

(No Model.)

J. H. ALKER.

DIE FOR FORMING COUPLING PINS.

No. 245,691.

Patented Aug. 16, 1881.

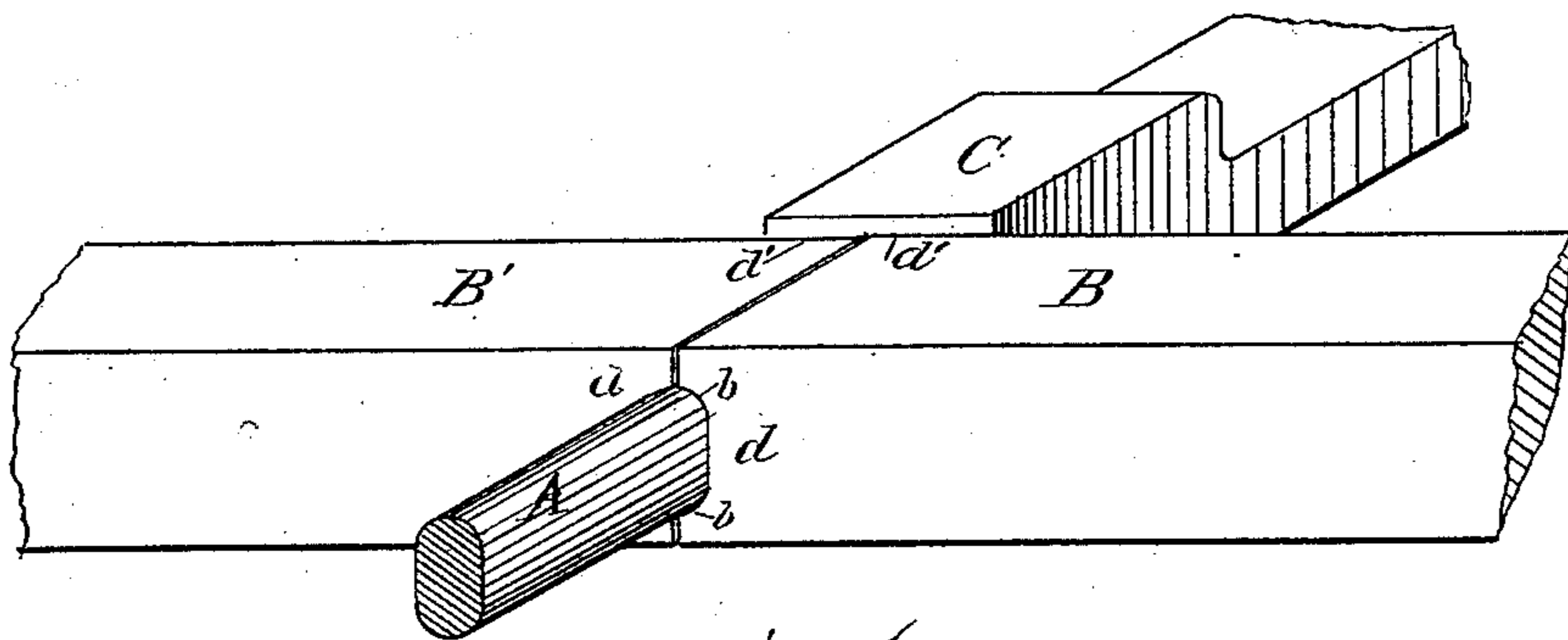


Fig. 1.

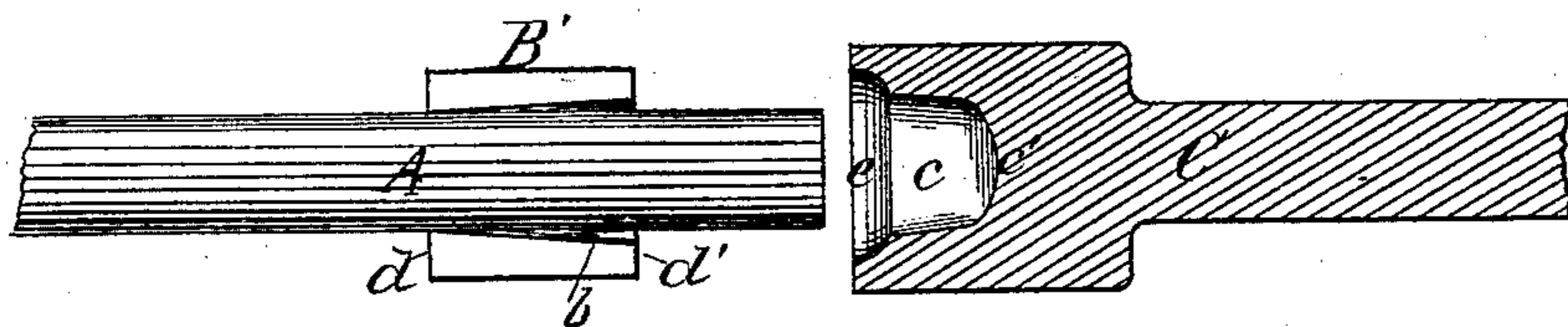


Fig. 2.

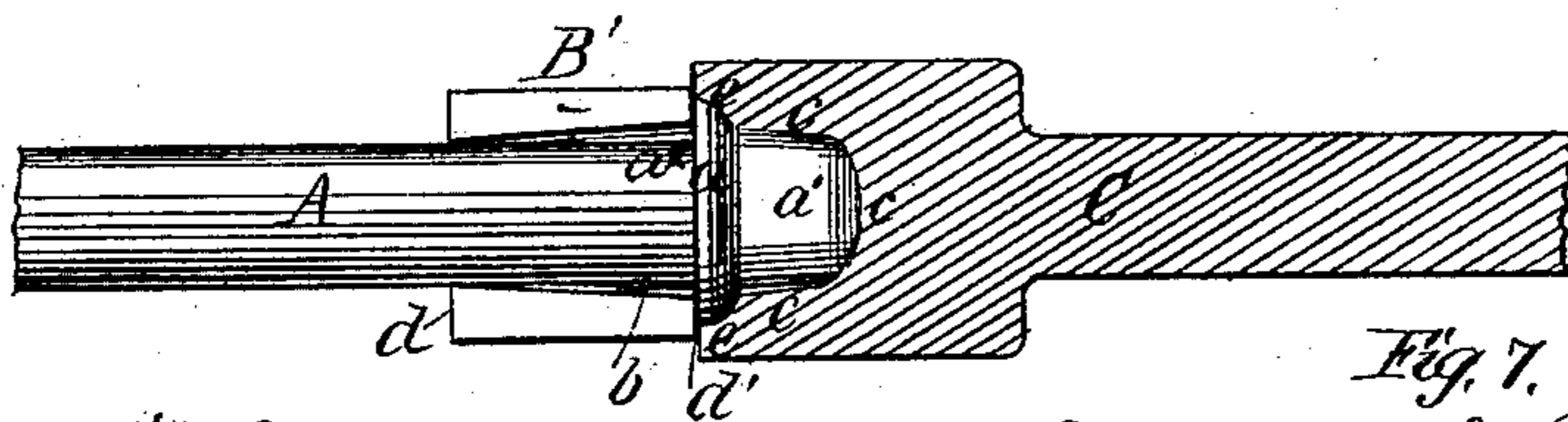


Fig. 3.

Fig. 6.

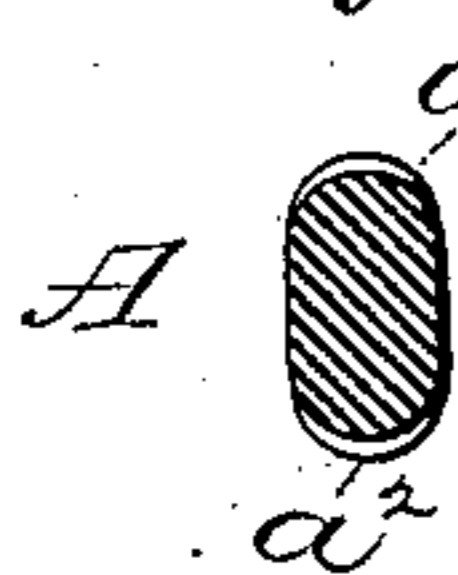


Fig. 7.

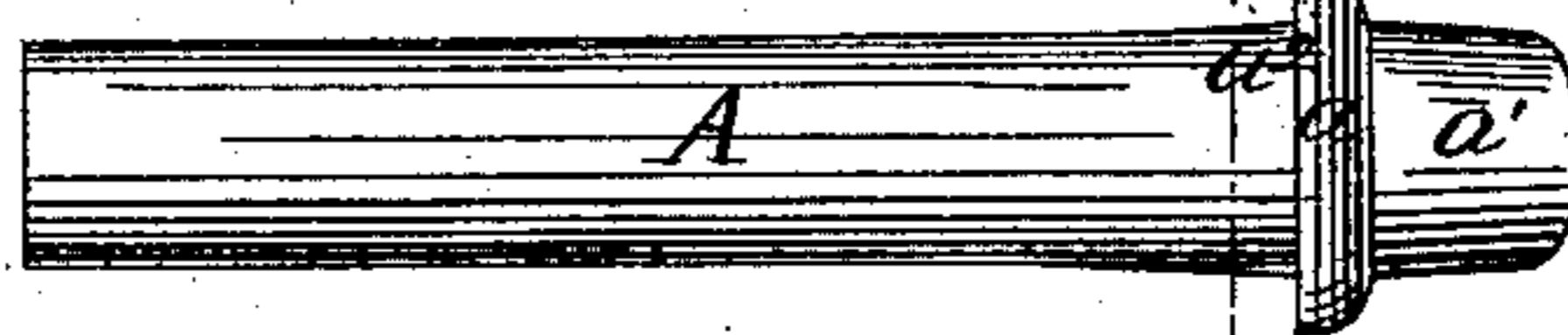
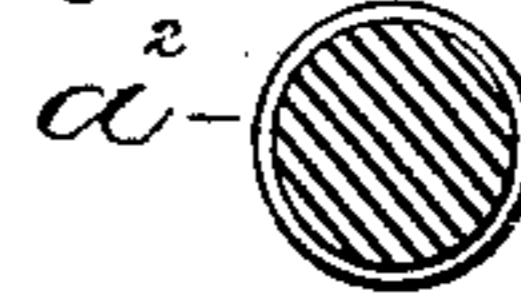
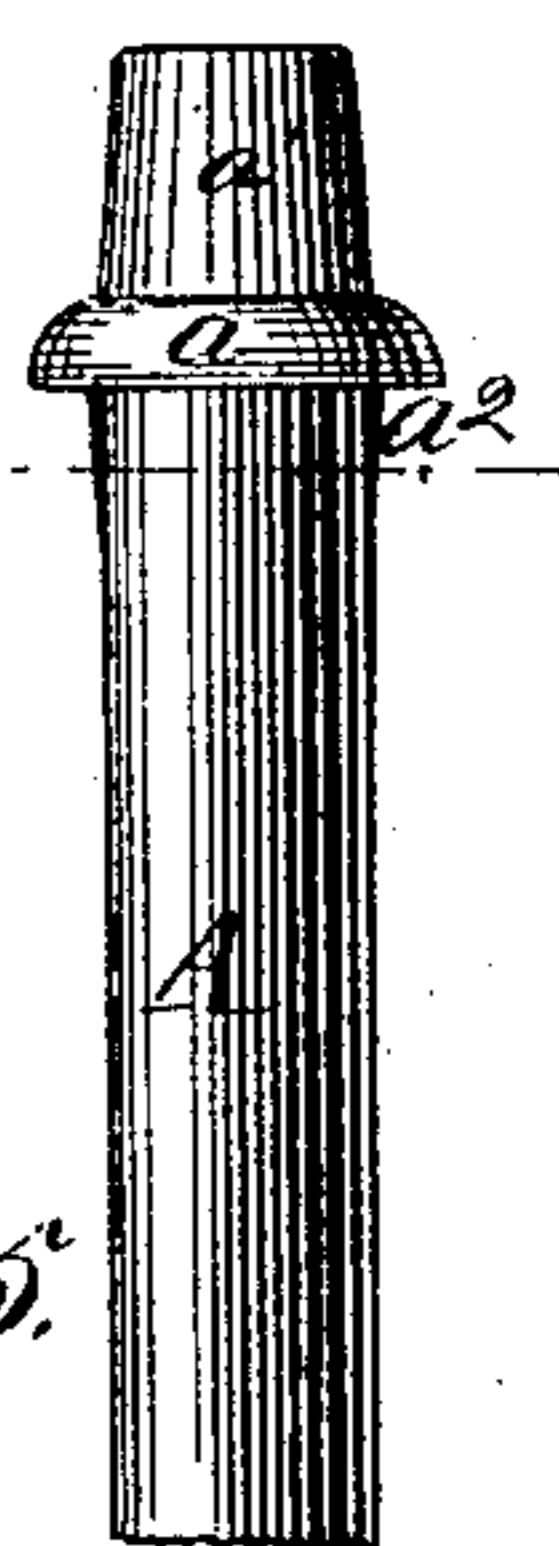


Fig. 4.

Fig. 5.



Witnessed
C. L. Parker
Francis L. Clark

Inventor John H. Alker
By Attorney George H. Christy

UNITED STATES PATENT OFFICE.

JOHN H. ALKER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO JONES & LAUGHLINS, OF SAME PLACE.

DIE FOR FORMING COUPLING-PINS.

SPECIFICATION forming part of Letters Patent No. 245,691, dated August 16, 1881.

Application filed May 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ALKER, of Pittsburgh, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Dies for Shaping and Forming the Heads and Shoulders of Coupling-Pins; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a view, in perspective, of my improved dies for forming a shoulder and head on coupling-pin blanks. Figs. 2 and 3 show sectional elevations of the dies and blank in different positions of working; and Figs. 4 and 5 show different forms of blanks, illustrative of the work performed by my improved dies, Figs. 6 and 7 showing cross-sections of the blanks in Figs. 4 and 5 respectively.

My present invention relates to dies for upsetting the ends of coupling-pin blanks and forming thereon an enlarged shoulder, *a*, and head *a'*, as illustrated in Figs. 4 and 5. In forming such shoulder and head I make use of two griping-dies, *B B'*, in the adjacent faces of which are formed the parts *b b* of a griping-cavity. At the rear edge, *d*, or toward the point end of the blank, this cavity *b* conforms in size and shape to the blank *A*. Toward the opposite edge, *d'*, or the edge toward the end of the blank to be upset, the griping-cavity is widened or enlarged, so that part or all of the walls of the cavity incline away from the blank when first griped, or before the latter is upset, thereby affording space between the griping-dies, within which the stem of the blank below the shoulder is upset or enlarged, as at *a*². If the body or stem of the pin or blank be flattened or oval in form in cross-section, the walls of cavity *b* are, by preference, inclined from *d* to *d'* on the edges only or principally, so that the enlargement of the pin at *a*² is principally in the direction of its edges, as in Fig. 4; but if round pins are required, the taper from *d* to *d'* may be uniform on all sides of the cavity, giving a uniform enlargement in size, as at *a*², Fig. 5. The advantages secured in both cases

are substantially the same—that is, the pin is strengthened and better adapted to fill the upper hole in the draw-bar head of the car, and also by the upsetting of the metal within the griping-dies, as described, the blank is more easily prevented from yielding between such dies during the final and heaviest compression imparted in the operation of forming the head and shoulder. These dies *B B'* also serve as an anvil against which the under or flat face of the shoulder *a* is pressed and formed. They should therefore be strong and well secured. One die, *B*, is secured in place, by preference, upon a horizontal table or bed, and the other die, *B'*, is moved horizontally toward and from die *B*, and for this purpose it may be mounted in and operated by any suitable or well-known mechanism adapted to bring such die against and hold it upon the interposed blank *A*, as in Fig. 1, with the required power. Several forms of such mechanism are in common use, and need not be described in detail.

In combination with the griping-dies *B B'*, I make use of a solid upsetting-die *C*, in the end or head of which is formed a sunken cavity, *c*, having depth and form adapted to produce the desired head *a'*, which form corresponds approximately to that of the stem of the blank—that is, in oval pins, like Fig. 4, the head *a'* retains substantially the same flattened or oval form in cross-section as the stem, and its width and length are such as to permit punching or otherwise forming a hole therein in the usual manner for convenience of attachment and handling. In round pins the cavity *c* is shaped with reference to forming a head round in cross-section and having a length somewhat in excess of its diameter, as at *a'*, Fig. 5. Such cylindrical or tapered head may be subsequently worked into the usual rounded knob or top in common use, by means which form the subject-matter of a separate application for patent. At the rim or mouth of this cavity *c* is made a countersunk depression or enlargement of the cavity *c*, of concave form, adapted to shape the rounded upper surface of shoulder or enlargement *a*.

The die *C* is mounted in the same plane as

dies B B', it and may be operated by any suitable or well-known power devices, which are adjusted and arranged to carry the working-face of this die against the adjacent edges d' of dies B B', when the latter are gripped upon the blank. In so doing the end of the properly-heated blank is caused to enter cavity c , and bearing or abutting against the bottom c' is upset, filling the cavity or space between the griping-dies and producing the enlargement a^2 , as stated; also, the metal is upset within and fills cavity c in die C, forming the head a' and shoulder a , the latter being given a flat under face by the edges of dies B B', and a rounded upper face by the countersink e .

By methods of manufacture heretofore practiced, considerable skill was necessary to enable the workman to produce a good shoulder and head on a pin-blank of either oval or round form; but with dies made and operated as above described such work can be done by unskilled or cheap laborers with rapidity and

with great uniformity and perfectness of finish, and in these respects my improved dies are an improvement in the art of making coupling-pins, and lessen considerably the cost of manufacture.

I claim herein as my invention—

The griping-dies B B', having griping-cavities b therein, which increase in width or size toward the end of the blank to be upset, in combination with the upsetting and shaping die C, having sunken cavity c in its working-face with countersink e at the rim or mouth of such cavity, such dies being adapted, substantially as described, to upset and shape a shoulder, a , head a' , and enlargement a^2 on a coupling-pin.

In testimony whereof I have hereunto set my hand.

JOHN H. ALKER.

Witnesses:

R. H. WHITTLESEY,
C. L. PARKER.