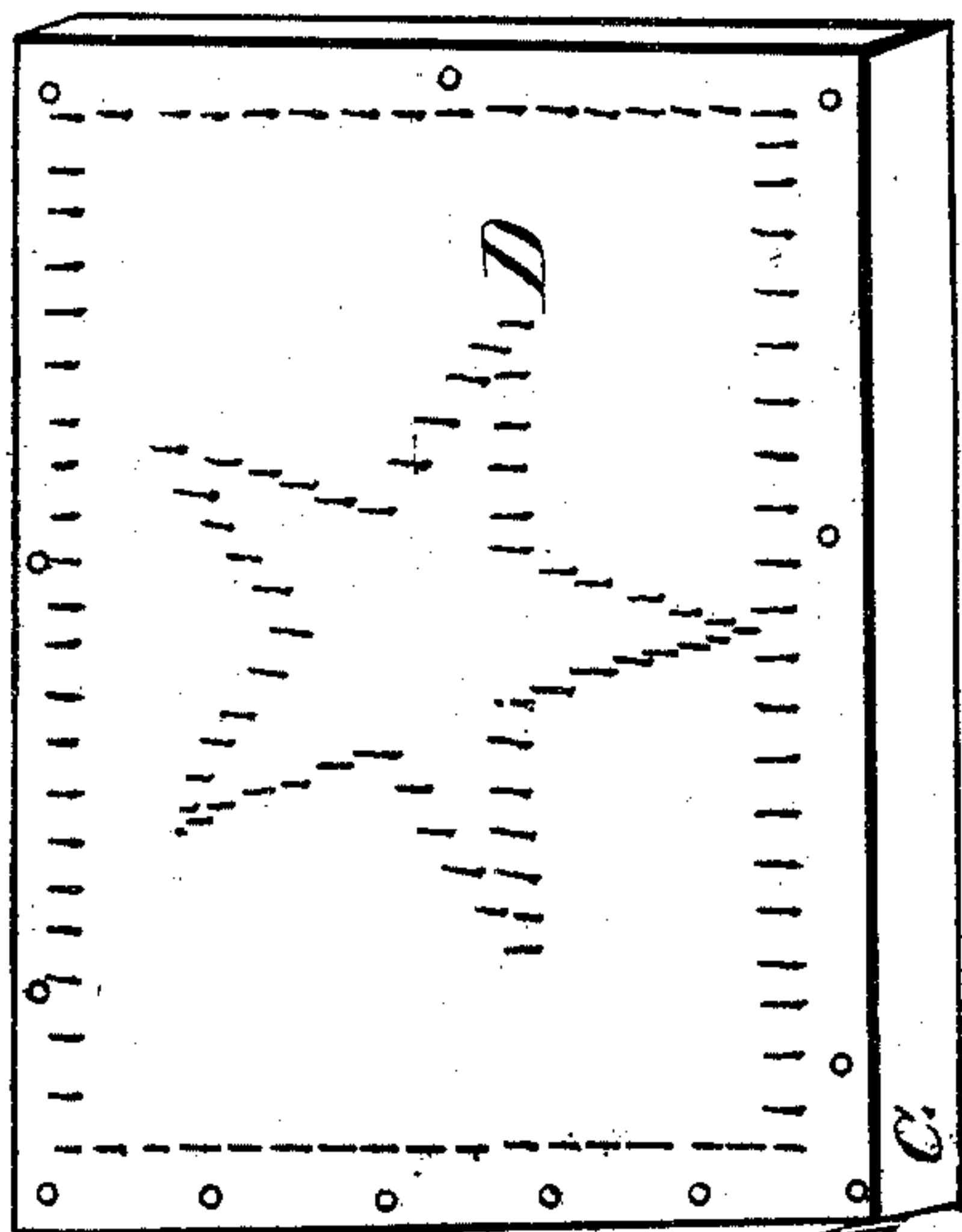


W. T. RUDD.

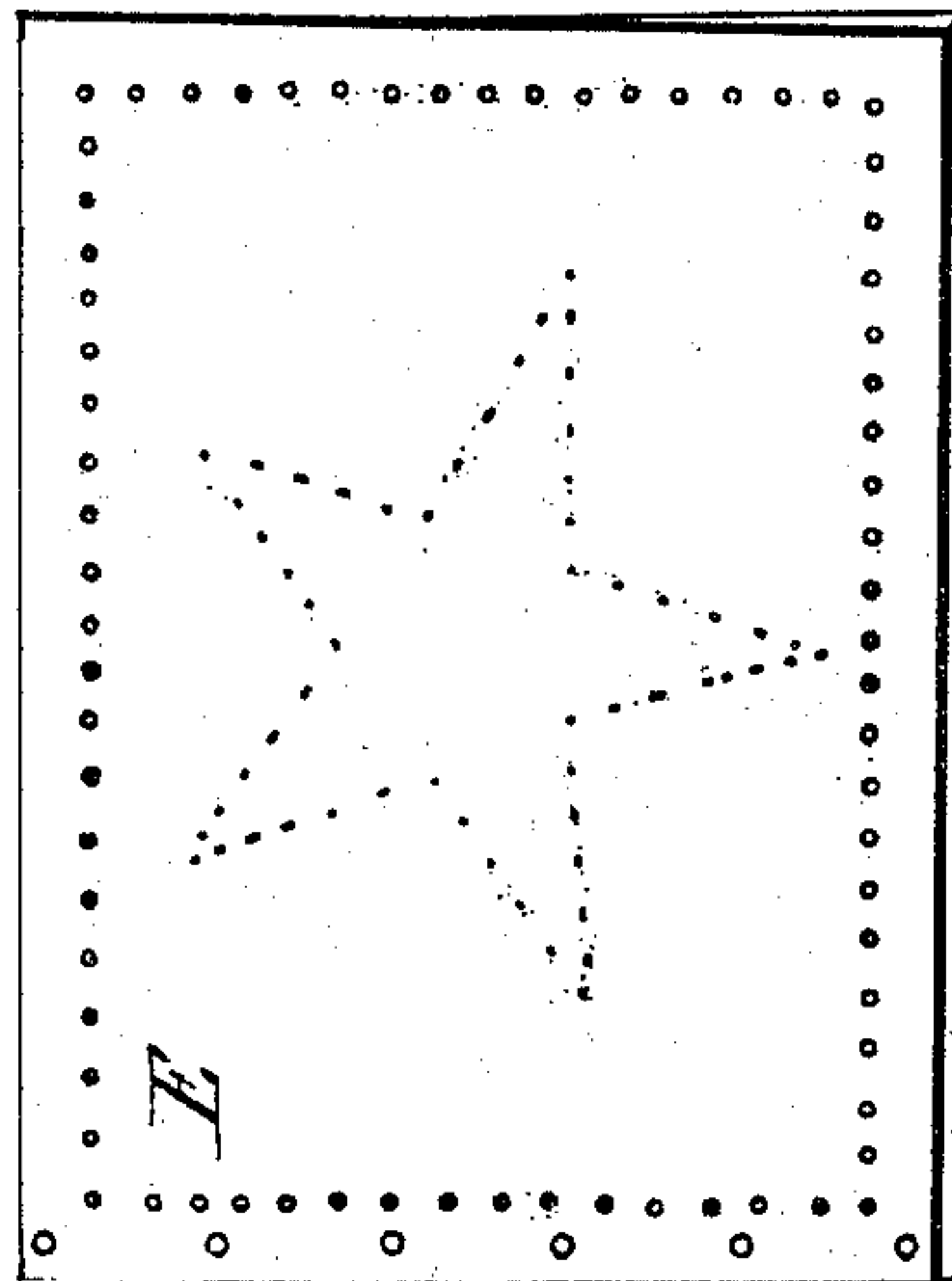
Metal Punch.

No. 8 211.

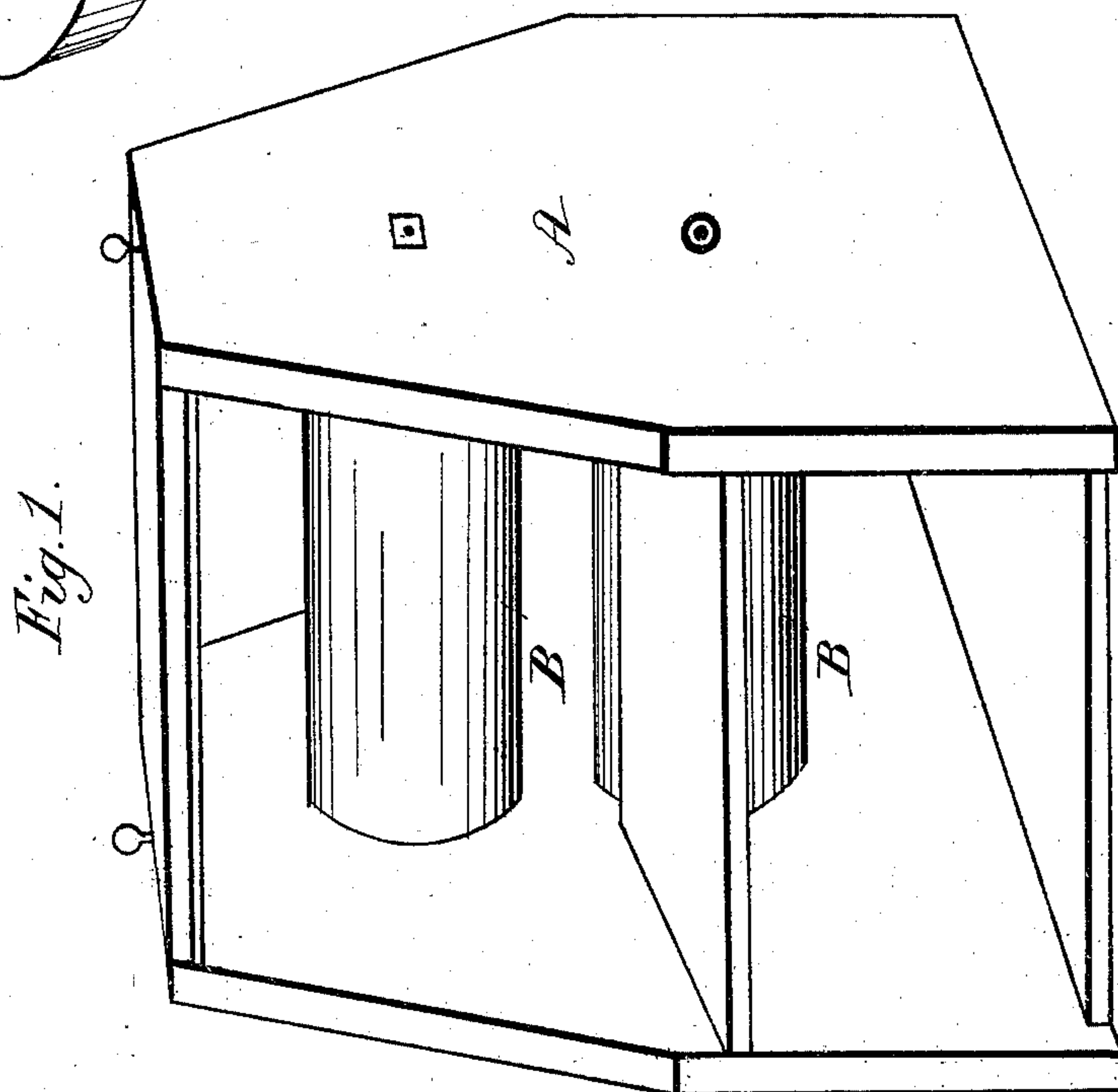
Patented July 8. 1851.



*Fig. 2.*



*Fig. 3.*



*Fig. 1.*



# UNITED STATES PATENT OFFICE.

WM. T. RUDD, OF AMSTERDAM, VIRGINIA.

## APPARATUS FOR PUNCHING DESIGNS IN SHEET METAL.

Specification of Letters Patent No. 8,211, dated July 8, 1851.

*To all whom it may concern:*

Be it known that I, WILLIAM T. RUDD, of Amsterdam, in the county of Botetourt the State of Virginia, have invented a new and Improved Mode of Puncturing Designs in Thin Sheets, of All Kinds of Metals; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 is a view of a frame containing two rollers through which the design puncturer, is run. Fig. 2, a view of a plate set with steel punches showing a star within an oblong square. Fig. 3, a leather bed or die, the cover of the plate, having the same figure on it.

*Description and mode of construction.*—To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation in detail.

Fig. 1: A is a frame, of wood or metal, consisting of side pieces united at top and bottom by strong cross pieces. Near the middle, both front and back, are two rests running from side to side of A. B B are two rollers. The lower one works on bolts set in each end, and resting in boxes square or round set in the sides of A. The upper one is arranged in the same manner, with the exception of a handle to turn it on the right of A. The rollers are near the center of the sides of A with space enough between them to permit the punctures to be run through. Any kind of a frame will answer, provided it is furnished with two rollers and rests as above described. I am not particular in respect to this, and deem it unnecessary to give any further description, but, will proceed to describe the parts of the drawings composing what I term a design puncturer.

Fig. 2: C is a plate of metal, or block of metal faced wood, of any thickness at pleasure, having one or two handles or without any. And punches set to show the figure of a star within an oblong border. There are six holes near the handle for the purpose of securing the leather, E, by flat bolts. D are punches of tough steel rounding to a point or chisel shaped. These punches I set to represent stars, flowers, ships, scenery, &c. I also contemplate having them movable, and so that I can set them up to form any pattern, preserving them in their proper

positions by a screw or screws, pressing against a plate of iron acting directly on them or otherwise. E is a piece of thick leather, as long and as wide as it is intended to have the plate or block of metal faced wood. The leather is laid on the top of the punches and the part near the handle (if there should be one) is secured by flat bolts. The leather is run between the rollers which leaves the impression of the punches, on its lower or under side. The leather die or bed is now complete.

*Nature of my invention.*—The nature of my invention consists in leather beds or dies, in combination with a set of punches, for puncturing purposes, when such set of punches and the die, are used in connection with proper rollers, as in this instance. The advantages of the leather are as follows: First, the leather is cheaper and more readily procured in the country than lead plates. Second, the leather is more pliable than lead, or wood when rollers are used. Thirdly, the frequent bending or raising and closing of the leather, will not break it off while it would lead. Fourthly, the leather can be impressed with the figure at one operation, while it would take several seconds to make each impression of the points of the punches, separately, by hand, in the lead. Fifthly, the leather possesses an elastic property absolutely necessary when used in the frame between rollers, for it gives to the pressure of the points of the punches, which lead will not. Sixthly, the leather possesses another very important advantage, it can be cut to any size in a few moments, with but little trouble. Furthermore, if lead was used between rollers, the pressure would be calculated to press it out of proportion and cause it to require constant repair, which would be both expensive and annoying. The leather, as experience has proven, is not injured by any amount of pressure that is required to puncture sheets. Again, beds of plate lead, will not answer for rollers, as great pressure will always crack them, this is a strong objection to its use with rollers. Leather, is best fitted for the rollers, and any machine which obtains its power from any other source than rollers, must be larger and stronger (and more expensive) to withstand the additional force requisite to produce the puncturing. Seventhly, lead as well as wood, when used in vertical pressing for beds or dies, require the power to act instantly.



Wood wears too soon and would require constant replacing. With leather, this is not the case, and, the pressure of the rollers being applied to it gradually as it passes 5 through them gives it the preference. And lastly, the leather has been on trial for six months, and has been found to answer better than any other substance, while lead, or wood could not be used between rollers to 10 advantage. The leather has its peculiar claims and advantages, and cannot be said to be a mere substitution, all other things failing to produce the same result when rollers were used.

15 *Mode of operation of the design puncturer.*—Sheets, of any kind of thin metals, are placed between the under part of the leather E, and, the upper part of the steel punches D. The leather die is then pressed down, 20 or held at front by the right hand while the puncture is run through the rollers B, B.

The part of the die where it is secured to the plate C, is put under the rollers first. This holds the sheet (one being put in for puncturing at a time) firmly till drawn through 25 by the revolution of the rollers. A little oil may be used to grease the under part of the leather, this assists the sheets to leave the punches without trouble.

What I claim as my invention and desire 30 to secure by Letters Patent, is,

The leather bed or die, in combination with a set of punches for puncturing purposes, when such set of punches and the die are used in connection with proper rollers 35 substantially in the manner and for the purposes herein set forth.

WM. T. RUDD.

Witnesses:

WM. HUTCHISON,  
JAS. M. D. MOFFETT.