

APPLICATION FILED JUNE 18, 1908.

2 SHEETS—SHEET 1.

2 SHEETS—SHEET 1.



Inventor:  
by James W. Arrowsmith  
S. J. Cox Att'y.

998,225.

J. W. ARROWSMITH.  
ARCH SUPPORT ADJUSTER.  
APPLICATION FILED JUNE 18, 1908.

Patented July 18, 1911.

2 SHEETS—SHEET 2.

Fig. 3.

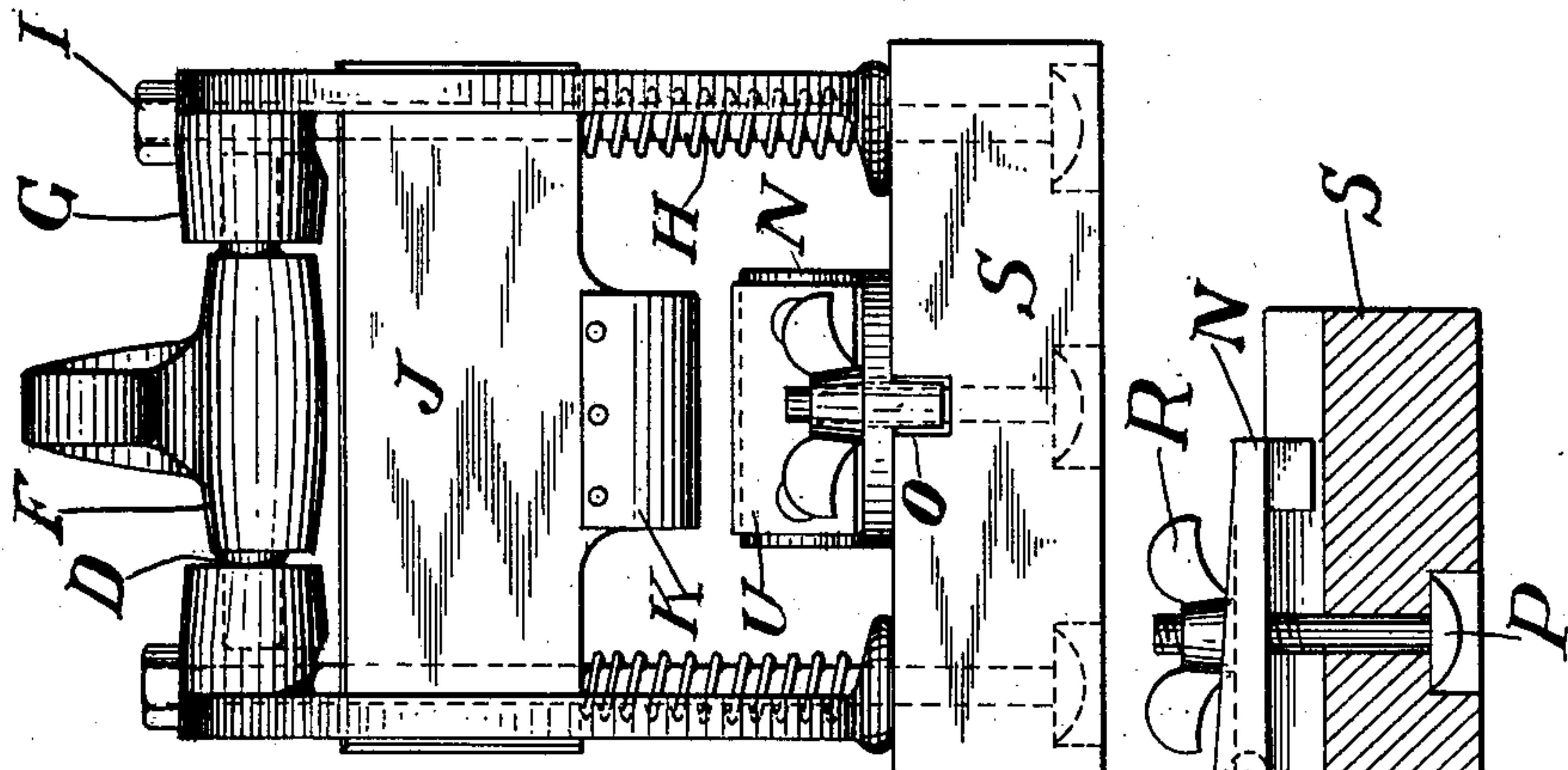
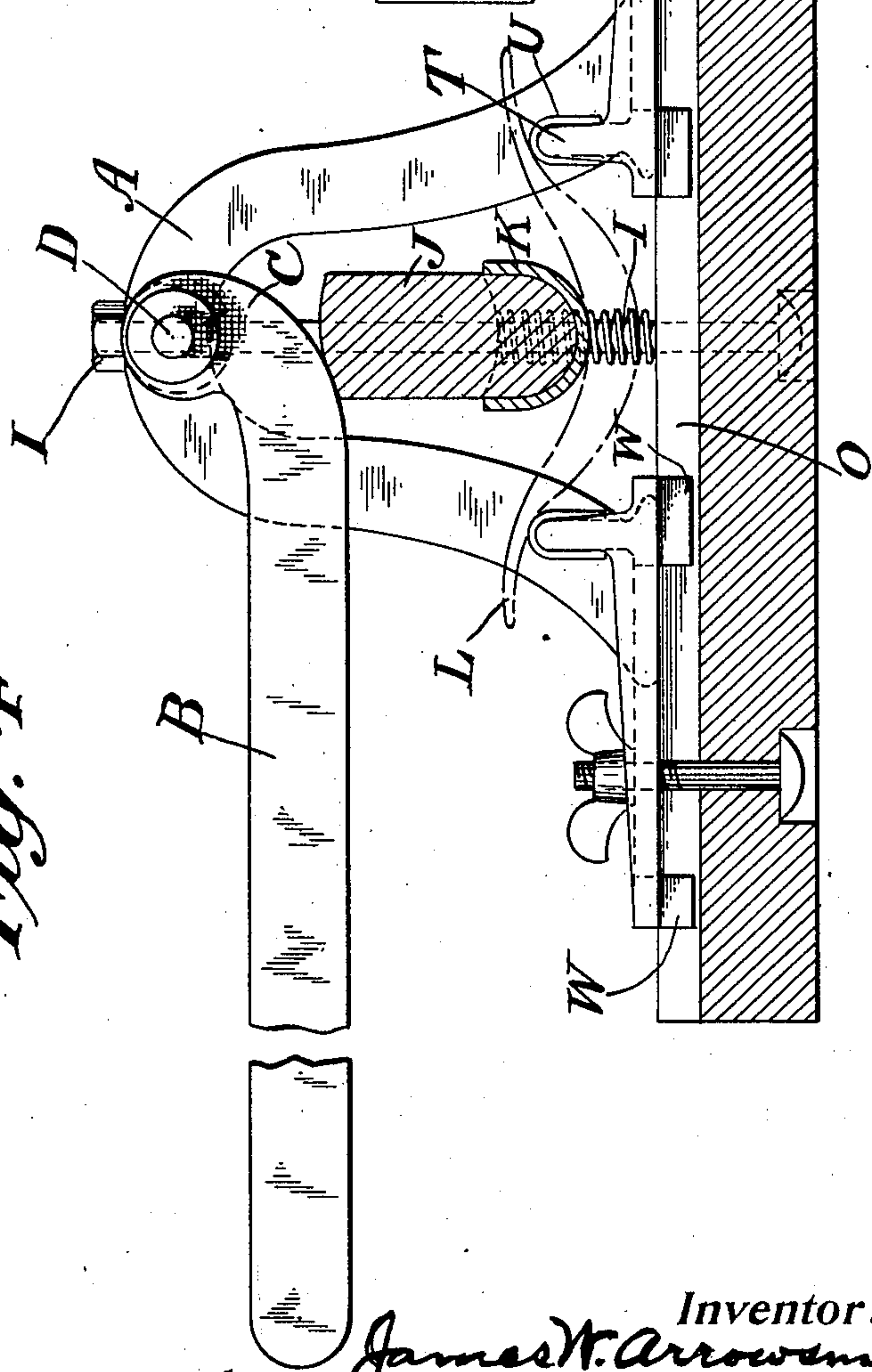


Fig. 4.



Attest:  
May Hughes  
Allan C. Mc Donnell.

Inventor:  
James W. Arrowsmith  
S. J. Cox. Att'y.



# UNITED STATES PATENT OFFICE.

JAMES W. ARROWSMITH, OF MORRISTOWN, NEW JERSEY.

## ARCH-SUPPORT ADJUSTER.

998,225.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed June 18, 1908. Serial No. 439,111.

*To all whom it may concern:*

Be it known that I, JAMES W. ARROWSMITH, a citizen of the United States, residing at Morristown, in the county of Morris and State of New Jersey, have invented a new and useful Improvement in Arch-Support Adjusters, of which the following is a specification.

The improvement relates to devices designed for the special purpose of bending and adjusting metallic plates for supporting the instep arch of the human foot and the objects of the improvement, among others, are to provide means whereby the adjustment of such plates to the contour of the foot arch may be quickly and accurately made without injuring the metal or the covering of non-metallic material usually applied to the plate; to provide a simple, compact and durable adjusting device so constructed and arranged that the arch support may be placed therein and operated upon in various ways; and to thus dispense to a great extent with the use of pliers or the like in accomplishing the adjustment.

The improvements consist in the combination, construction and arrangement of parts hereinafter described and claimed and illustrated in the accompanying drawings. In the said drawings, Figure 1 is a plan of an arch support adjusting device embodying the improvements; Fig. 2 is a side elevation of the same; Fig. 3 is an end view; Fig. 4 is a partial vertical longitudinal section.

It should be understood that arch supports of the kind designed to be operated upon by the device which is the subject of this application are designed for the relief and cure of the disease of the bones of the human foot commonly known as "flatfoot," which disease manifests itself in a falling or flattening of the bony arch of the foot, comprising the calcaneum or os calcis, the astragalus, the cuneiform bones and the metatarsal phalanges, and that the treatment of all cases which have advanced beyond the incipient stages involves the adjustment of the arch support to the depressed contour of the foot arch and then the gradual raising of the arch of the plate, and consequent raising of the foot arch, longitudinally and transversely, when required, by adjustment of the plate from time to time as tolerance is established. It will therefore be apparent that great accuracy and precision are often

required in the adjustment of the plate, and that this adjustment must be made at different parts from time to time, depending upon the position of the bones comprising the arch of the foot which is being treated.

The base plate S is of wood or other suitable material and of greater length than breadth, and on either side of it near the middle thereof are mounted standards A of substantially U form inverted. Between the apices of these standards the cam lever B is mounted by means of the bosses G which have bearing recesses to receive the pintles D of the hub F. The bosses G have screw bolts I extending through them near the standards A and passing down and entering the base S, and between these bolts a block J is mounted by having the said bolts passed loosely through vertical bores near its ends, so that it may move up and down in a vertical plane thereon. Helical springs H are strung on the bolts I between the block J and the base and serve to raise the said block to its uppermost position after it has been depressed, and to hold it in such position normally. The block J has a boss M extending downward from its lower side, and this boss is provided with a cover or cushion K of leather or other suitable non-metallic material.

The base S is provided with a longitudinal groove O for the purpose of guiding the sliding plate N which has feet or tongues W at its ends projecting into said groove. One of these plates is located at each end of the base and they are fixed in all positions to which they may be moved by means of a bolt P extending through slots V therein and provided with a thumb-nut R. Blocks T of substantially the same width as the boss K on the block J are located at the inner ends of the sliding plates N, and are provided with covers or cushions U, and upon these blocks the support is placed when it is to be adjusted, as shown by dotted lines in Figs. 2 and 4. It will be seen that the blocks U may be moved longitudinally to vary the distance between them or their respective positions with reference to the block J to any desired extent, and this adjustment not only accommodates the device to arch supports of different sizes but permits the plate of the said support to be bent on any desired arc and at any part.

The cam C is so formed that when the lever B is oscillated between its position in



Fig. 2 and its position in Fig. 4 it forces the block J down or permits it to rise under the action of the springs H, and it is through this cam that pressure is applied to the plate of the support to effect the desired adjustment. The upper surface of the block J is curved to afford a proper contact surface for the cam, and the recess of each boss G which receives the pin D is open at the bottom—as shown where the top of the standard A is cut away in Fig. 2—so that the cam lever may be removed and used as a mallet for the purpose of bending the extreme outer edges of the plate, or conveniently placed for packing and shipping.

What I claim is:—

1. In a device of the character described the combination of a cam lever, suitable supports upon which said lever is mounted, comprising standards having recesses in their upper parts and openings leading from the said recesses at an angle thereto and projections on said lever adapted to engage said recesses, a vertically reciprocating block, a spring for holding said block normally in its upper position, the construction and arrangement of the lever and block being such that the block is caused to descend by a movement of the lever, a plurality of sliding blocks located below the normal position of the first-named block and outside the plane of its reciprocation, and means for moving the said blocks.

2. In a device of the character described the combination of a cam lever, suitable supports upon which said lever is mounted, comprising standards having recesses in their upper parts and openings leading from the said recesses at an angle thereto and projections on said lever adapted to engage said recesses, a vertically reciprocating block, a spring for holding said block normally in its upper position, the construction and arrangement of the lever and block being such that the block is caused to descend by a movement of the lever, a plurality of sliding blocks located below the normal position of the first-named block and outside the plane of its reciprocation, means for moving the said blocks comprising plates on which said blocks are mounted, a base, a slot in the said base, and projections on the said plates engaging said slot.

3. In a device of the character described the combination of a cam lever, suitable supports upon which said lever is mounted, comprising standards having recesses in their upper parts and openings leading from the said recesses at an angle thereto and projections on said lever adapted to engage said recesses, a vertically reciprocating block, a spring for holding said block normally in its upper position, the construction and arrangement of the lever and block being such that the block is caused to descend

by a movement of the lever, a plurality of sliding blocks located below the normal position of the first-named block and outside the plane of its reciprocation, means for moving the said blocks independently and securing them in different positions, comprising plates on which the said blocks are mounted, a base, a slot in the said base, projections on the plates engaging said slot, a bolt passing through said base, a slot in each plate through which the said bolt passes, and nuts on said bolts on the sides of the plates opposite the base.

4. The combination of a cam lever, a hub adjacent to the cam portion of said lever, pins extending from said hub at right angles to the plane in which the lever moves, a plurality of standards, a boss projecting from each standard, a recess in each of the said bosses provided with an opening extending laterally from the said recesses to the outside of the bosses, bolts connected with the standards and extending away from the hub of the lever, a block adapted to move on said bolts, and means for normally holding the said block in a position adjacent to the cam portion of the lever.

5. The combination of a cam lever, a hub adjacent to the cam portion of said lever, pins extending from said hub at right angles to the plane in which the lever moves, a plurality of standards, bosses projecting from said standards, recesses in said bosses to receive the pins each provided with an opening extending at an angle to its bore to the outside of said boss and at an angle to said pins, screw bolts extending through the said bosses between the recesses and the standards, a base which receives the said bolts and thereby supports the standards, a block adapted to move vertically on the said bolts, compression springs on the bolts between the block and the base, a downwardly extending boss upon the block between the bolts, a non-metallic shoe on the said boss and a plurality of horizontally adjustable blocks located on either side of the first named block, and independent means for securing said blocks in different positions.

6. In a device of the character described the combination of a cam lever, projections extending from the said lever, standards, recesses in each standard receiving the projections, to form a pivot or fulcrum, a reciprocating block in contact with said lever adjacent to its fulcrum, a spring pressing the said block against the lever, and an opening in one of the recesses which receives the projections of the lever extending to the outside of the portion of the standard in which the recess is formed in the direction of the block.

7. The combination of a detachably mounted lever, a reciprocating block adjacent to one end of said lever and adapted to be

pressed in one direction by the oscillation  
thereof, an adjustable support for an arch  
supporter on the side of the said block op-  
posite the lever and a shoe on the said block  
5 adapted to be pressed against said supporter  
for the purpose of bending the same, the  
construction and arrangement being such

that the block and support are in contact  
with the said supporter at different points.

JAMES W. ARROWSMITH.

Witnesses:

EDW. A. PAFTE,

LEROY CREVELING.

---

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

---