

J. P. AVERY.
METHOD OF SECURING STONES IN FOUNDATIONS.
No. 10,819. Patented Apr. 25, 1854.

Fig. 2.

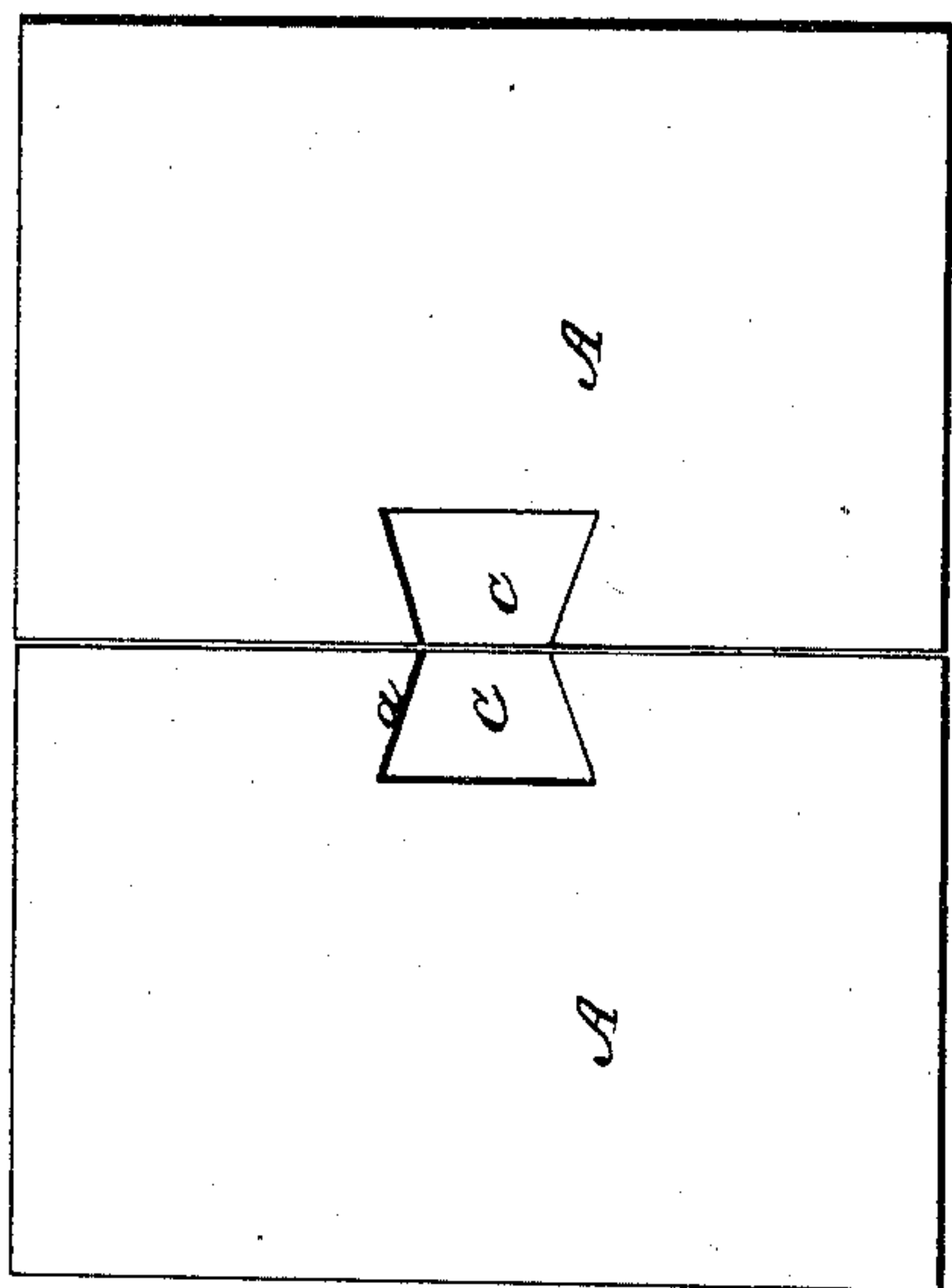


Fig. 1.

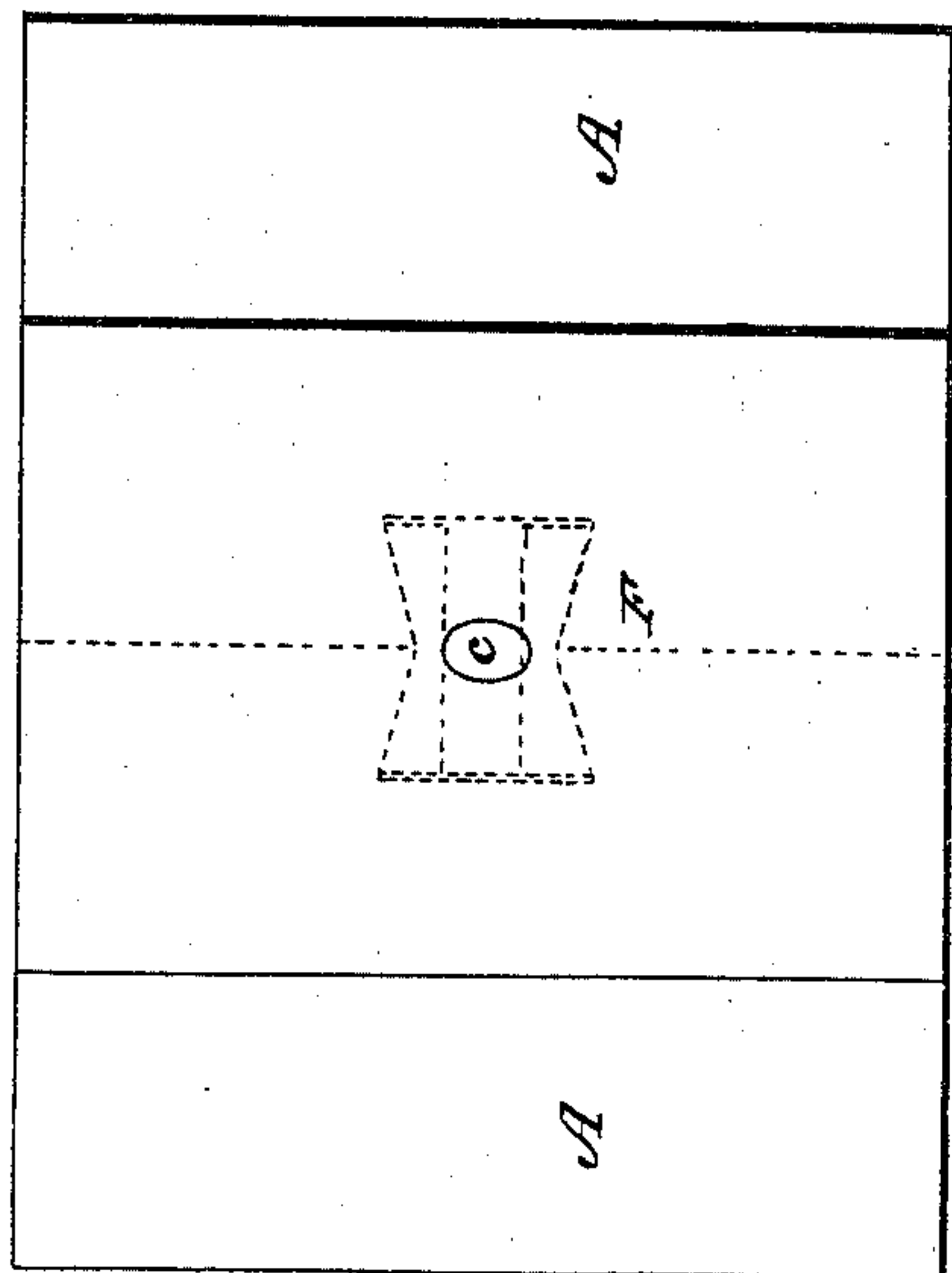


Fig. 4.

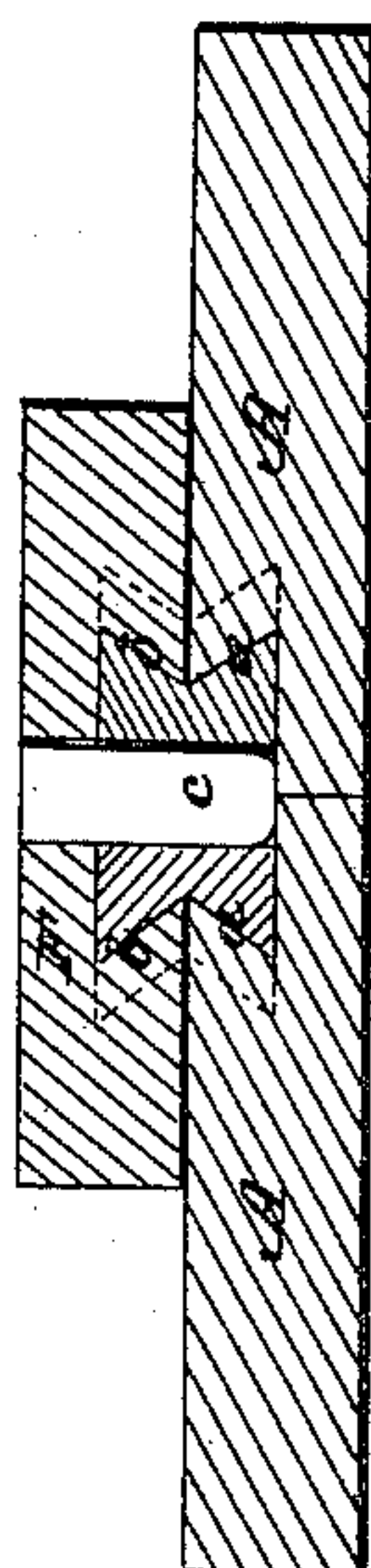


Fig. 6.

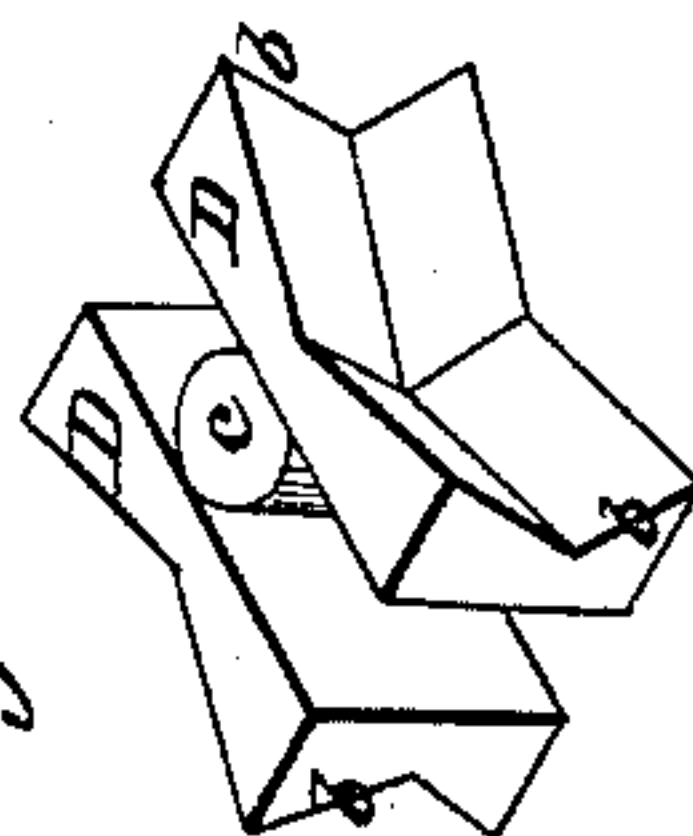


Fig. 3.

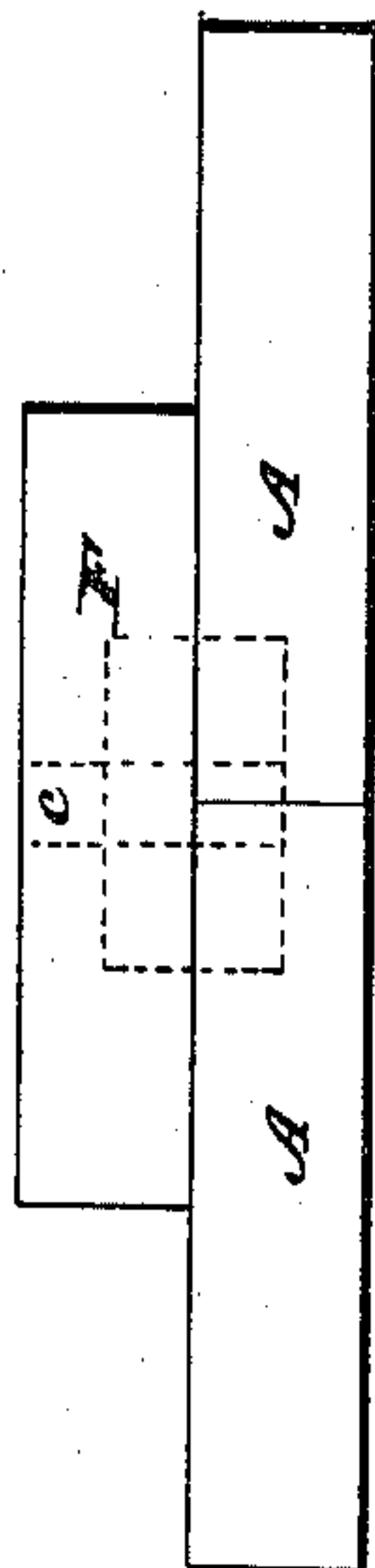
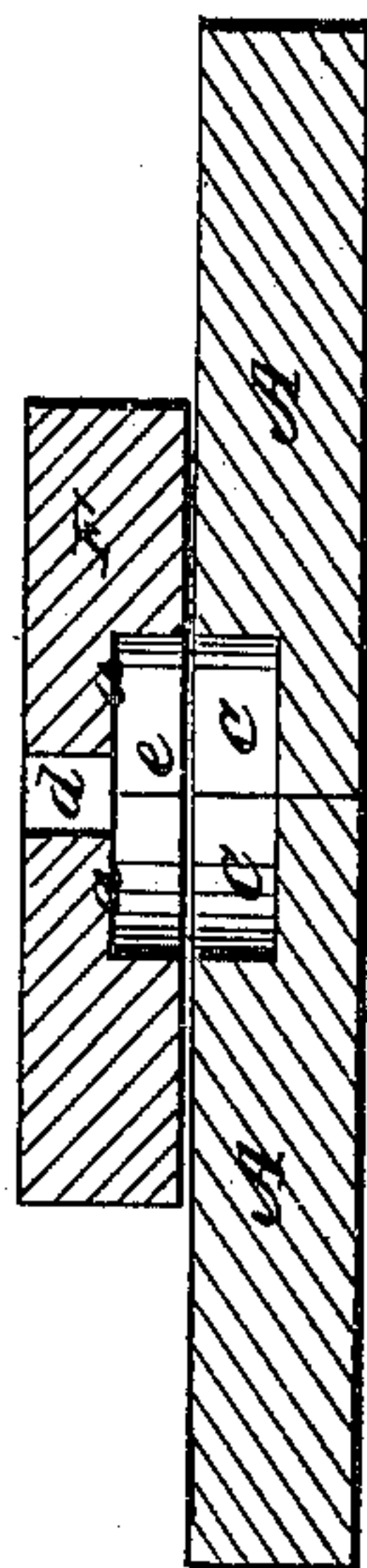


Fig. 5.



UNITED STATES PATENT OFFICE.

JOHN P. AVERY, OF STONINGTON, CONNECTICUT.

MODE OF SECURING STONES IN FOUNDATIONS.

Specification of Letters Patent No. 10,819, dated April 25, 1854.

To all whom it may concern:

Be it known that I, JOHN P. AVERY, of Stonington, in the county of New London and State of Connecticut, have invented a certain new and useful Method of Uniting or Locking Stones Together in Building Lighthouses, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan, showing one stone placed upon two others and the whole locked together—the dotted lines showing the shape of the locks or dovetails. Fig. 2, is a plan showing the stone as it appears before being locked together. Fig. 3, is a side view showing the stones locked together. Fig. 4, is a vertical section of the same—showing plainly the manner in which the dovetails or locks are employed. Fig. 5, is a vertical section showing the stones prepared and ready for the dovetails to be inserted. Fig. 6, is a perspective view showing the dovetails or locks and the manner in which they are forced apart, when it is desired to lock the stones together.

My improvement has reference to a well known method of uniting masonry in laying the foundations of light houses and other structures exposed to surf or water, by dovetail joggles and dowels, or keys driven into or between the stones for binding the several stones in their respective courses and the courses together.

To enable other skilled in the art to make and use my invention I will describe it more fully:

A, A, represent the bottom stones of a foundation, for instance; in which dovetail slots C, C, of a suitable depth are cut; or half that of the dovetails, the said slots being open on the sides which are placed opposite each other as seen in said Fig. 2, and made wider at their bottom than at their top; thereby forming an inclined projecting lip *a*, under which the flanges *b b*, of the dovetails D, D, fit snugly—when the key *c*, or its equivalent is driven between the pieces forming the dovetails.

In Figs. 1, 3, 4 and 5, a stone F, is represented placed on top the foundation stones A, A, and the whole secured together, this stone has a slot *e*, similar to those C, cut in its bottom surface, and of the same depth as

half the height of the dovetails, thus it will be seen that when these stones are put together, the dovetails will hold equally on each as they fit the same depth in one as in the other. After these dovetails have been placed in the bottom slots, the top stone is placed over them and they caused to fit in its slot *e*, and after this is done the key *c*, or its equivalent which passes through the hole *d* in the top stone is driven between them and they consequently forced apart, which causes their flanges to fit snugly and securely under the inclined projecting lips *a, a*. By this arrangement of the double wedged flanged dovetails, constructed as described, and uniting the two adjoining stones in the lower course with the stone which breaks joint with them in the upper course, the stones in the two courses are firmly and expeditiously fitted together, the specified flange form of the dovetails—when the key is driven home—serving most effectually to draw the stones in the two courses together, face to face, thus making tight the horizontal joint between the courses, and the same operation of driving home the key simultaneously, making tight the vertical or end joint as specified, so that the two courses are made expeditiously to become one solid mass, as it it were, the flanged dovetails acting as clamps to keep the two courses together.

Double dovetail joggles, I know have been used before to connect stones together, as in the building of the "Eddystone" and "Bell Rock" light houses, and in other instances, but these have generally been connecting links only between the stones, and they have not been so constructed and arranged as that, by the one operation of driving home the key, as by my arrangement, the one stone of one course, and the two stones of the adjoining course have been tightly drawn together, as well as the vertical breaks or joints tightened up, thus expeditiously tightening all the joints and making one solid mass of the two courses. In the structures above referred to, however, dowels have before been used for uniting the two courses, and tightening up the vertical joints, but they have simply been wooden plugs or split keys with loose wedges let into them, so that, upon driving down the dowel through the one stone of the top course, and into between the two adjoining

stones in the lower course, the lower edge of the dowel would come in contact with the bottom of the recesses in the lower stones, and split or open the dowel, so as to cause it to bear hard or press against the sides of the recesses, while a wedge driven in at the top end of the dowel would spread it there, and thus the dowel, by its friction or pressure, by the one operation, be made to tie the courses together as well as tightening up the vertical joints, but such an arrangement gives a far less reliable tie than mine, as in the one instance, the tie is produced by friction or pressure alone, and the least slackening of the dowel would break the binding of the two courses together, as regards vertical lift, while the flange form of the dovetails I employ, by lapping within or under the projecting lips of the dovetail recesses, would still preserve the tie of the two courses together, even if the key were to become loose, and a firmer, more durable, and closer tie of the stones in the two courses, is more expeditiously obtained.

I do not claim the use of dowel joggles of double dove-tail form, for uniting stone together, as such have before been used, nor yet do I claim making tight the vertical

joints, and binding the two courses together by a dowel or key, driven through the stone in the top course, and into or between the stones in the under course, as such has before been done, by wedges let into the ends of the dowel, and serving to spread it to make tight the joints in and between the courses; but

I do claim as new and useful, and desire to secure by Letters Patent—

The combination and arrangement herein specified of the dovetails, D, D, and tightening key, *c*, or its equivalent, when the said dovetails are constructed of taper flange form fitting within or under projecting lips to the dovetail recesses in the stones to draw and clamp the two courses together, the said dovetails fitting within the one stone of the one course, and the two stones of another course, and being driven home by the intervening key, to make tight the vertical and horizontal joints in the two courses, and to clamp the two courses together, firmly and permanently, as specified.

JOHN P. AVERY.

Witnesses:

GURDON W. AVERY,
JAMES E. AVERY.