

No. 862,581.

PATENTED AUG. 6, 1907.

S. W. McKILLOP.  
DIE.

APPLICATION FILED APR. 30, 1906.

2 SHEETS—SHEET 1.

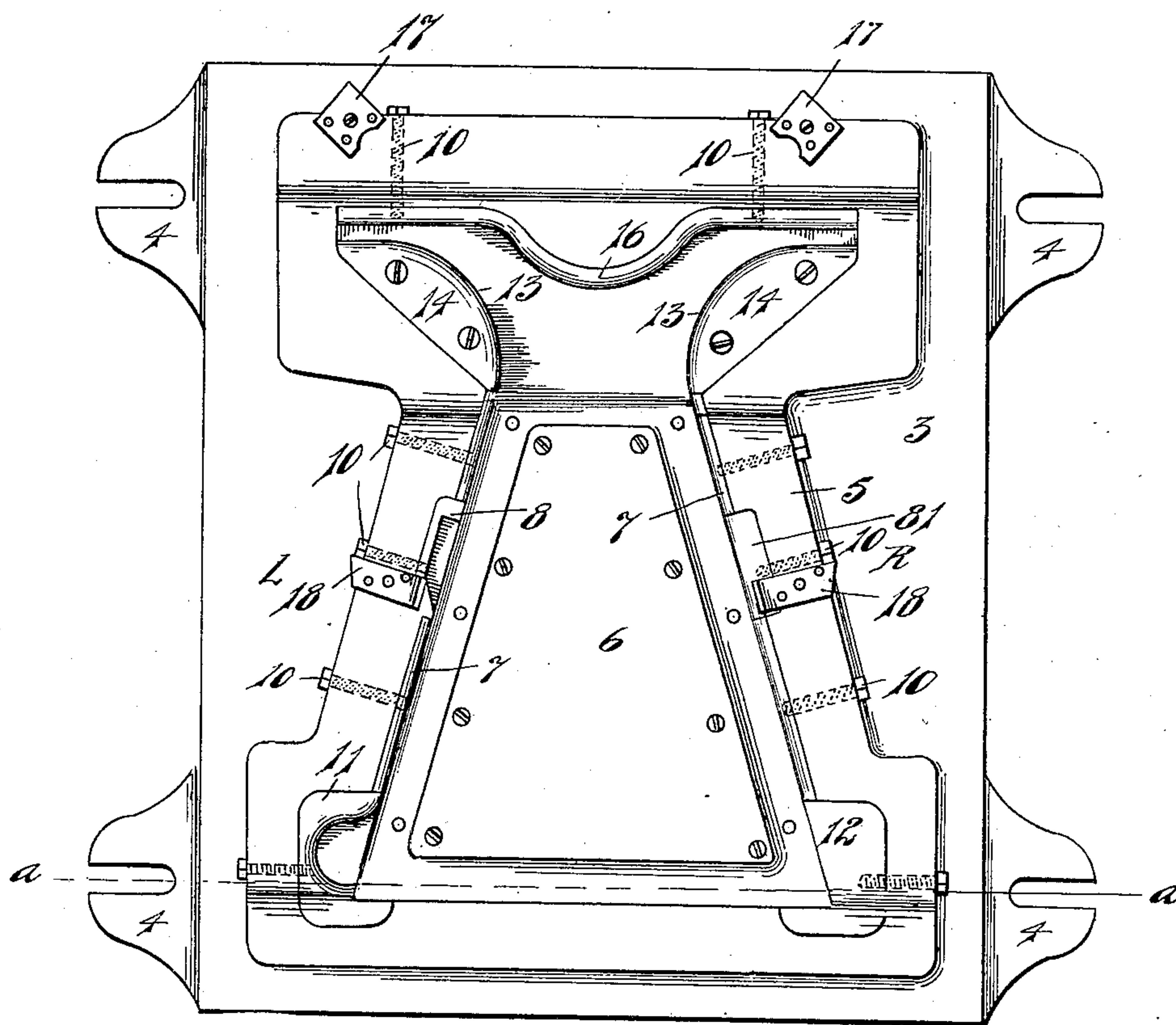


Fig. 1

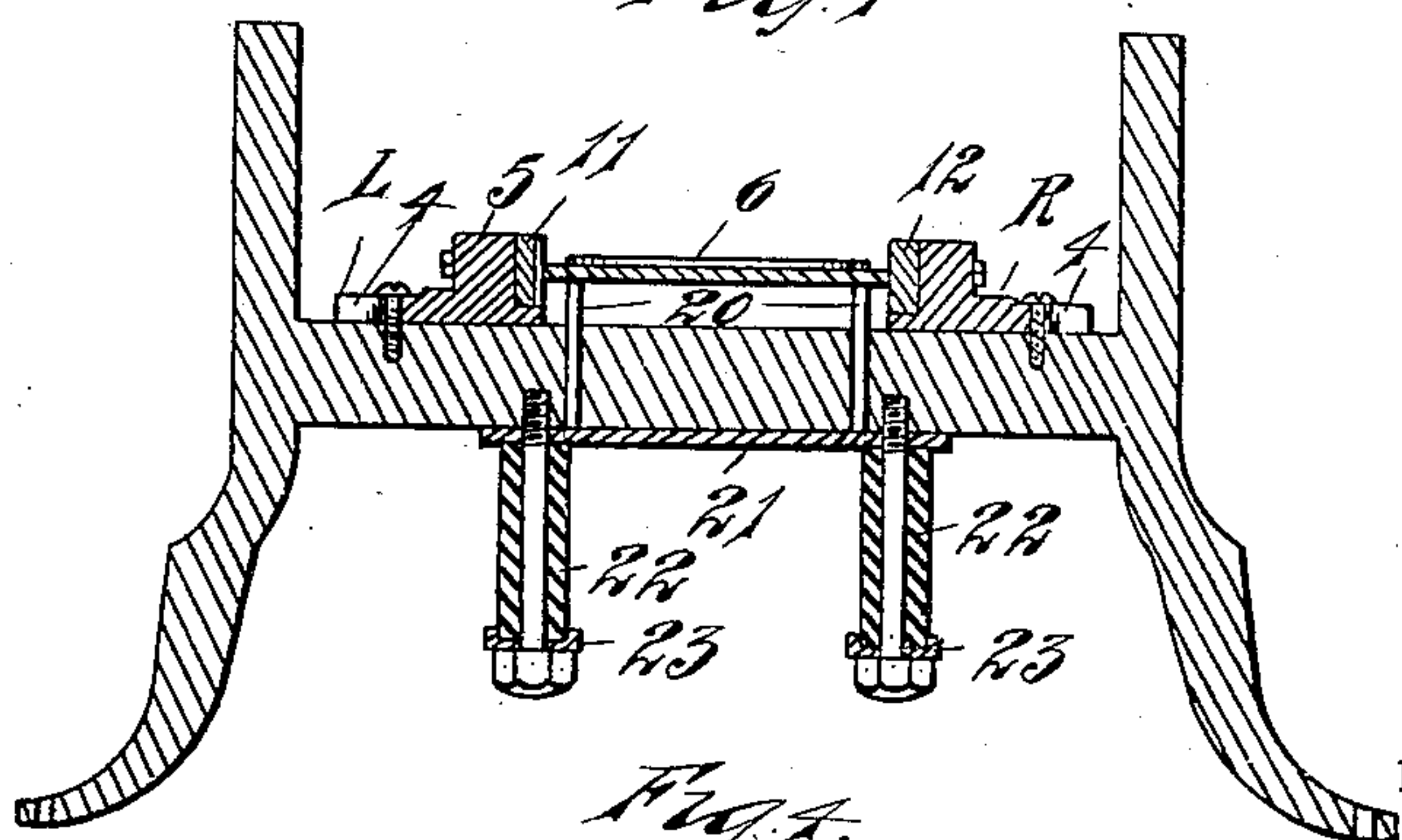


Fig. 2

WITNESSES

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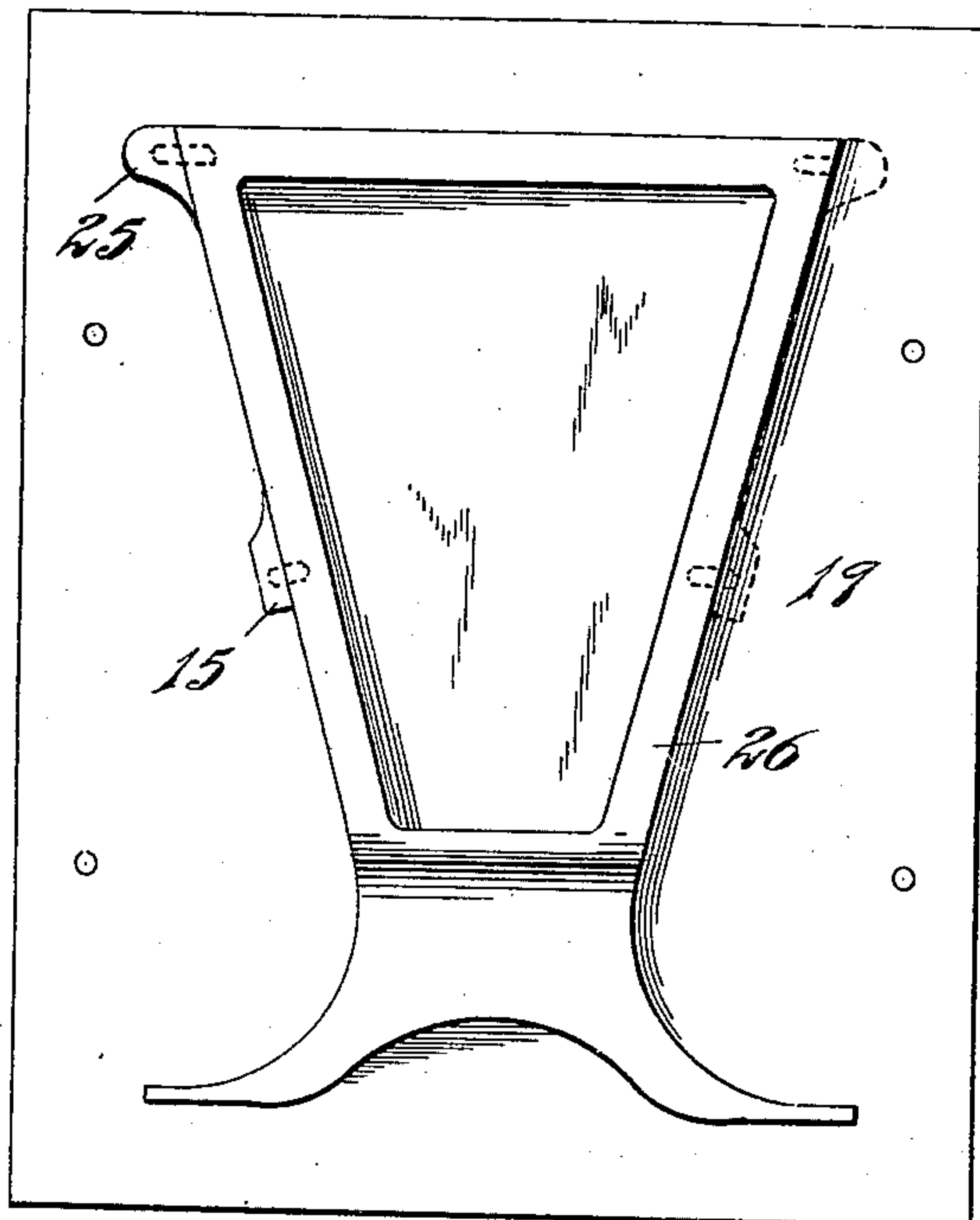


Fig. 2.

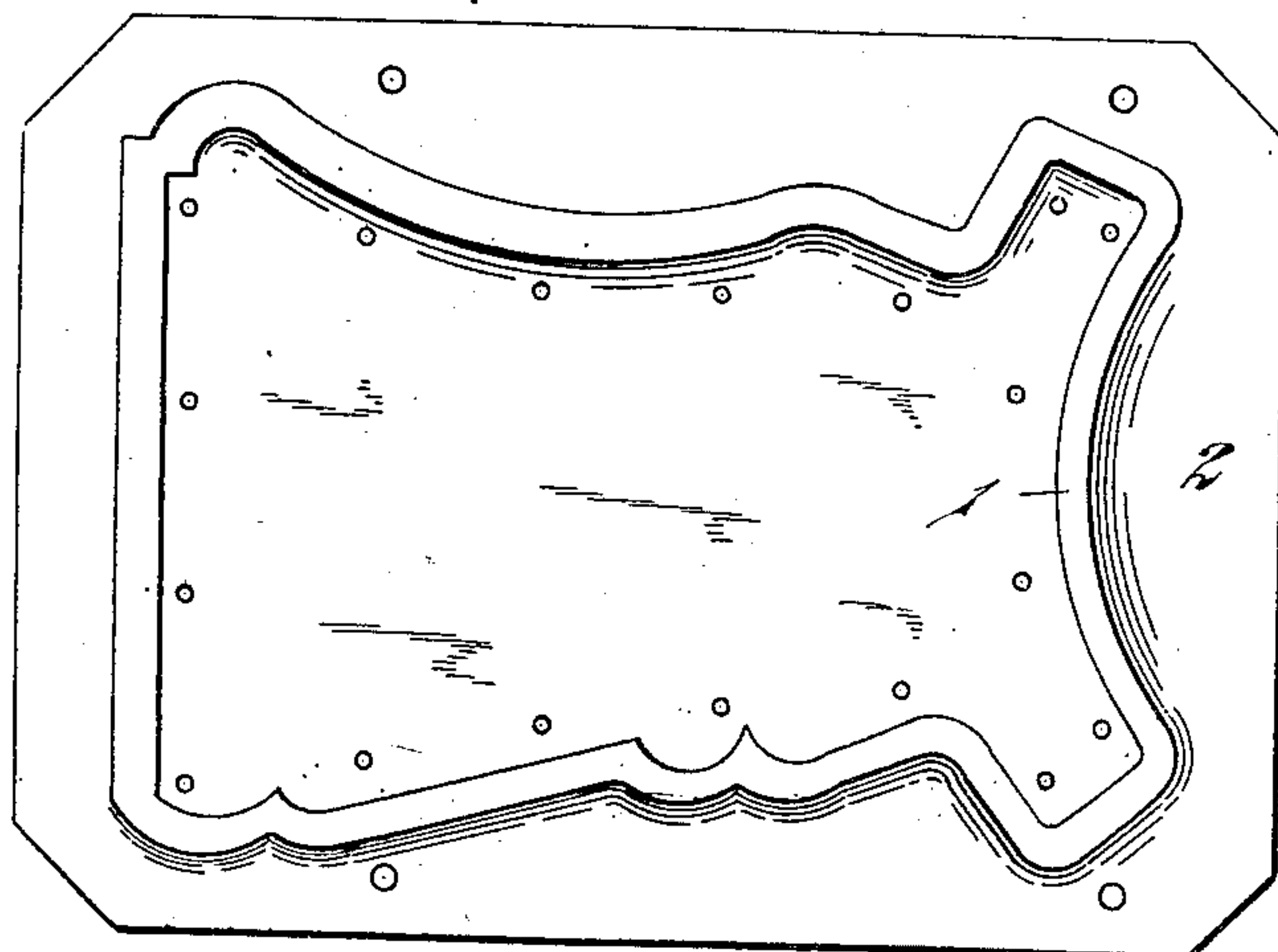


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

SAMUEL W. McKILLOP, OF YPSILANTI, MICHIGAN.

## DIE.

No. 862,581.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed April 30, 1906. Serial No. 314,520.

*To all whom it may concern:*

Be it known that I, SAMUEL W. McKILLOP, a citizen of the United States, residing at Ypsilanti, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Dies, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to dies for shaping metal; it has for its object an improved die for shaping metal; the die selected to illustrate the invention is one which is made for the purpose of shaping the end of a hopper for seed sowing machines, in which, in the completely shaped metal there is provision made for holding securely the ends of planks which form the sides of the seed hopper, and for forming integral with the plate which forms the end of the hopper projections which serve as supports or legs.

The die is made to be changed from a right to a left die, making it unnecessary to have two dies for the two ends.

In the drawings:—Figure 1, is a plan showing the die. Fig. 2, is a plan showing the punch. Fig. 3, shows the cutter or punch by means of which the blanks are shaped. Fig. 4, is a section on line *a—a* of Fig. 1. In this section both die and press are shown.

The cutter, which forms no part of the invention, and is shown in Fig. 3, has a steel rib 1, of proper shape secured to a base 2.

The die member consists of a cast iron back or base 3, arranged with ears 4, by means of which it can be secured to the bed of a press.

In casting the die member, there is formed a rib 5, raised from the general face of the base and having in rough outline the shape which is to be given to the finished article, with clearance entirely around for the insertion of steel facings hereinafter mentioned.

Parts that are to be concaved in the finished article are so formed by means of plates 6, appropriately bolted on the face of the bed plate, and the edges which are to be turned up sharp in the finished article are so formed by pressing the blank by means of the punch into a cavity in the die, whose edges are finished by steel plates 7. At 8, is indicated a movable edge finish, which can be taken from the left side L, and transferred to the right side R, in a cavity which is filled by a fillet 81 of steel. The facing steels 7 and 8, are secured in place by bolts 10 inserted through the rib 5, with their axes parallel to the base 3 and engaging for a turn or two in the steel facings 7 and 8.

I have found that one or two turns of a screw is sufficient to hold the facing in place.

At the corner 11 is indicated a die segment adapted to produce a curved extension of the finished article,

and inasmuch as this extension is found on only one side of the finished article, the section 11 is made removable and a corresponding reversely curved block can be inserted in its place and the die section can be inserted at the opposite corner in the cavity which is shown as filled by a block 12. A curve of larger radius, as the curve 13, is filled by a segment shaped fillet 14 secured in place by screws driven directly through it into the base. The same method of securing these curved pieces might be employed as that employed to secure the edges 7 and 8, but I have found it preferable to hold the curved pieces in the way described.

The part of the article to be used as legs for supporting the completed hopper is produced by pressing the metal into the narrow but deep openings between the blocks 14 and the edge 16. The metal blank is guided and held in place by guides 17 and 18.

The punch shown in Fig. 2, has a cast base 19 upon which there is secured a steel facing 26 of the proper form to fit the interior of the completed article, and there are provided removable blocks 15 and 25, which are adapted to be shifted to the right or left side as may be required.

The center part of the die member is normally independent of and free from or loose from the border or edging part, and in operation yields before the punch member. It is supported on pins 20 which extend downward through the base or bed of the press and rest upon a plate 21 that is itself supported upon rubber springs or cushions 22, and these in turn are supported upon an under plate 23, that hangs from the plate of the press; thus the entire center which forms the panel part of the hopper has a yielding relation with reference to the parts that form the turned up or flanged sides thereof.

What I claim is:—

1. In a die for shaping metal, in combination with a base having cast integral therewith a central plate portion from whose edges project integral straight side portions of varying size separated from one another by intervening spaces, removable wearing pieces cooperating with said side portions in forming therewith a complete outline of the shape desired, each one of said pieces being adapted to be exchanged in position with some one of the others, whereby the outlined contour is changed, substantially as described.

2. In a die for shaping metal, in combination with a base portion having isolated portions of its periphery raised above the plane of its center portion, a plurality of removable blocks of various shapes and sizes forming with said periphery portions a complete outline, each of said blocks being adapted to fit in either of two complementary spaces, whereby the outline of the die may be varied, and holding screws engaging through a portion of the base against the block adjacent thereto, substantially as described.

3. In a die for shaping metal, in combination with a base portion having selected portions of its peripheral edge integral therewith and projecting upwardly from the plane thereof, complementary removable portions forming

with said integral portions a complete outline in either one of a plurality of positions of said removable portions with respect to one another and to the integral portions, and holding screws engaging through the base portion and  
5 against said removable portions in planes parallel with that of the base, substantially as described.

4. In a die for shaping metal, in combination with a base having the peripheral portion of its working face in the form of integral upwardly projecting ribs separated  
10 from one another by intervening spaces, a plurality of removable blocks arranged in complementary pairs of

interchangeable contour with respect to the adjacent integral ribs, whereby the desired variety of angularity and curvature may be imparted to a blank by the use of the same base piece, substantially as described. 15

In testimony whereof, I sign this specification in the presence of two witnesses.

SAMUEL W. MCKILLOP.

Witnesses:

CHARLES F. BURTON,  
LOTTA LEE HAYTON.