J. MORGAN.

ADJUSTABLE TEMPLET FOR LAYING OUT BOILER-PLATES.

No. 195,721. Patented Oct. 2, 1877.

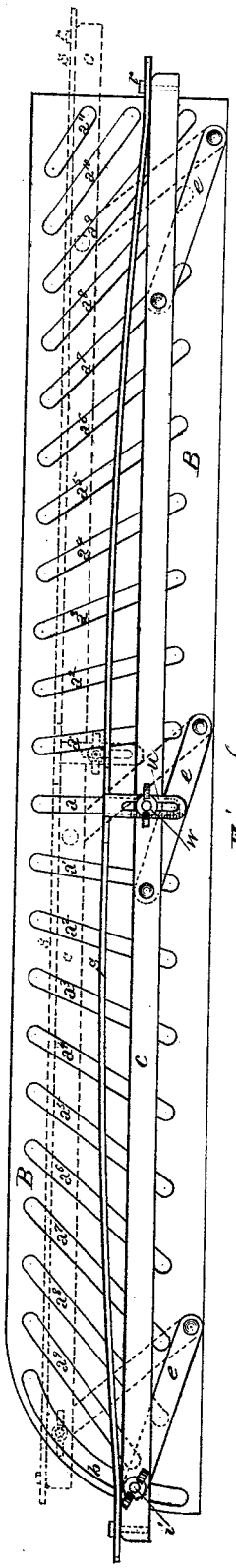

Fig. 1.

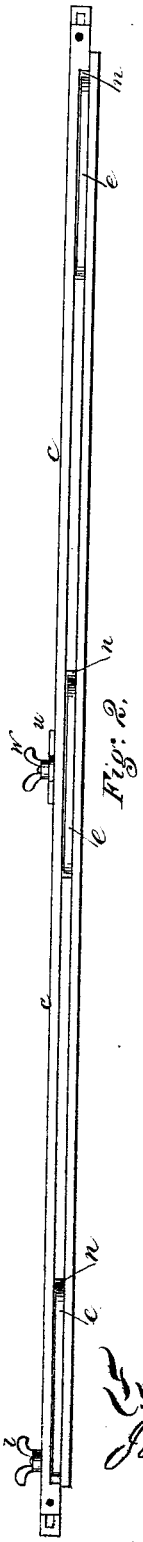

Fig. 2.

Witnesses.

H. Shook

C. L. Parker

Inventor

James Morgan

UNITED STATES PATENT OFFICE.

JAMES MORGAN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ADJUSTABLE TEMPLETS FOR LAYING OUT BOILER-PLATES.

Specification forming part of Letters Patent No. **195,721**, dated October 2, 1877; application filed August 27, 1877.

To all whom it may concern:

Be it known that I, JAMES MORGAN, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Adjustable Templets for Laying Out Boiler-Plates; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a top-plan view of my improved adjustable templet, and Fig. 2 is a rear elevation of the same.

In laying off boiler-plates for punching and riveting it has heretofore been customary for the workman to make use of a separate set of templets for each different size or form of boiler made.

My improved adjustable templet is designed to take the place of these various patterns or templets, as, by means of its possible adjustments, it may be used to lay off the different points for punching on all the various plates which come within the range of ordinary boiler-making, and it also may be used to advantage where regular or irregular points are to be laid off on either a straight line or a curve.

In the drawings, B represents a metallic plate of any convenient length and width with reference to the use for which the instrument is intended. In this plate are made a series of radial slots, a a^1 a^2 a^3, &c. These slots reach nearly across the plate B, leaving, however, a strip of metal along the edges to give the requisite strength to the plate, and they are laid off from some center outside the plate in such manner that one slot, as a, near the middle, shall be at right angles to the line of the length of the plate, and also so that they shall be equal distances apart on any given line at right angles to the middle slot a. While the distance between slots on such given line is uniform it is not uniform or the same on different lines, but decreases as such line is laid nearer the radial point of the slots.

A parallel bar, c, is pivoted by arms e to the face of the plate B, so that it may be moved back and forth across the face of the plate and always preserve the same relation to, or make the same angles with, the slots a a^1 a^2, &c. This parallel bar c may be kept in place by means of a pin and thumb-screw, i, set into the bar from the under side of the plate. As the bar is moved on its pivoted arms e, the pin i moves in the slot b. A head or collar on the lower end of the pin i bears against the under side of the plate and keeps the bar in place.

The arms e are pivoted at one end to the plate B, and at the other end to the bar c. Recesses n may be let into the under side of the bar c, in which the ends of the arms e are pivoted and operate. The bar may thus rest upon the face of the plate or near it. The length of the arms e should be such as to carry the bar c over the greater part of the length of the slots a a^1 a^2, &c.

The bar c may be used as a straight marking-edge, the slots indicating at what points along the same marks shall be made; but I prefer to combine with this bar c a device by which either a straight or curved marking-edge may be had, as desired. This device consists of a spring-bar, s, arranged along the face edge of the bar c, where it is held by pins r, which pass through slots in the spring-bar, and also by a slotted plate, u, which is fastened to the spring bar s at the middle of the bar, and passes back over the bar c, to which it may be bound by a thumb-screw, w. This plate u is graduated, as shown, and by means of it the spring-bar s may be set out from the parallel bar c, so as to make curves of different radii, along which the marking may be done.

In operation, the pitch or distance apart of successive points being determined, the parallel bar c is set so that the distance between the slots a a^1 a^2, &c., along the face of the spring-bar s shall correspond to that pitch. If these points are to be laid in a straight line, the spring-bar s is placed against the parallel bar c, as in dotted lines, Fig. 1, so as to indicate such straight line. If the points are to be laid out in some given curve the spring-bar s is adjusted in the manner described to represent such curve, as shown in full lines, Fig. 1.

If it is desired to change the pitch or distance between rivets, the parallel bar c is moved forward or backward over the plate B until the distance between the slots a a^1 a^2, &c., along the line of the spring-bar s corresponds to the desired distance or pitch. Two such positions

of the parallel bar *c* and spring-bar *s* are shown in Fig. 1—one in full lines, and one in dotted lines.

Any suitable marking-tool may be employed, as those now in common use.

My improved templet being adjusted as described, it is used by the workman in substantially the same manner as the forms now in common use.

I claim herein as my invention—

1. An adjustable templet, consisting of plate B, having a series of radial slots therein, and an adjustable parallel bar, substantially as described, whereby two or more series of points of different pitch may be laid out on a plate.

2. The combination of plate B, having a series of radial slots therein, an adjustable parallel bar, and an adjustable spring-bar, arranged substantially as described, whereby two or more series of points of different pitch may be indicated in lines of different curves.

In testimony whereof I have hereunto set my hand.

JAMES MORGAN.

Witnesses:
JNO. A. WILSON,
CLAUDIUS L. PARKER.