

H. VAN CAEYSEELE.
BUILDING BLOCKS AND WALL.
APPLICATION FILED OCT. 13, 1908.

955,230.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 1.

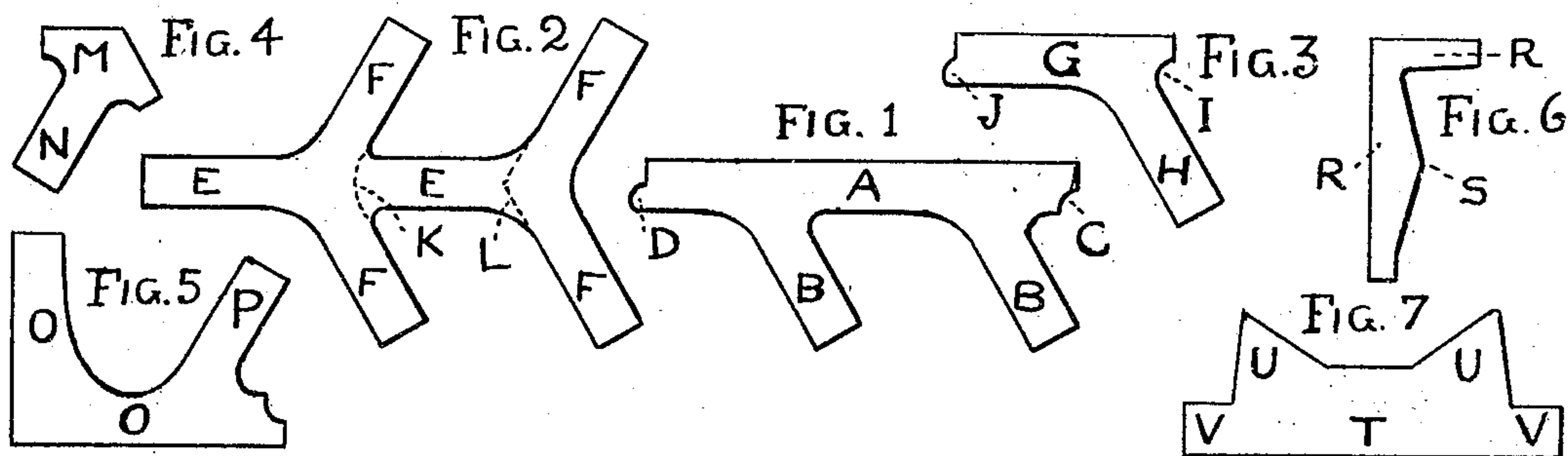


FIG. 8

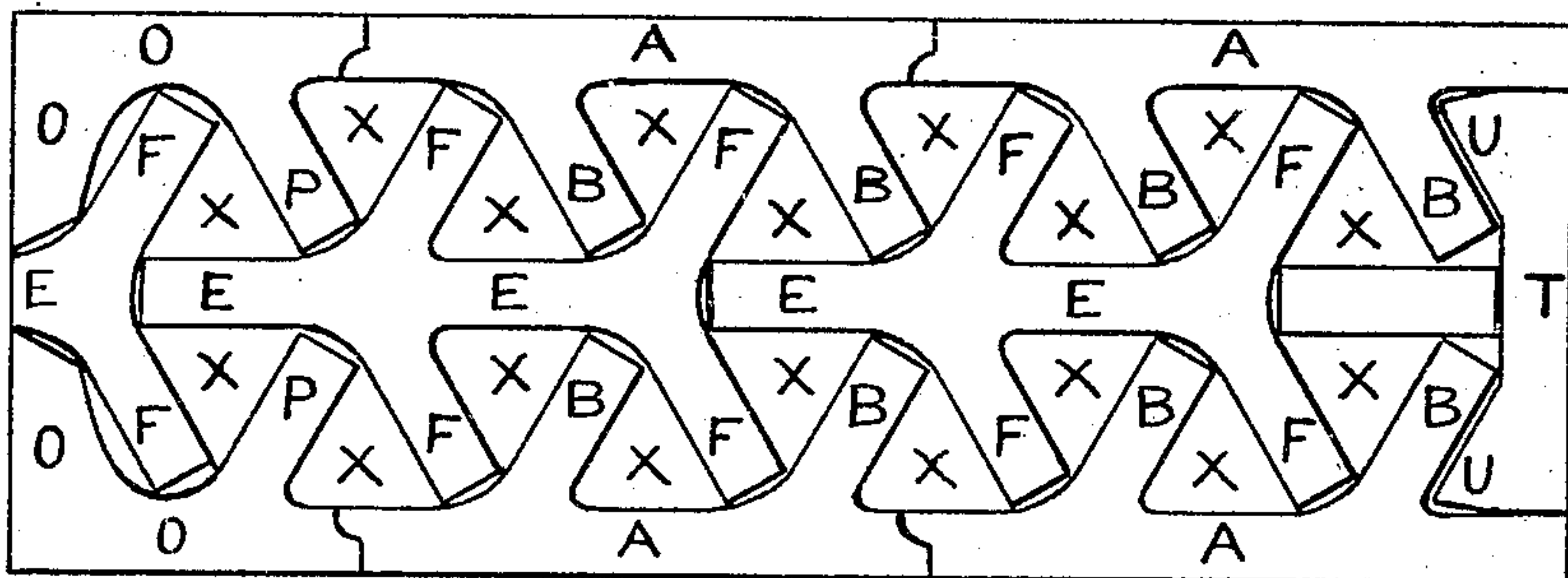


FIG. 9

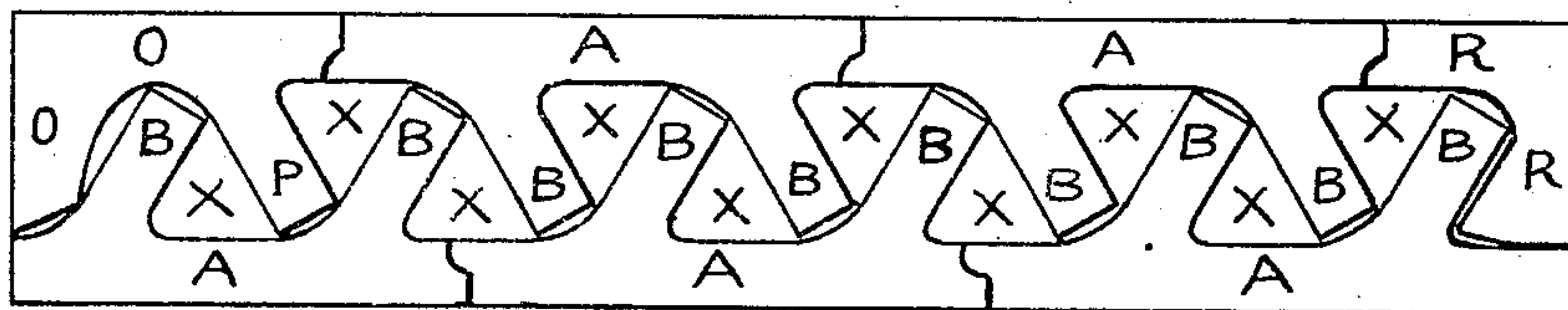
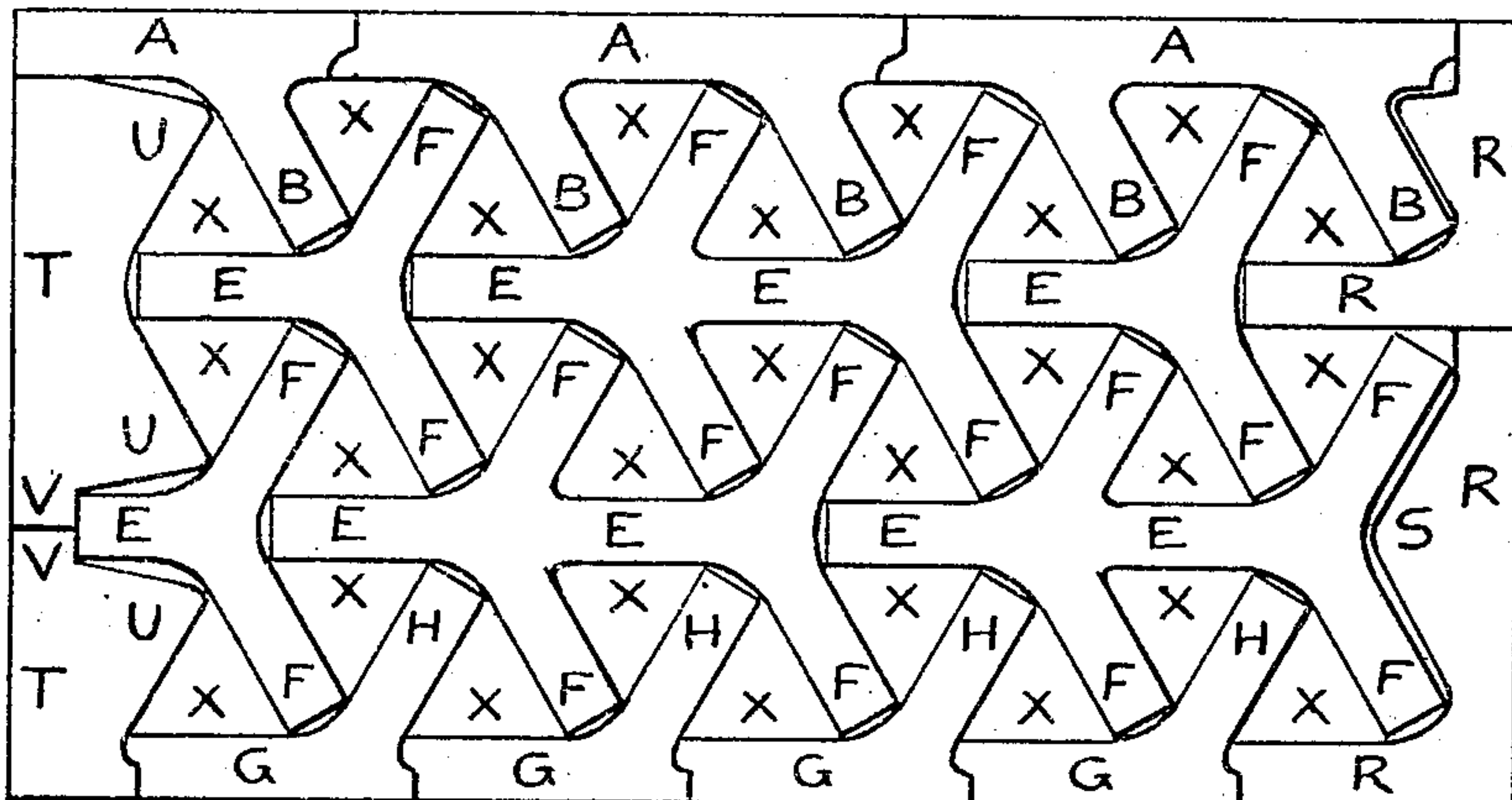


FIG. 10

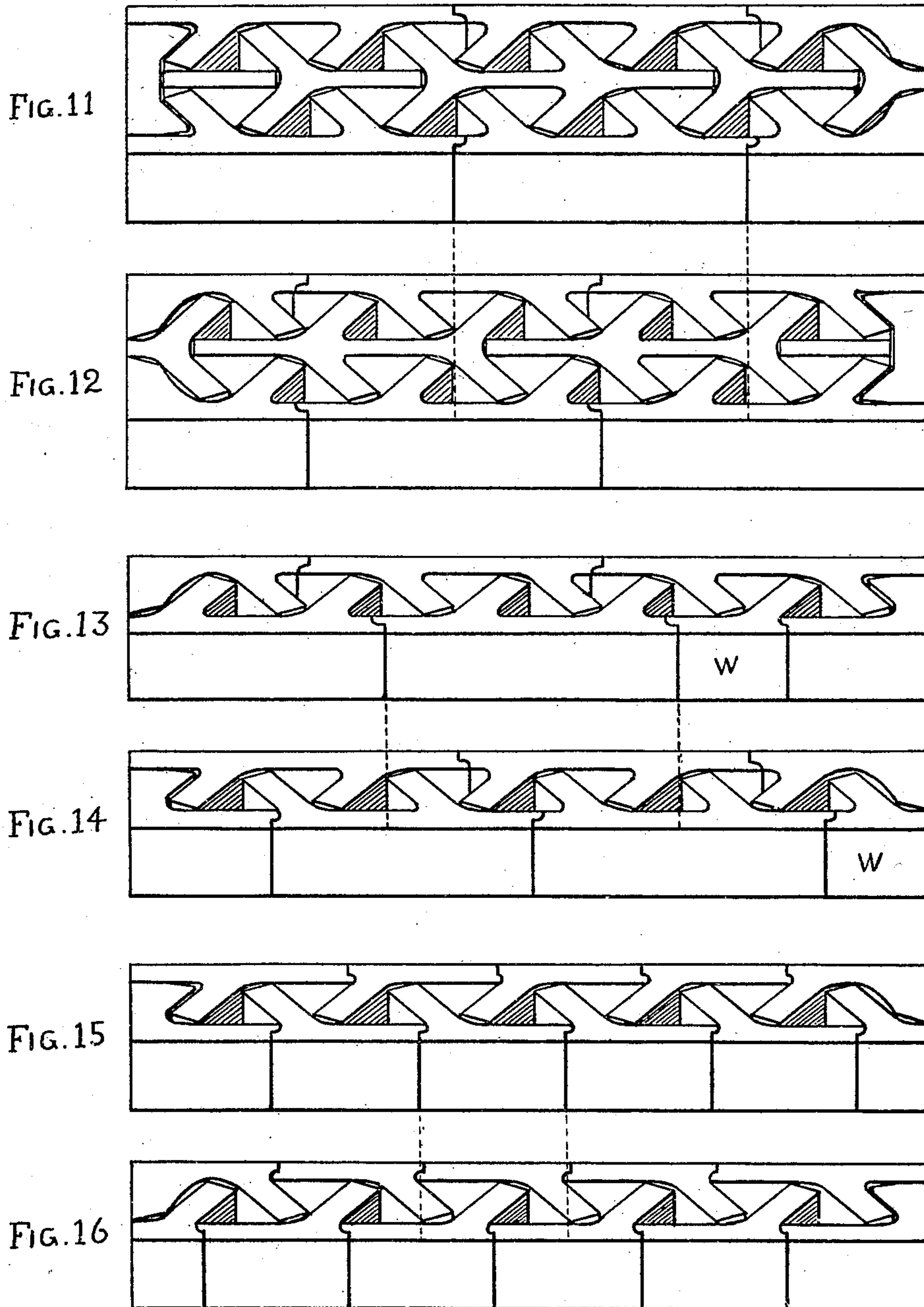


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3 SHEETS—SHEET 3.

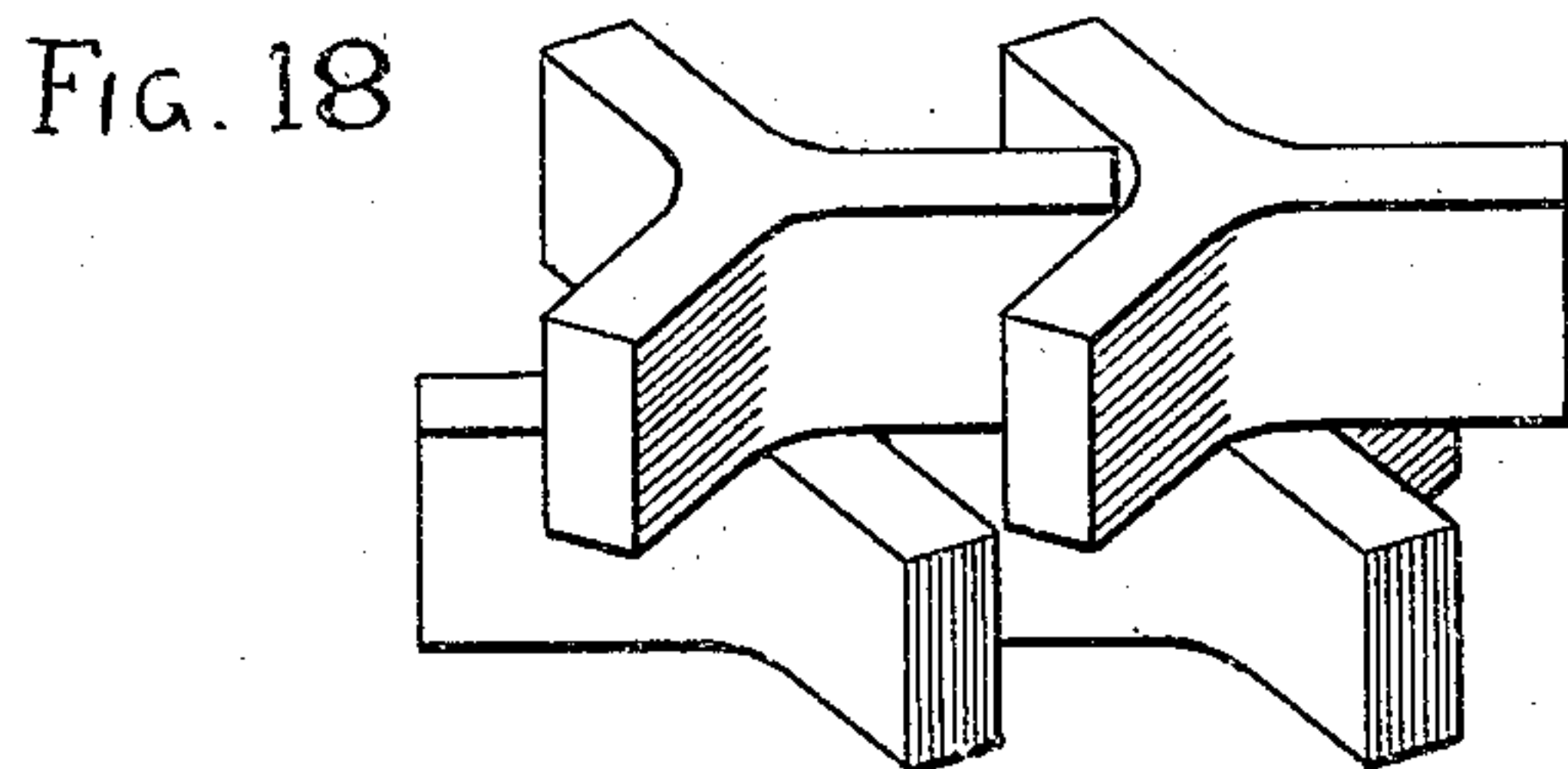
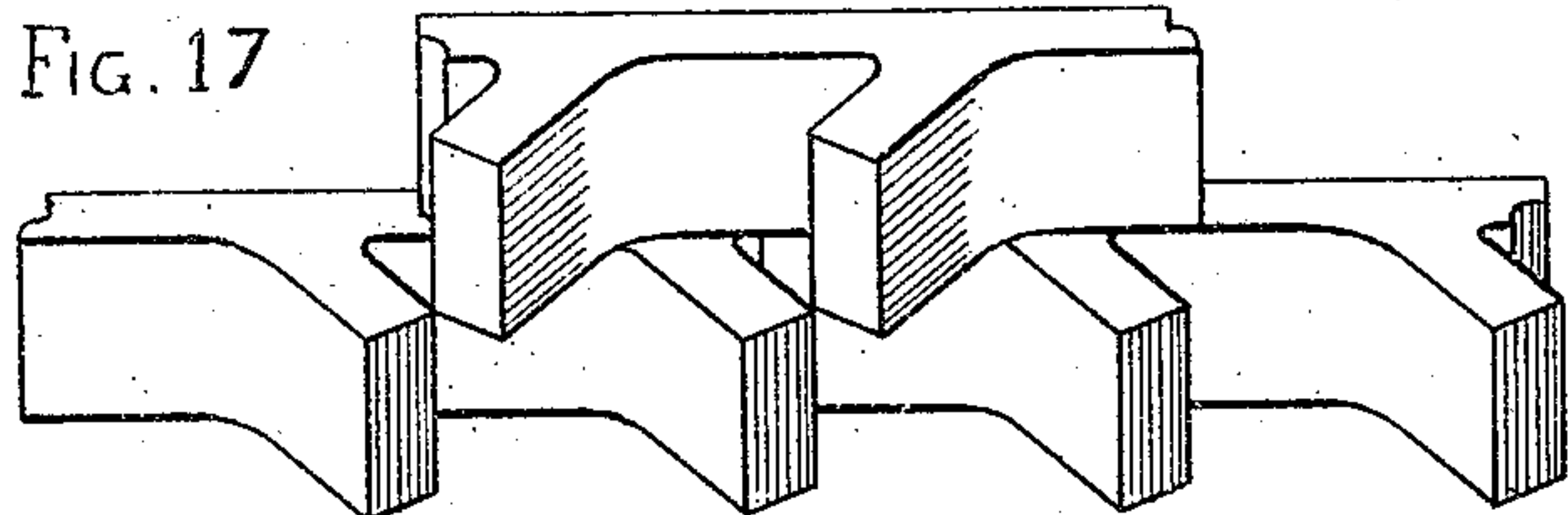


FIG. 20

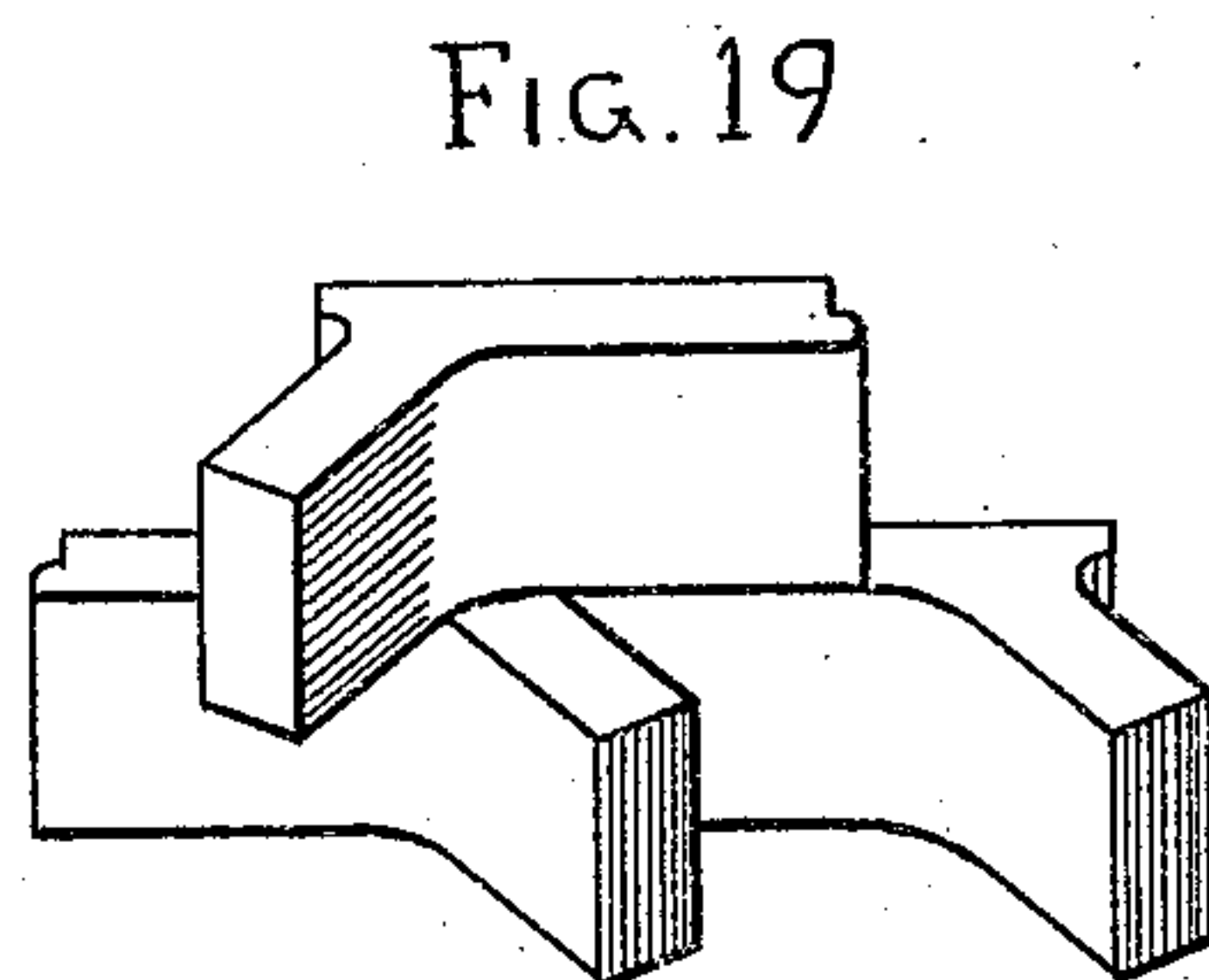
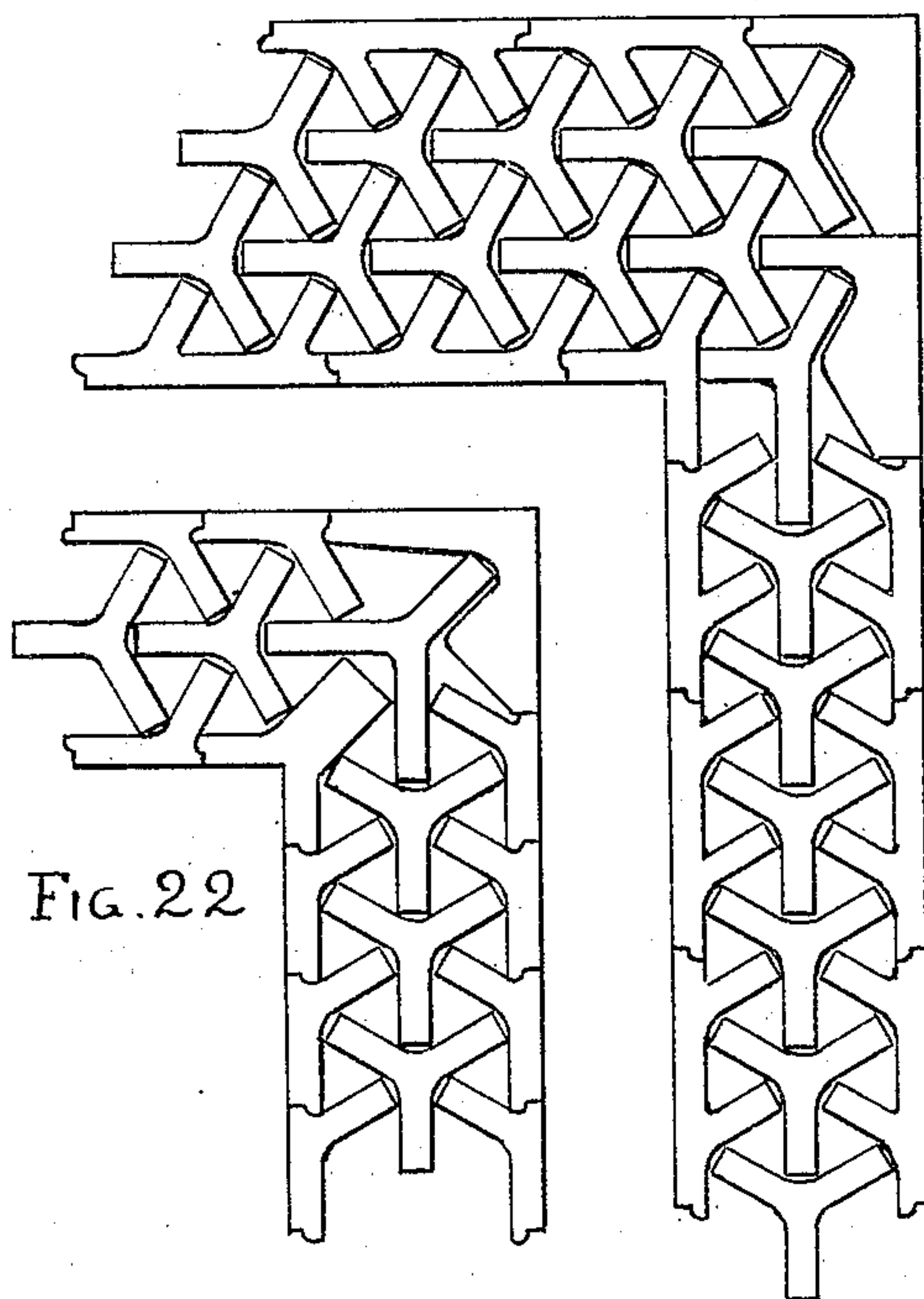
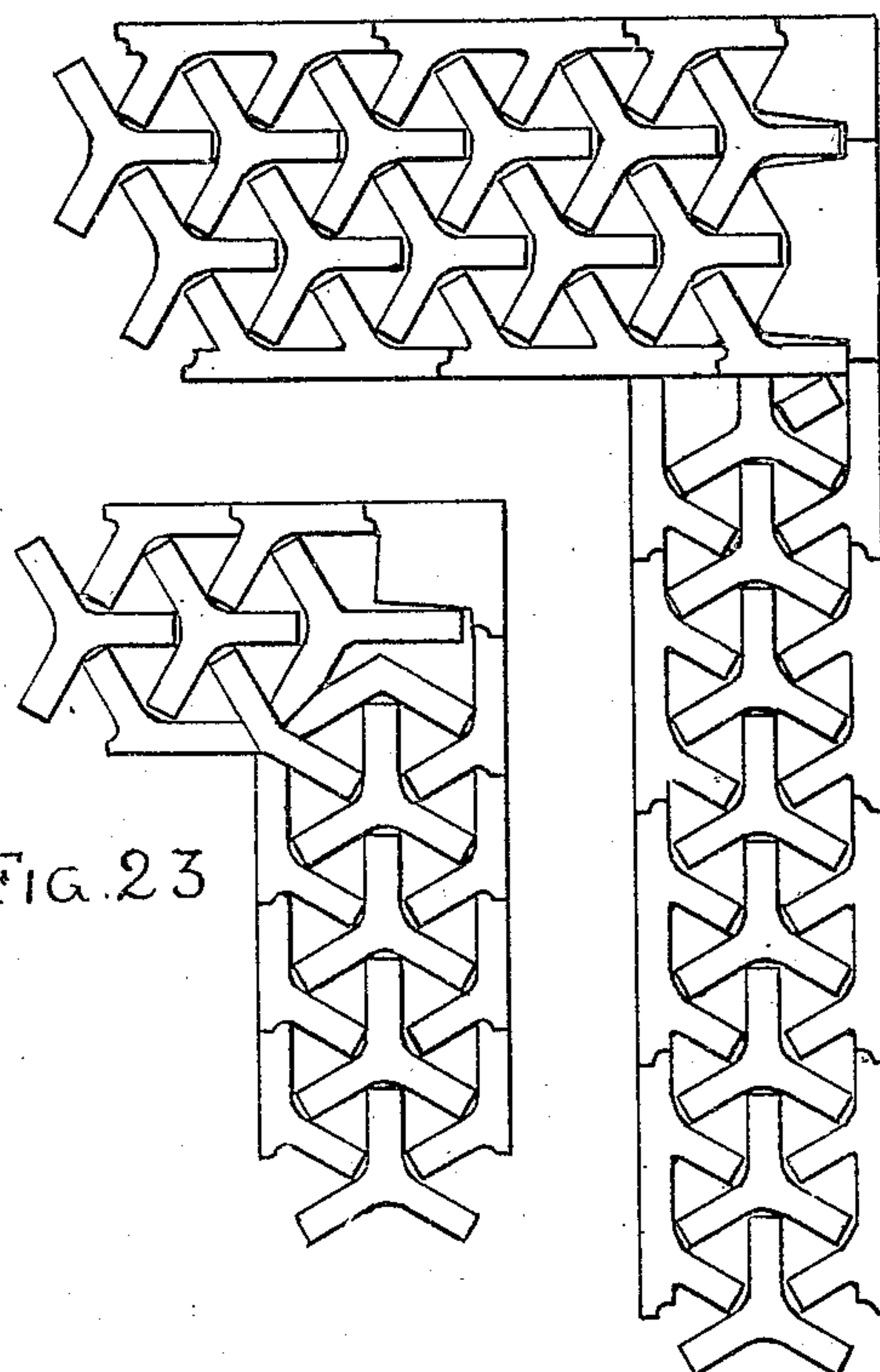


FIG. 21



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BUILDING BLOCKS AND WALL.

955,230.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed October 13, 1908. Serial No. 457,489.

To all whom it may concern:

Be it known that I, HECTOR VAN CAEYSEELE, a subject of the Kingdom of Belgium, residing at Salem, in the county of Marion and State of Illinois, have invented a new and original Improvement in Building Blocks and Walls, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention embodies certain novel improvements in building wall construction, and is designed to afford a structure of such walls possessing a maximum degree of rigidity and strength, facilitating the operation of building such wall, and having important advantages in regard to the provision of air passages in the wall to render the same moisture proof.

For a full understanding of the invention, reference is to be had to the following detail description, and to the accompanying drawings, in which—

Figures 1 to 7 show a preferred embodiment of the invention and illustrate the shapes of certain blocks in plan view and separated, and a suitable number of which blocks when laid properly form the wall constituting the invention; Fig. 8 is a top plan view showing how the blocks are assembled in building a wall; Fig. 9 is a plan view of a modified form of the invention showing no filler blocks; Fig. 10 is a modification extending the idea of construction shown in Fig. 8 to afford a wall of greater thickness; Figs. 11 and 12 are perspective views showing how upper and lower blocks are positioned relative to one another; Figs. 13 to 16 are views similar to Figs. 11 and 12, but of the blocks shown in the construction in Fig. 9; Figs. 17 to 19 are detail perspective views bringing out more clearly how the brace elements of the upper and lower blocks are arranged relative to one another; Figs. 20 to 23 illustrate adaptations of the invention to corner construction of walls.

Fig. 1 is a plan view of the first of the main building blocks, and is used as facing block. It comprises a body part marked A, with a socket at one end, marked C, a projection at the other end marked D, and with two body braces marked B, extending diagonally from the inner face, or rather, from one side thereof; said body braces being spaced so that the vertical longitudinal center line of each meets the vertical longitudinal center line of A at a point about one-

fourth of the distance of the total face length of A from one end. The braces B lie in such a direction from A that when laid in a single wall of two rows of blocks in the same horizontal course, as shown in Figs. 9, 13 and 14, the blocks of one row being reversed to the other opposite row, the vertical longitudinal center line of the braces B form the sides of a plurality of equilaterally disposed triangles, having their apex and base alternately in the body parts A of the blocks in both rows, thus forming a plurality of triangularly disposed vertical air spaces, as shown in Fig. 9 by X. In the course of a wall, the vertical air spaces form a plurality of triangularly disposed vertical air chambers throughout its height, and the braces B form vertical planes. The blocks in the next succeeding horizontal course, as Fig. 13 is to Fig. 14, are laid in the same manner as stated above, only reversed to the lower adjacent course, and thus by means of some mortar, bind every brace of said lower course, the braces B of one row of blocks binding the braces B of the next lower opposite row of blocks. In the regular run or course of a wall, with the exception of corners and ends, each block in both rows of blocks in the same horizontal course, breaks joints over the vertical center of two lower adjacent blocks in the lower adjacent course. C and D, shown in Fig. 1, are used as end locks for the adjacent blocks, and form the vertical joints, which, by means of some mortar, are made water tight.

Fig. 2 is a plan view of the second of the set of main building blocks, and is used as filler and as binding piece. It comprises a body part, marked E, with four body braces, marked F, two extending diagonally from each side of E, two of these braces branch off at one end of E, and lie in different opposite directions, and the other two branch off from E at a point near its vertical center, and lie in the same direction respectively as the two braces located at one end of E. All braces of E marked F, lie in such a direction that when laid in a double wall, as shown in Figs. 8, 11 and 12, with blocks shown in Fig. 1, on both sides thereof, in the same horizontal course, they set in between the braces B of each of the outside rows of blocks, as shown in Fig. 8, and toward the different points in the body parts A of each of said outside rows, where the vertical longitudinal center lines of the

braces B meet the vertical longitudinal center line of the body part A in each outside row of blocks in the same horizontal course. Thus, in a double wall, as shown in Fig. 8, the vertical longitudinal center lines of the braces B and the vertical longitudinal center lines of the braces F, form the sides of a plurality of side by side equilaterally disposed triangles, having their apex and base alternately in the body parts A of the blocks in each of the outside rows of blocks, and also in the inner vertical longitudinal rib or plane, which is formed by the body parts E of the kind of blocks shown in Fig. 2, and which is parallel to the face of the wall, thereby forming a plurality of side by side triangularly disposed vertical air spaces, shown in Fig. 8 by X. In the course of a wall, these air spaces form a plurality of triangularly disposed vertical air chambers throughout its height, and the braces F and B form a plurality of planes (vertical planes) throughout the whole height of said wall. The blocks in the next succeeding horizontal course, as Fig. 11 is to Fig. 12, are reversed to the lower adjacent course and bind every brace solidly in the wall. The braces B of the facing blocks, bind the braces F of the fillers of the lower adjacent course, and the braces F of the upper row of fillers, bind the braces B of the lower opposite rows of facing blocks, at the same time, the body parts of the upper row of facing blocks break joints over the vertical center of the body parts of the lower adjacent rows of facing blocks respectively, and the body parts of the fillers in the upper course break joints with the body parts of the fillers of the lower adjacent course.

Fig. 3 is a plan view of the third of the main building blocks, and is used as facing block. It comprises a body part marked G, with a socket at one end marked I, a projection at the other end marked J and a body brace, marked H, whose vertical longitudinal center line extends diagonally from the vertical longitudinal center line of G, at a point about one-fourth of the distance of the total face length of G from the end where the socket I is located.

When laid in a single wall of two rows of blocks in the same horizontal course, as shown in Figs. 15 and 16, the braces of the blocks in one row set in between the braces of the blocks in the opposite row, and toward the different points in the body parts of the blocks in said opposite row, where the vertical longitudinal center lines of the braces of said row, meet the vertical longitudinal center line in the body part of the blocks in the same row. Thus the method of laying blocks, as shown in Fig. 3, in a wall, is practically the same as described in the detail of the block shown in Fig. 1, and also produces the same results.

Blocks as shown in Fig. 3 are a strict necessity in the construction of any wall where half and quarter blocks are required to finish ends and corners. In turn, they can be used by themselves, or with blocks as shown in Figs. 1 and 2, and it will produce the same kind of wall, as the block shown in Fig. 1 would, with the exception that the latter has a bigger face length, and two body braces instead of one.

The part of the block shown by Fig. 2, which lies toward the left of the dotted line marked K, is half of said block, and is used as filler and binding piece. It comprises a body part marked E, and two body braces F, extending diagonally from E at one end thereof, and lie in different opposite directions, when laid in a double wall, as shown in Figs. 8, 11 and 12, with blocks shown in Fig. 1, or blocks shown in Fig. 3, on both sides thereof, in the same horizontal course. They produce the same results as the whole block shown in Fig. 2 would, with the exception that the one has a longer body part and has four body braces instead of two. The method of laying them in a wall is practically the same as the method of laying the blocks shown by Fig. 2 in any wall, double, triple, etc.

The part of the block shown by Fig. 2 which lies left of the dotted line K is the fourth and last of the main set of building blocks, and is a strict necessity in the construction of any double, triple, etc. wall where half and quarter blocks are required to finish corners or ends. In turn, they can be used by themselves as fillers in any double, triple, etc., wall, or with blocks as shown by Fig. 2, and will produce the same results as the latter blocks would. The part toward the right of the dotted line L in Fig. 2 represents a corner piece to be used in any corner of from 30 degrees to 90 degrees. The part of the block shown in Fig. 2, which lies toward the right of the dotted line K is also used to turn corners, and when one wall sets out from another, but the body braces are changed to the angle desired as shown in Figs. 20, 21, 22 and 23.

Fig. 4 represents a corner block with a body part marked M and a body brace marked N. This block is used in corners of walls lying at angles of from 30 degrees to 90 degrees.

Fig. 5 represents a corner block to turn square corners, as is shown in Figs. 8, 9, 11, 12, 13, 14, 15 and 16. It comprises an angular body part marked OO, with a body brace marked P, extending diagonally from a point near one end thereof.

Fig. 6 represents a corner block to turn square corners, and is also used as end piece. The whole of this block or part thereof is used in Figs. 9, 10, 13, 14, 15 and 16. It comprises an angular body part

marked RR, with a projection extending from the inner side of the main part of the body part, marked S.

Fig. 7 represents an end block and part of it is used also to turn square corners, the whole of this block or part thereof is used in Figs. 8, 10, 11 and 12. It comprises a body part marked T, with two end projections marked V, and two angular projections marked U.

Fig. 8 is a plan view of a short horizontal course of blocks of a double wall. The letter A represents the body parts of blocks shown by Fig. 1, the letter B represents the body braces of the same blocks. The letter E represents the body parts of the blocks shown by Fig. 2, and the letter F represents the body braces of the same blocks. The letter T represents the body part of the block as shown in Fig. 7; the letter U represents the triangular projections of the same block. The letter O represents the body part of the block shown in Fig. 5, and the letter P represents the body brace of the same block. X represents the vertical triangularly disposed air spaces. The detail of this course was explained in the detail of Fig. 2, with the exception of the end and corner pieces.

Fig. 9 is a plan view of a short horizontal course of blocks of a single wall. The letters A and B represent the body parts of the blocks as shown by Fig. 1, and also the braces of the same blocks respectively. OO and P represent the body part of the block shown in Fig. 5, and the body brace of the same block respectively. RR represents part of the angular body part of the block shown in Fig. 6. The detail of this course was described in the detail of the block shown in Fig. 1, with the exception of the end pieces.

Fig. 10 is a plan view of a short horizontal course in a triple wall. A represents the body part of the blocks shown in Fig. 1, B represents the braces of the same blocks. G represents the body parts of the blocks shown in Fig. 3; H represents the braces of the same blocks. E represents the body parts of the blocks shown in Fig. 2. F represents the body braces of the same blocks. R represents the angular body part of the blocks shown in Fig. 6, and S represents the projection of the same block. T represents the body part of the block shown in Fig. 7, V represents the end projections of said block, and U represents the angular projections of the same block. X represents the vertical triangularly disposed air spaces. The detail of this course and the method of laying the blocks has been explained in the detail of Fig. 2, with the exception of the end pieces. In this kind of a wall, the outside braces of both rows of fillers, bind the braces

of the facing blocks of the lower adjacent course, and at the same time, the inside braces of both rows of fillers are bound, each row in turn, by the inside braces of the upper opposite adjacent row of fillers, and the braces of the upper rows of facing blocks bind the outside braces of both rows of fillers of the lower adjacent course. The body parts of the fillers break joints over each other (like they do in any wall when used) and the body parts of the facing blocks break joints in the same manner, as described in the detail of Fig. 1.

Fig. 11 is a top and front perspective view seen from an angle of 45 degrees, of a short horizontal course in a double wall, and is the binding course for Fig. 12, which is also a front and top view seen from the same angle. The short broken lines indicate how the whole blocks as shown in Fig. 1 break joints in the course of a wall.

Fig. 13 is a top and front perspective view, seen from an angle of 45 degrees, of a short horizontal course in a single wall, and is the binding course for Fig. 14, which is also a top and front perspective view of the same kind of a course as Fig. 13. The letters WW show parts of the block as shown in Fig. 1, and the short broken lines indicate how the whole blocks break joints.

Fig. 15 is a top and front perspective view of a short horizontal course in a single wall, and is the binding course for Fig. 16, which is also a perspective view, seen from the same angle. Both of those courses are made up of blocks as shown in Fig. 3 with end pieces as shown in Fig. 9. The short broken line indicates how those blocks break joints in the course of a wall.

Fig. 17 is a perspective view of three blocks as shown in Fig. 1, showing the method of laying them in a wall.

Fig. 18 is a perspective view of blocks as shown in Fig. 2, the bottom block represents a whole block, and the two upper blocks represent two half blocks. This figure shows the method of laying those blocks in a wall.

Fig. 19 is a perspective view of blocks as shown in Fig. 3, and shows how those blocks are laid in a wall.

Fig. 20 is a plan view of a square corner, showing how half of the block shown in Fig. 2 is being used to turn corners.

Fig. 21 is the mating course to Fig. 20, and is the same kind of a view.

Fig. 22 is a plan view of another square corner, and shows, as in Fig. 20 how half of the block shown in Fig. 2 is used to turn corners.

Fig. 23 is the binding course for Fig. 22, and is the same kind of a view.

I claim:

1. A building wall comprising a plurality of rows or courses of inner and outer blocks,

the outer blocks having interlocking projections and recesses at adjacent vertical edges, and both the inner and outer blocks being formed with diagonally extending braces
5 between their ends, the outer ends of the braces of one block, being in contact with the body of the opposite block, and each course of blocks being arranged with its braces extending in a direction reverse to
10 those of the next lower course of blocks, the extremities of the braces of the blocks contacting with the bodies of opposite blocks at the points where the said braces join the block bodies, whereby said braces resist lateral and longitudinal stress.

2. A building wall composed of inner and outer rows of blocks spaced apart by integral diagonal braces projecting from the bodies of said blocks, the ends of the braces
20 of one row of blocks contacting with the bodies of the opposite blocks substantially at the angle where said braces join the bodies of their blocks, whereby lateral and longitudinal stress is resisted, and a plurality of
25 triangular air spaces formed between the rows, the inner and outer blocks being arranged in upper and lower courses so that the air spaces register and form vertical air chambers, and the braces of the blocks of
30 each lower course being reversed with reference to those just above them but the braces

of an inner lower row of blocks being in the same vertical plane as those of an upper outer row of blocks.

3. A building wall composed of upper and lower courses of blocks each course consisting of inner and outer rows, the blocks of each row having opposite diagonal braces extending toward but at an angle to each other and in contact with the bodies of the
40 respective blocks, the braces of the inner row of blocks extending reverse to those of the row just above but in the same vertical plane as those of the upper outer row of blocks.

4. A building wall composed of upper and lower courses of blocks, each course consisting of inner and outer rows, the blocks of each row having diagonal braces extending toward one another, the braces of the inner
50 row of blocks extending reverse to those of the row just above but in the same vertical plane through opposite directions as those of the upper outer row of blocks, the blocks of each row being interlocked at the joints,
55 those below breaking joint with those above, and the braces contacting at opposite extremities.

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Witnesses:

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