

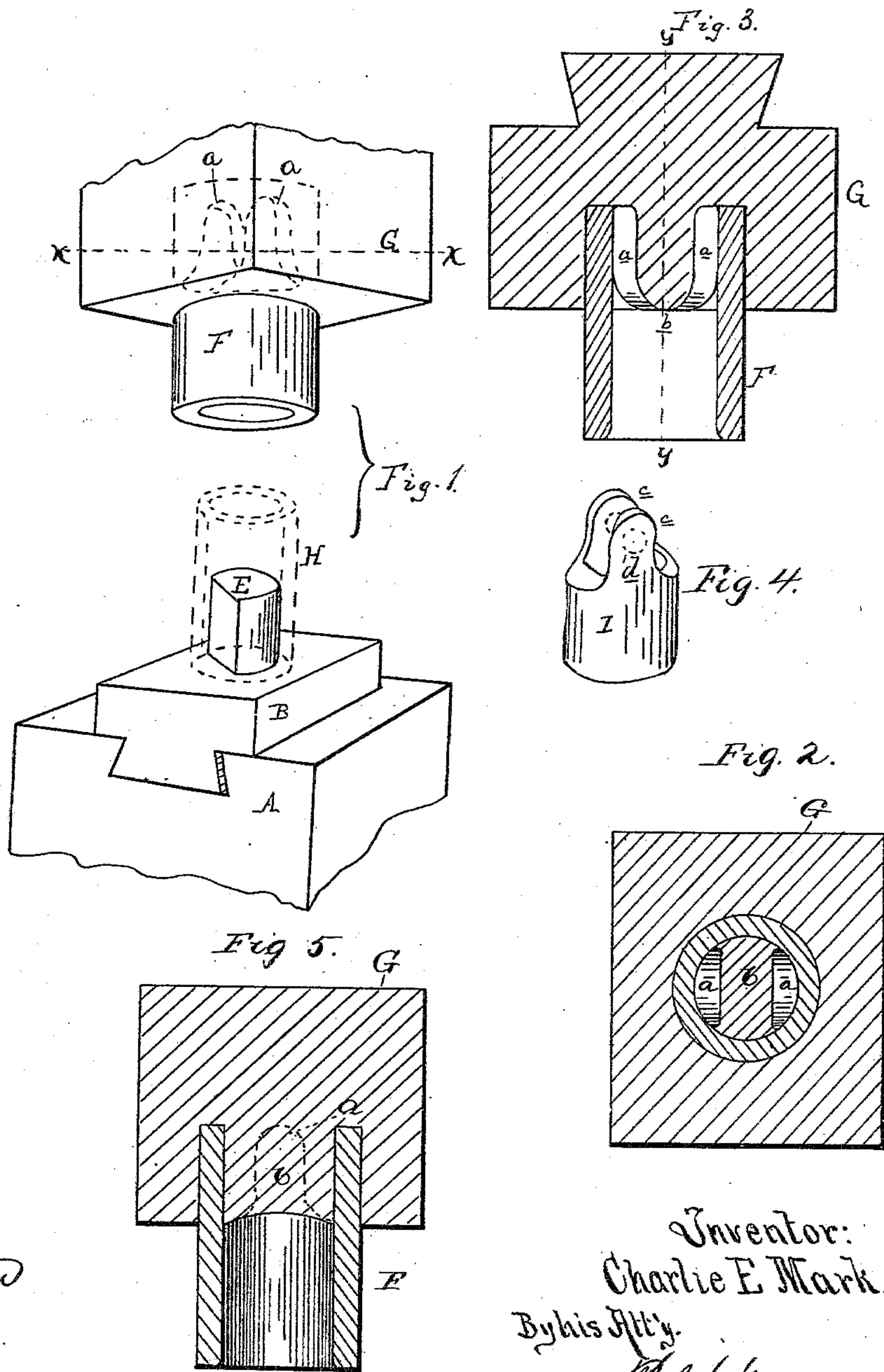
(No Model.)

C. E. MARK.

DIE FOR MANUFACTURING COUPLINGS.

No. 303,173.

Patented Aug. 5, 1884.



Attest:  
*M. Sprague*  
*E. Scully*

Inventor:  
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By his Atty.  
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# UNITED STATES PATENT OFFICE.

CHARLIE E. MARK, OF FLINT, MICHIGAN, ASSIGNOR OF ONE-SIXTH TO JOSIAH W. BEGOLE, DAVID S. FOX, AND GEORGE L. WALKER, OF SAME PLACE.

## DIE FOR MANUFACTURING COUPLINGS.

SPECIFICATION forming part of Letters Patent No. 303,173, dated August 5, 1884.

Application filed January 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLIE E. MARK, of Flint, in the county of Genesee and State of Michigan, have invented new and useful Improvements in Dies for Manufacturing Couplings; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in devices and processes for manufacturing cylindrically-shaped couplings for coupling together rods like tumbling-rods, or eccentric-rods, which are liable to be subjected to a torsional strain.

The invention consists, primarily, in the process by means of which such coupling is formed; and, secondarily, in the peculiar construction and operation of the dies necessary to a successful carrying out of such process, as more fully hereinafter described.

Figure 1 is a perspective of the upper and lower dies, as presented toward each other. Fig. 2 is a cross-section on the line X X in Fig. 1. Fig. 3 is a vertical central section of the upper die shown in Fig. 1. Fig. 4 is a view of the coupling as left by the dies. Fig. 5 is a vertical cross-section on line y y in Fig. 3.

In the accompanying drawings, which form a part of this specification, A represents the bed or anvil of a drop-hammer. Upon this is placed the die B, and preferably the lower face of this die is provided with a dovetail, as shown, to engage with a similarly-shaped recess in the bed A, to enable the die to be changed at will to facilitate the manufacture of different sizes of these couplings. Rising from the flat portion B of the die is a mandrel, E, which is made D-shaped, as shown in cross-section.

F is a cylinder inserted into and secured to the die-plate G, within which are formed the recesses *a*, leaving a solid tongue, *b*, between them. This die-plate G is provided with a dovetail or other suitable means by which it can be attached to the piston or face of a drop-hammer.

In practice, a piece of gas-pipe, H, (shown in dotted lines in Fig. 1,) cut to the proper length, is heated and set over the mandrel E, the height of such mandrel corresponding to the height of the body of the coupling I. The upper die, being in place, is now brought into action. The bore of the cylindrical portion F being larger than the diameter of the gas-pipe H, the drop of the die compels said cylindrical portion F to inclose the section of gas-pipe, and a proper pressure being brought to bear, the tongue *b* forces the iron away and downward from the sides of the ears *c* of the coupling. Such ears, in the further downward progress of the upper die, are formed in the recesses *a*, the iron thus forced down and out filling the space on the flattened surface of the mandrel, and thickening somewhat the body of the coupling I. This being done, and the position of the upper die reversed, the coupling is withdrawn from the mandrel, and completed by drilling or punching the necessary holes *d* in the ears.

It will readily be seen that a coupling thus constructed, when fitted upon a rod of proper size and shape, will not turn upon such rod, but will follow any strain, torsional or otherwise, to which such rod may be subjected.

What I claim as my invention is—

1. The combination, with a die provided with a mandrel to receive the blank, of a die having an opening the size of the blank when finished, and provided with recesses *a a* and tongue *b*, substantially as and for the purpose specified.

2. The die and mandrel B E, in combination with the die G, to which is attached the cylinder F, such die G being made with recesses *a* and tongue *b*, and operating substantially as and for the purposes described.

CHARLIE E. MARK.

Witnesses:

E. SCULLY,  
H. S. SPRAGUE.