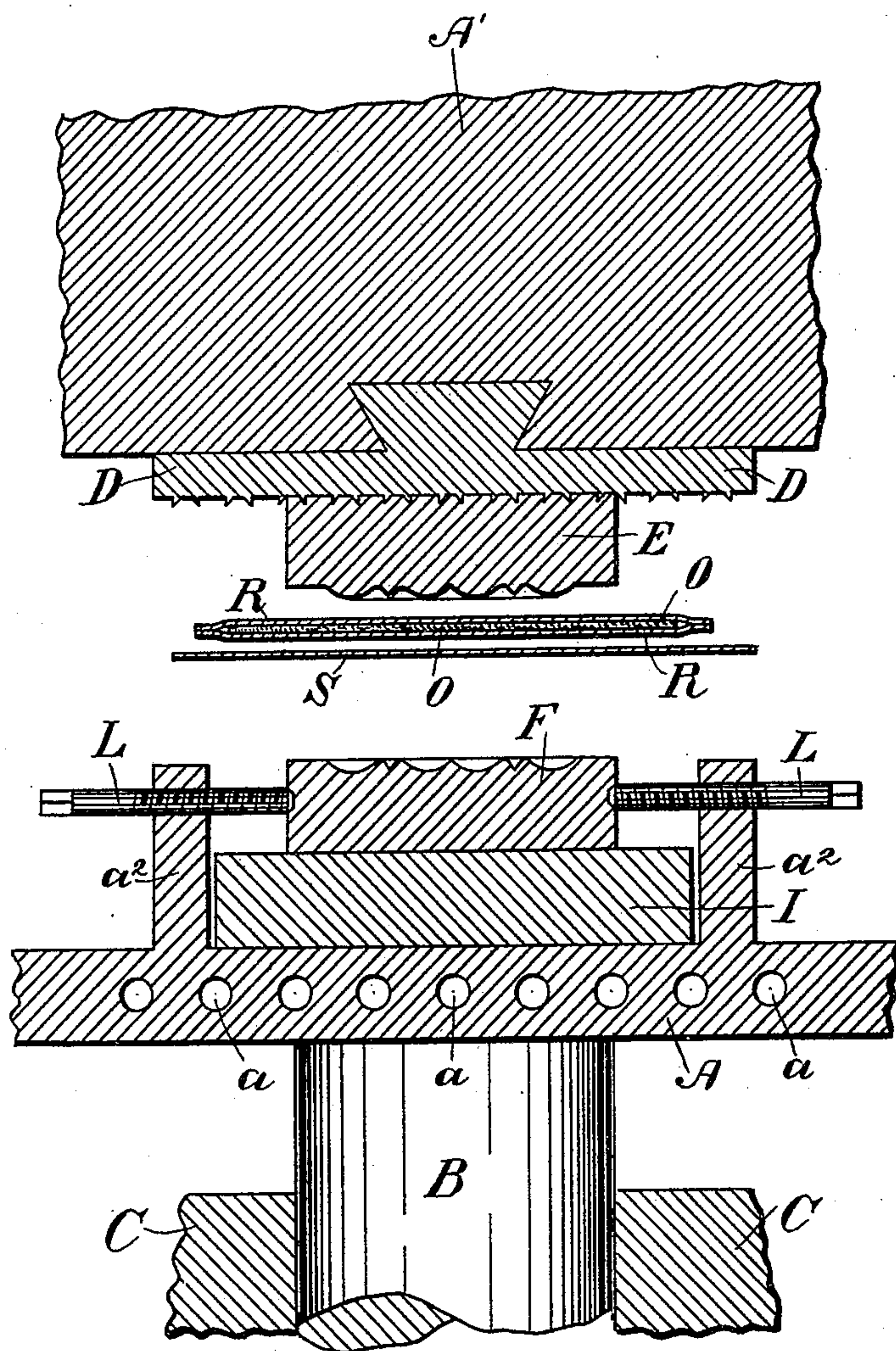


(No Model.)

A. F. JACKSON & J. HEWITSON.
DEVICE FOR ORNAMENTING METALS.

No. 463,991.

Patented Nov. 24, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

AUSTIN F. JACKSON AND JOHN HEWITSON, OF TAUNTON, MASSACHUSETTS,
ASSIGNORS TO THE REED & BARTON CORPORATION, OF SAME PLACE.

DEVICE FOR ORNAMENTING METALS.

SPECIFICATION forming part of Letters Patent No. 463,991, dated November 24, 1891.

Application filed September 29, 1890. Serial No. 366,427. (No model.)

To all whom it may concern:

Be it known that we, AUSTIN F. JACKSON and JOHN HEWITSON, both citizens of the United States, residing at Taunton, in the county of Bristol and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Devices for Ornamenting Metals, of which the following is a full specification.

Our invention consists in certain devices whereby the process of ornamenting metal, especially in thin plates or sheets with raised or depressed work by means of dies, is materially cheapened and improved. It has hitherto been necessary in such work to employ both a male and a female die accurately made at large expense to fit one another, the female die being made of hardened steel and the male of steel not hardened, or of some hard metal if it is desired to use them continually for fine work. Both dies have to be equally accurate else the impression would be unsatisfactory, and if one were made of soft metal it would last only for one or two good impressions. By our improved devices we are enabled to use one die only of hard metal, not necessarily steel, the other being made of soft metal preferably cast in the hard-metal die as a mold.

The accompanying drawing represents a sectional view taken through the dies, parts of the press, &c., illustrating our invention.

A is the movable platen or table of a hydrostatic press, which is most commonly employed for such work, supported on the piston B. On this table in the present instance is supported the female die F, which rests upon the block I and is firmly held by screws L, supported in standards a^2 on the table A. This female die is made quite accurately of hardened steel or other hard metal, and the male die is made of soft metal preferably cast in the female die as a mold. The male die E is held in place in any desired manner over the die F, as by being gripped by projecting points of the plate D, held by the stationary bed A' of the press.

S is the sheet or plate of metal to be stamped. If this were placed directly between the two dies E and F and the two dies brought together by the raising of the table A, one good

impression might be obtained and possibly two or three; but the soft-metal die would quickly become so worn as to be unfit for use. If, however, a sheet of rubber be introduced between the male or soft-metal die and the plate to receive the impression, the said soft-metal die will last through an almost indefinite series of impressions and the impressions will be accurate.

It is desirable to apply heat to one of the dies in order to make finer work. To this end the table of the hydrostatic press is provided with steamways a , in which a circulation of steam is kept up, thereby heating the table and the die F. If the rubber were not protected, it would quickly burn and become useless. We therefore preferably hold the rubber O between two thin sheets of metal R R, one above and one below it, the said sheets of metal being soldered or riveted together around the edges of the rubber sheet. While two sheets, as shown, are preferable, but one only may be employed—viz., between the rubber and the heated die F to protect the same from the heat. The two, however, are preferable. Whether one or two protecting-sheets are employed, the rubber serves to fill out the impression even when the soft-metal die has become very much worn. With such an arrangement a set of dies—one of hard and one of soft metal—may be used a very long time, and are much less expensive and more easily arranged by reason of the fact that when the soft die becomes too much worn for use another may readily be cast in the hard-metal die as a mold. Even if the female die does not accurately fit the other and is only an approximate likeness thereof, it may be used through a large number of impressions, the rubber serving to press the metal to be stamped accurately into the finer die.

We claim—

1. The combination, with a pair of dies for ornamenting metal, of a sheet of rubber interposed between the male die and the metal to be ornamented, substantially as and for the purposes described.

2. The combination of a hard-metal die, a soft-metal die, a sheet of rubber interposed between the metal to be ornamented and the

softer die, and a suitable press for bringing all the parts together, arranged and operating substantially as and for the purposes described.

- 5 3. The combination, with a pair of dies for ornamenting metal, of a press having a heated bed and a sheet or plate of rubber protected by one or more sheets of metal, said rubber with said protecting-sheets being interposed
10 between the male die and the metal to be or-

namented, substantially as and for the purposes described.

In witness whereof we have hereunto set our hands.

AUSTIN F. JACKSON.
JOHN HEWITSON.

Witnesses:

ALBERT E. LEACH,
GEO. E. CHAMBERS.