

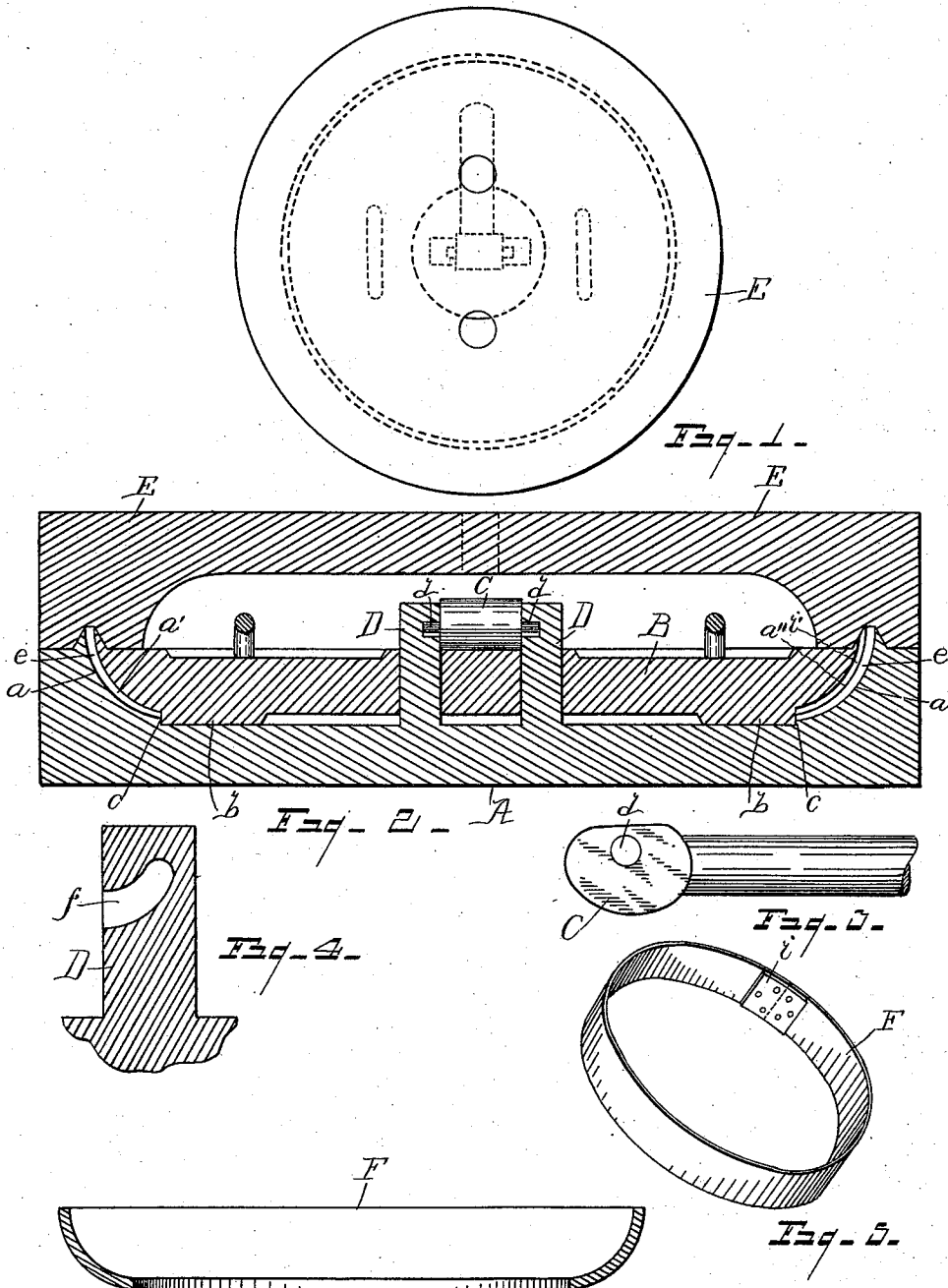
(No Model.)

D. M. IRELAND.

MECHANISM FOR FORMING STOVE BANDS.

No. 576,126.

Patented Feb. 2, 1897.



WITNESSES
Horace R. Wheeler,
A. Thurtell

INVENTOR
Fig. 5 - David M. Ireland,
By R. B. Wheeler & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

DAVID M. IRELAND, OF DETROIT, MICHIGAN.

MECHANISM FOR FORMING STOVE-BANDS.

SPECIFICATION forming part of Letters Patent No. 576,126, dated February 2, 1897.

Application filed September 25, 1896. Serial No. 606,990. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. IRELAND, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Mechanism for Forming Stove-Bands; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an ornamental ring or band for stoves and the method of forming such band; and it consists in the mechanism as hereinafter more fully set forth, and pointed out particularly in the claims.

The object of the invention is to produce from sheet metal an ornamental ring or band which embraces the body of the stove, making a lighter, stronger, and cheaper product and obviating the necessity of casting such bands or rings, which has been the practice heretofore. This object is attained by the machine illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the dies employed in forming my improved product. Fig. 2 is an enlarged transverse section through the dies and the follower or plunger. Fig. 3 is an enlarged side elevation of the cam-lever for locking the dies when set. Fig. 4 is an enlarged vertical section of one of the slotted posts in which the trunnion of the cam-lever engages. Fig. 5 is a perspective view of the sheet-metal ring before receiving its final formation, and Fig. 6 is an enlarged transverse section through the ring after its formation has been completed.

These ornamental rings, which are most commonly employed for decorating heating-stoves, are curved transversely, as well as being circular in form, such curvature describing in cross-section a quadrant of a circle, the opposite edges of said ring standing in planes at right angles to each other and forming a ring of unequal diameters at the opposed edges thereof. It has heretofore been the custom, because of the peculiar shape of these rings, to cast them, which necessitated mak-

ing the rings heavier than was required for ornamental purposes, besides making additional work in grinding down the convex surfaces to prepare them for nickel-plating. By my improved method I am able to produce rings of this peculiar shape from sheet-steel which enables me to make a much lighter ring, and because of the true surface of the sheets from which the rings are formed the labor necessary to prepare the surface for plating is greatly reduced, and as an additional advantage my method enables me to form these rings with great rapidity, thereby conducing to cheapen the product.

With reference to the drawings illustrating my method of producing this improved product, A designates the lower or female die, the upper face of which is provided with a circular recess whose surrounding wall is curved downward and inward, as at *a*, to describe the contour of the ring to be formed, and terminates in a sharp angular shoulder *c* at its inner edge next the flat base of this die.

B designates the upper or male die, which fits within the female die and whose edge is curved upward and outward, as at *a'*, concentric with the wall of the die A. The under face of the die B is provided with a depending ring *b*, which is circular and has at its outer edge a sharp annular shoulder, which is embraced by and coöperates with the shoulder *c* on the die A, which arrangement serves to center said dies and so retain them in place as to form a curved way *e* between their adjacent faces. Said dies are locked together by means of a cam-lever C, having lateral trunnions *d*, which engage in the curved slots *f* in the adjacent faces of the opposed posts D, which extend from the lower die through apertures in the upper die, their projecting ends receiving the trunnions of the cam-lever, which detachably engage in the curved slots therein. The high point of the cam when the lever is thrown down bears upon the upper face of the die B and securely locks said dies together.

E designates a follower which is mounted upon a vertically-movable plunger of a press (not shown) and serves by its downward stroke to force the ring into the way or opening *e* between the dies to give said ring the desired formation.

In the operation of forming this improved ring or band a strip of the required length and thickness is cut from sheet metal of the proper gage and formed into a circular band F, as shown in Fig. 5, the ends of the band abutting and being secured by a plate *i*, extending across the joint and riveted to the respective ends of said band. I do not wish, however, to limit myself to this method of uniting the ends of the band, as the joint may be formed by welding or brazing. With the band so formed the dies A B are placed together, as shown in Fig. 2, and locked by the cam-lever C. The lower edge of the band is then placed within the circular way *e* between said dies, the band being so placed therein that the reinforcing-plate *i* shall register with a recess or offset *a''*, formed in the curved edge *a'* of the die B to accommodate the added thickness of the band at this point. The dies, with the band therein, are then placed in the press beneath the follower E and so as to properly register therewith when said follower is caused to descend upon the upper edge of the band and by its downward stroke to force said band into the curved circular way *e* between the dies, thereby necessarily condensing or compressing the lower edge of the band annularly and forming said band into a circular ring having a transverse curve, which, in cross-section, describes the quadrant of a circle, as clearly shown in Fig. 6. After the downward stroke the follower E is raised, when the formed band is removed by unlocking the cam-lever and raising the die B.

By the employment of the dies herein shown, in which the way *e* between their concentric faces is of such width only as to snugly receive the thickness of said band, the forcing of said band into said way between the dies compels it to assume the form thereof without wrinkling by compressing the metal annularly in that edge of the band, which is finally of the smallest diameter. This process enables the ring to be formed from sheet metal without breaking the surface thereof, whereby said surface may be easily prepared for nickeling—resulting in a product of this character which is very light as compared with a cast ring and which may be cheaply and quickly made.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for forming rings or bands,

the combination with a female die having a downwardly and inwardly curved wall; of a male die having its edge curved on a line concentric with that of said wall of the female die, a lock for holding the dies together so as to produce a way between said curved faces which is of the same width throughout, and a follower for forcing a metal ring into the way, as and for the purpose set forth.

2. In a machine for forming rings or bands, the combination with a female die having a downwardly and inwardly curved wall, and a male die having its edge curved on a line concentric with that of the wall of the female die; of posts projecting from one die toward the other, the latter having apertures through which said posts pass when the dies are in working position and said posts having curved slots in their corresponding sides, a cam-lever, and lateral studs on the head of the lever removably engaging said slots, as and for the purpose set forth.

3. In a machine for forming rings or bands, the combination with a female die having a downwardly and inwardly curved wall; of a male die having its edge *a'* curved on a line concentric with that of the wall and provided at one point with a notch or recess *a''*, a lock for holding said dies together so as to produce a way between their curved faces which is of the same width throughout, and means for forcing into this way a metal ring having a reinforcing-plate which enters said notch, as and for the purpose set forth.

4. In a machine for forming rings or bands, the combination with a female die A having a downwardly and inwardly curved wall *a* terminating in an upright shoulder *c* next the flat base of the die; of a male die B having its edge *a'* curved on a line concentric with that of the wall *a*, a depending ring *b* on the male die whose outer edge fits within said shoulder *c* and whose thickness is such as to form between the curved faces, when this ring rests on the base of the female die, an annular way of the same width throughout, means for locking the dies together, and devices for forcing the ring into said way, as and for the purpose set forth.

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

DAVID M. IRELAND.

Witnesses:

E. S. WHEELER,
HORACE R. WHEELER.