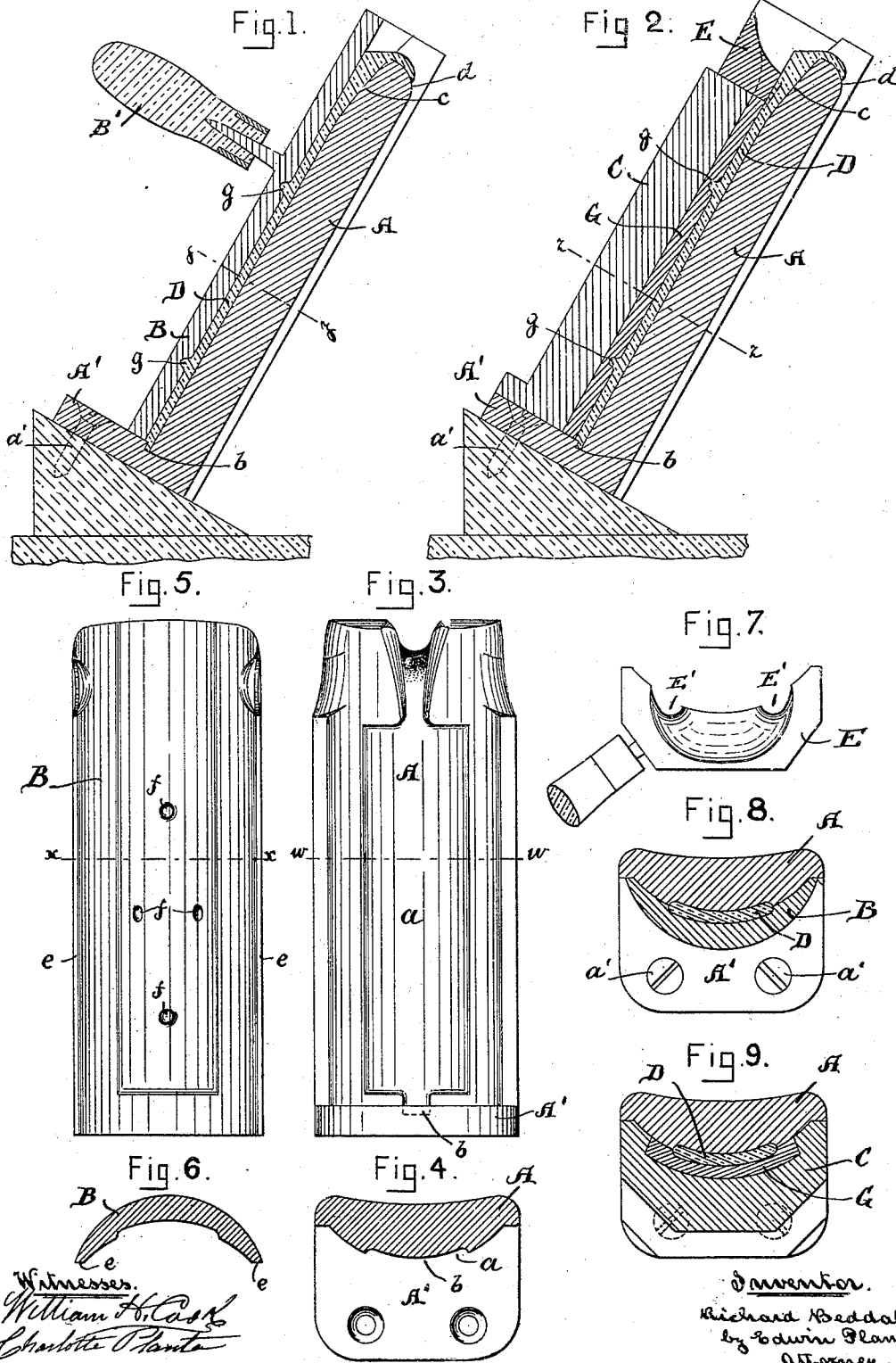


(No Model.)

R. BEDDALL.
METHOD OF LINING JOURNAL BOXES.

No. 422,873.

Patented Mar. 4, 1890.



UNITED STATES PATENT OFFICE.

RICHARD BEDDALL, OF BOSTON, MASSACHUSETTS.

METHOD OF LINING JOURNAL-BOXES.

SPECIFICATION forming part of Letters Patent No. 422,873, dated March 4, 1890.

Application filed December 31, 1889. Serial No. 335,551. (No model.)

To all whom it may concern:

Be it known that I, RICHARD BEDDALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in the Method of and Apparatus for Lining Journal-Boxes, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a new method of lining journal-boxes with hard metal having a soft-metal lining, whereby the operation of lining can be quickly and economically performed.

The nature and operation of the invention will be readily understood by all conversant with the art to which it appertains from the following explanation.

Referring to the accompanying drawings, Figure 1 represents a vertical transverse section through the stationary and removable portions of the mold with the lead and soft-metal lining cast therein. Fig. 2 is a vertical transverse section through the stationary portion of the mold, the lead or soft-metal lining, the journal-box, and the hard-metal lining. Fig. 3 is a face view of the stationary portion of the mold. Fig. 4 is a transverse section taken on line *ww* of Fig. 3. Fig. 5 is a face view of the removable portion of the mold used for casting the lead or soft-metal lining. Fig. 6 is a transverse section taken on line *xx* of Fig. 5. Fig. 7 is a plan or top view of the gate for casting the hard-metal lining. Fig. 8 is a transverse section through the mold, taken on line *yy* of Fig. 1. Fig. 9 is a transverse section through the mold and journal-box, taken on line *zz* of Fig. 2.

In carrying out my invention I first cast the lead or soft-metal lining in a mold having a stationary and removable portion. After the soft metal has been poured the removable portion of the mold is then removed, leaving the lead or soft metal on the stationary portion of the mold. The journal-box is then placed in position on the stationary portion of the mold, and a gate having two runners is placed upon the top of the bearing and the hard-metal lining is run in, and is conducted by the runners into the mold on each side of the soft-metal until sufficient

metal has been poured to form the lining of the box. The box is then lifted off and the sprue trimmed off.

In the drawings I have shown an apparatus for carrying my invention into effect. A represents the stationary portion of the mold, which is at its lower end provided with a step *A'*, that supports the removable portion B of the mold for casting the soft metal, and also supports the journal-box C when the hard metal is being run in. The central portion *a* of the mold A is rounded up to correspond to the radius of the axle, and in the center is recessed the size and shape it is desired to have the lead or soft metal. A small recess *b* is also formed at the bottom of the mold, so that when the soft metal is cast a teat is formed at its lower end and prevents it from being drawn away when the portion B of the mold is removed. The upper end of the mold is cut away, as shown at *c*, and forms a gate, the outer portion *d* of which is rounded down outwardly, so that the sprue will run over and hold the soft metal to the mold at the top. The removable portion B of the mold when in position rests upon the step *A'*, and its sides *e e* rest against the face of the portion A. The central portion is recessed and formed as may be desired, and is also provided with one or more small recesses *f* to form teats *g* upon the under side of the soft metal D.

During the operation of pouring the soft metal the portion B of the mold is held in position by the handle *B'*, and when this portion of the operation is completed the portion B of the mold is removed. The journal-box C is then placed in position on the stationary portion A of the mold, its own weight keeping it in place as the portion A of the mold is set on an angle, it being secured to a block by screws *a'*, as shown in Figs. 1 and 2. Upon the top of the box C is then placed the gate E, having two runners *E' E'*, (see Fig. 7,) which, when the hard metal G is poured, conducts it down into the box on each side of the soft metal D, so that it runs to the bottom of the mold and gradually rises up around the soft metal D, so that it (the soft metal) is not melted, but only softened sufficient to adhere to the hard metal. After the hard metal has been poured the gate E is removed, and then

the box with the lining is lifted off. The sprue and the teat at the bottom are then trimmed off and the box is complete.

It will be seen that by this method the soft metal is first cast, then the hard metal, and the operation can be performed very quickly, as there is no clamping, and when the two metals are cast the teats *g* prevent any possibility of the soft-metal lining shifting or sliding.

What I claim as my invention is—

The method of lining journal-boxes, consisting of first casting the soft metal in a mold, removing a portion of the mold, but

leaving the soft metal on the other portion, then placing the journal-box over the soft metal, and running the hard metal between the box and the soft metal, substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of December, A. D. 1889.

RICHARD BEDDALL.

Witnesses:

CHAS. STEERE,
EDWIN PLANTA.