in casting the same, said pockets opening upwardly and their outer walls or bottoms conforming to the circumference of the disk, and their upper walls extending in a straight line in a diagonal direction, as best shown in dotted lines in Fig. 1. A bolt hole or opening *d* is formed through the upper part of the counterweight at right angles to the pockets, into which it opens, the upper end of said openings corresponding to screw-threaded openings *e* formed in the web B.

E represents the screw-bolts for securing the disks to the webs.

The disks are first adjusted to the webs and the screw-bolts E inserted through the pockets *c* and openings *d* into the openings *e* in the webs, into which they are screwed as tightly as possible. After thus securing the disks to the webs the pockets *c* are filled with molten type-metal *f* or other suitable metal fusing at a low heat, as shown in Fig. 1, thereby effectually preventing the bolts working loose and also restoring the symmetry and weight of the counterbalance.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with a crank-shaft having screw-threaded openings in its web, of a disk having pockets formed in its counterweight and bolt-holes through the walls of said pockets, screw-bolts entering the threaded openings in the web through the bolt-holes in the walls of said pockets, and a filling of readily-fusible metal for said pockets, whereby the heads of said screw-bolts may be rigidly secured in place after tightening, substantially as described.

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

EDWIN J. ARMSTRONG.

Witnesses:

SCHUYLER J. HARRIS,
T. L. BRADFORD.