UNITED STATES PATENT OFFICE.

GEORGE FRANCIS CHAMPNEY, OF BERLIN, GERMANY.

MANUFACTURE OF DIES.

SPECIFICATION forming part of Letters Patent No. 368,873, dated August 23, 1887.

Application filed February 17, 1887. Serial No. 227,958. (No specimens.)

To all whom it may concern:

Be it known that I, GEORGE FRANCIS CHAMPNEY, a citizen of the United States of North America, residing at Berlin, in the German Empire, have invented certain new and useful Improvements in the Manufacture of Dies by Means of Cast Patrices, of which I declare the following to be a specification.

In the manufacture of steel dies or matrices it has been the practice to either cut out the matrix direct in the deep with the chisel and graver or to cut from a solid block of steel a patrix, which, when duly formed and finished, is hardened and then pressed by slow degrees into the block of steel destined to be the matrix. This operation is usually done when the steel is cold, and causes the steel at the point of impact with the patrix to become as hard as the patrix itself. Consequently the steel die-block requires to be annealed after each pressing in of the patrix, which is done by packing the same in powdered charcoal or other suitable material, in order to protect the steel from oxidation by reason of the heating. It is then placed in a fire and heated red-hot, after which it is allowed to slowly cool. Then the patrix is again forced into the die-block, after which it is again annealed, as before, and this operation of forcing a cut hardened-steel patrix into a steel block requires to be repeated many times, and it often requires one, two, or three weeks to accomplish the work.

By the inventions protected to me by United States patents, dated May 3, 1881, No. 240,887, and July 24, 1883, No. 281,970, I am enabled to do the same work as above described by a single blow of a drop-hammer and in a short space of time; but instead of using a patrix that has been produced by the slow and tedious process of cutting out of a solid block of metal I now use a patrix cast in metal direct from a suitable pattern or mold and drive the patrix into the hot-steel block by a single blow of the hammer.

By or through the use or employment of cast patrices nearly or quite three-quarters of the labor and cost of producing the patrix is saved.

Having now particularly described the nature of my said invention and in what manner the same is to be carried into effect, I declare that what I claim and desire to secure by Letters Patent is—

The method herein described of forming dies, consisting in constructing the base thereof of a solid block of suitable metal, then forming the patrix by casting in a suitable mold, heating the die-block, and finally driving the patrix into the heated die-block, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE FRANCIS CHAMPNEY.

Witnesses:
B. ROI,
M. W. MOORE.