

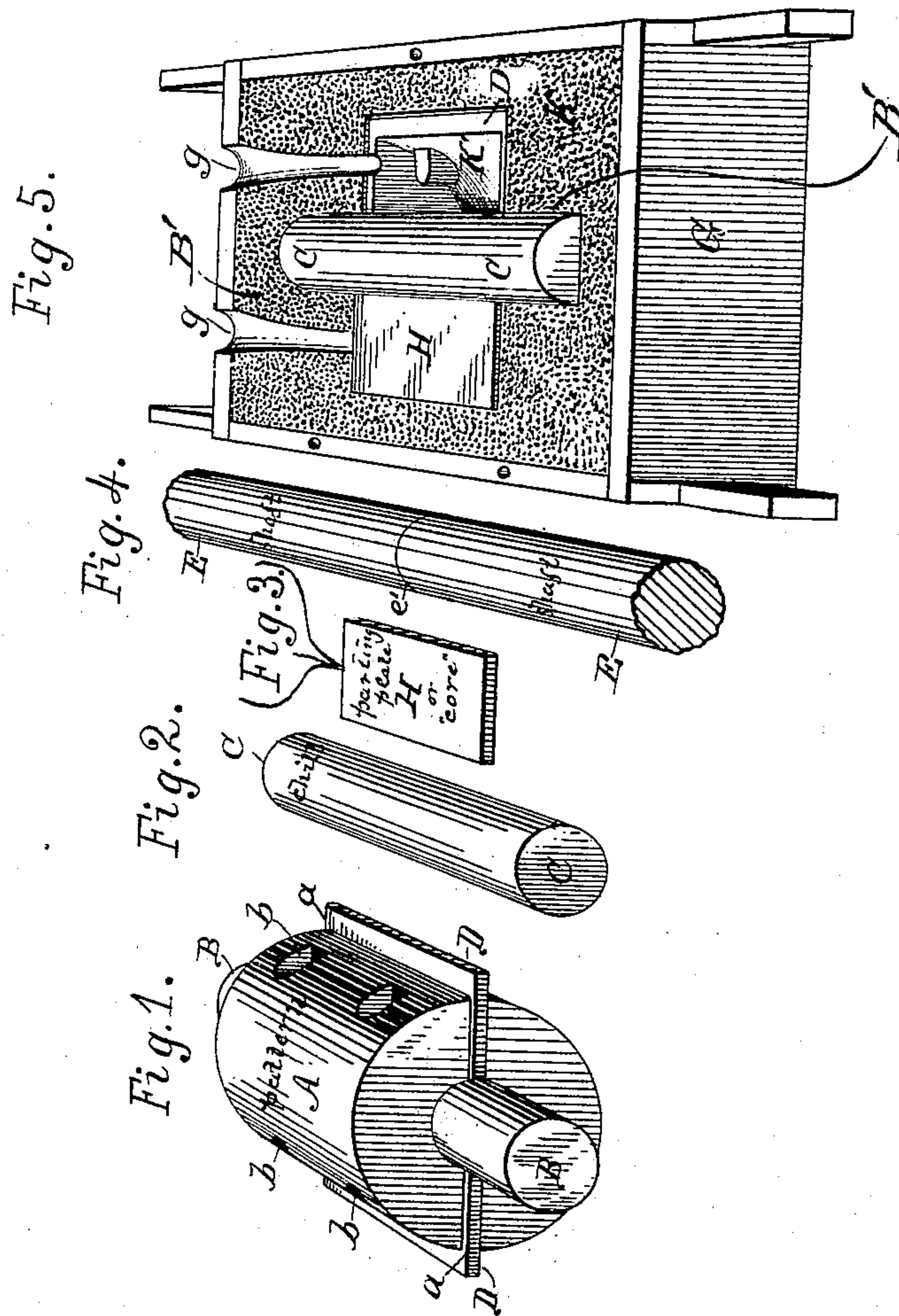
(No Model.)

J. HOBBS.

SAND MOLD.

No. 320,934.

Patented June 30, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSIAH HOBBS, OF EAST BROOKFIELD, MASSACHUSETTS.

SAND MOLD.

SPECIFICATION forming part of Letters Patent No. 320,934, dated June 30, 1885.

Application filed May 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH HOBBS, a citizen of the United States, residing at East Brookfield, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Molds for Casting Shaft-Couplings; 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 to that class of molds which are used for casting in halves shaft-couplings, pulleys, &c.; and it has for its object to cast a coupling or pulley which shall fit truly upon a shaft without being bored out after casting, and to cast a coupling which shall hold the ends of two shafts in line with each other.

To this end my invention consists in the construction and combination of parts forming a mold for casting shaft-couplings, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective drawing of a shaft-coupling pattern adapted to form my mold. Fig. 2 is a perspective drawing of a chill for forming the seat of the shaft in the coupling. Fig. 3 is a perspective drawing of a parting core. Fig. 4 is a perspective drawing of two shaft ends. Fig. 5 is a perspective drawing of one half of my mold formed in the drag half of a flask with the chill and one parting core laid in the mold.

A represents the body of the pattern, which is here shown of the usual cylindrical form, parted at *a* for convenience in molding, and provided with recesses *b*, in which the bolt heads and nuts for securing the two halves together may be buried below the cylindrical surface of the coupling when finished.

B B represent the chill-prints, and D D the parting-core prints. Thus much constitutes the pattern.

C is the chill, made of iron or steel of the same size as the shaft for which the coupling is to be fitted.

E represents two ends of a line of shafting meeting at *e'*.

It is well known that the usual method of coring cannot make holes true enough to fit

shafting; therefore, I have devised a plan for casting couplings on a chill as follows: The pattern A is to be placed in a flask, the molding-sand K to be rammed in, forming in each part of the flask a mold, K', chill-prints B', and parting-core prints D', the flask to be parted, and the pattern drawn as usual. The chill C is to be placed in the molds formed by the prints. The parting cores H of sand are to be placed against the chill in the molds formed by the prints D. Any usual sprue-holes, *g*, will be so located in the sand and connected with the mold that the iron will run both above and below the parting cores simultaneously, in order that the half-coupling in the cope (not shown) may be cast at the same time as the half-coupling in the drag G. The mold is then to be closed, and the pouring should be done on end. In Fig. 5 only one core H is shown laid in place.

It is common to lay cores in sand for various purposes; but I am not aware that cores have been used to entirely separate two similar opposite pieces in a sand-mold. It is also common to lay a portion of a chill in the sand, another portion to be entirely surrounded by the iron, or to lay one side of the chill in the sand, allowing the iron to form against the other side; but if only one half of a coupling is made against the chill, as in the second usual process above stated, the hot iron flowing against one side of the chill heats and expands that side, thus crooking the chill and forming a crooked half-coupling thereon. Furthermore, there is no certainty of two half-couplings thus made matching each other; or if, as in the first instance, I allow the iron to flow entirely around the chill, the latter will be rigidly held in the iron when cold, and cannot be removed without damage to both the chill and coupling.

By my process of molding with a single cylindrical pattern having parting-core prints, and then laying a continuous chill from end to end thereof to form the shaft-hole, and finally separating the coupling so molded into halves by cores, and pouring both halves simultaneously, I make the two halves of a coupling at one operation, insuring these two halves to fit together upon the shaft so as to hold the shaft ends in a straight line. By expanding the chill on both sides at once it is preserved straight. By

pouring the iron around the chill, and yet keeping the iron so poured parted into two halves, each half may shrink in cooling without cracking, and each half will readily separate from the central chill, leaving the shaft-hole perfect.

5 When the casting is cold, it has only to be cleaned from sand, then placed again upon the chill or a like mandrel to align the halves; then drill the bolt-holes through the spots *b*.

10 The outside may be finished, if desired, by turning on the mandrel when bolted together.

The seat for the shaft in each half of the coupling is a semi-cylinder lacking half the thickness of the core *H*.

15 Some part of the advantage of pouring both halves of a coupling or pulley at once would be obtained even if the chill *C* were substituted by a core of charcoal or sand. In either case the cores *H* and the part *C* which forms the central hole constitute a partition which divides the mold into two separate compartments.

What I claim as my invention, and desire to secure by Letters Patent, is—

25 1. A sand mold for casting a shaft-coupling,

comprising the main cavity *K'*, the chill-print cavities *B'*, and core-print cavities *D'*, in combination, with a chill, *C*, seated in the cavities *B'*, and parting cores *H*, laid in the print-cavities *D'*, and sprue-holes adapted to admit 30 metal to both halves of the mold simultaneously, as shown and described, whereby two separate halves of a coupling may be cast in one mold at the same time.

2. The combination of the sand mold comprising the main cavity *K'*, the print-cavities *B'* and *D'*, parts *H H* and *C*, adapted to fit the said print-cavities and forming a complete partition through the mold, and sprue-holes 35 connecting with the mold at both sides of the partition, as set forth, whereby metal may be admitted to the two halves of the mold simultaneously, for the purpose described. 40

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

JOSIAH HOBBS.

Witnesses:

JOHN A. UPHAM,
GEORGE E. FORBES.