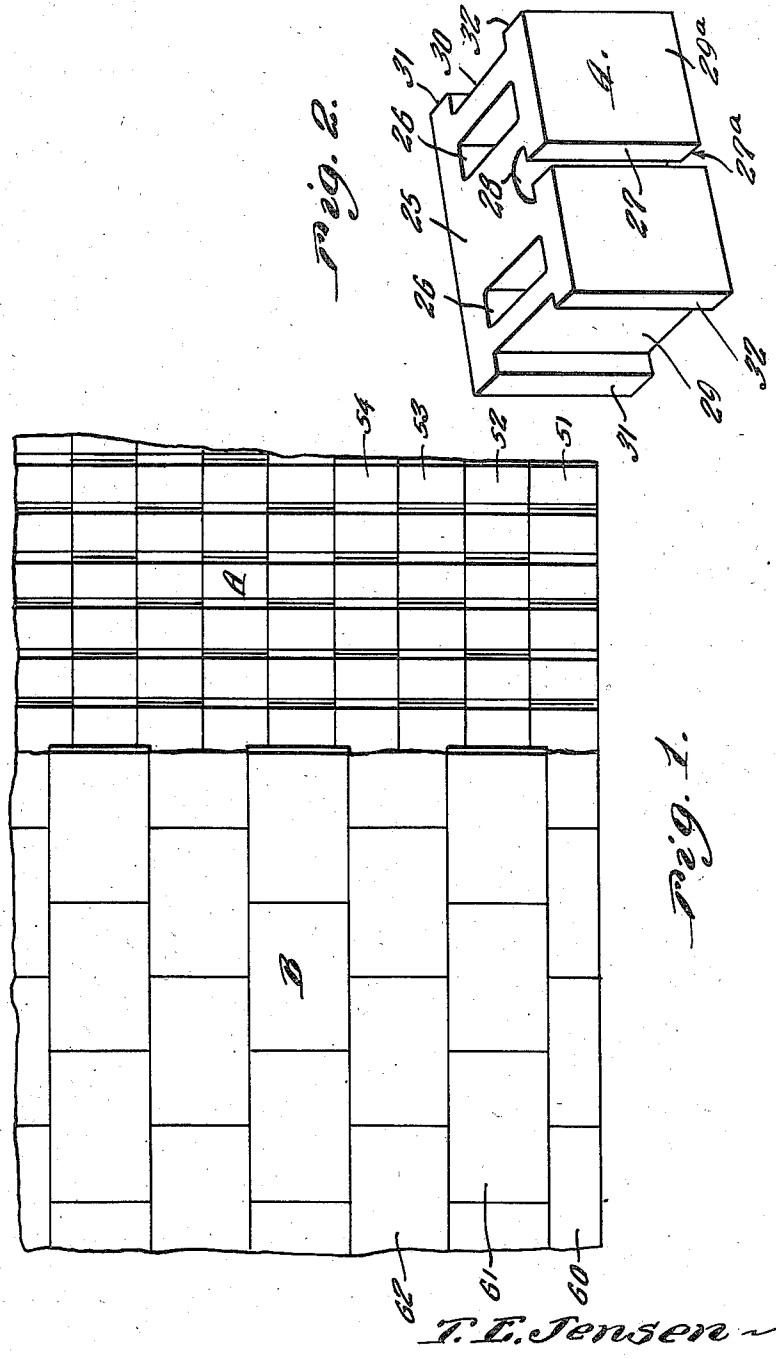
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SELF LOCKING INTERLOCKING WALL CONSTRUCTION

Filed April 26, 1935 2 Sheets-Sheet 1



Inventor

T. E. Jensen

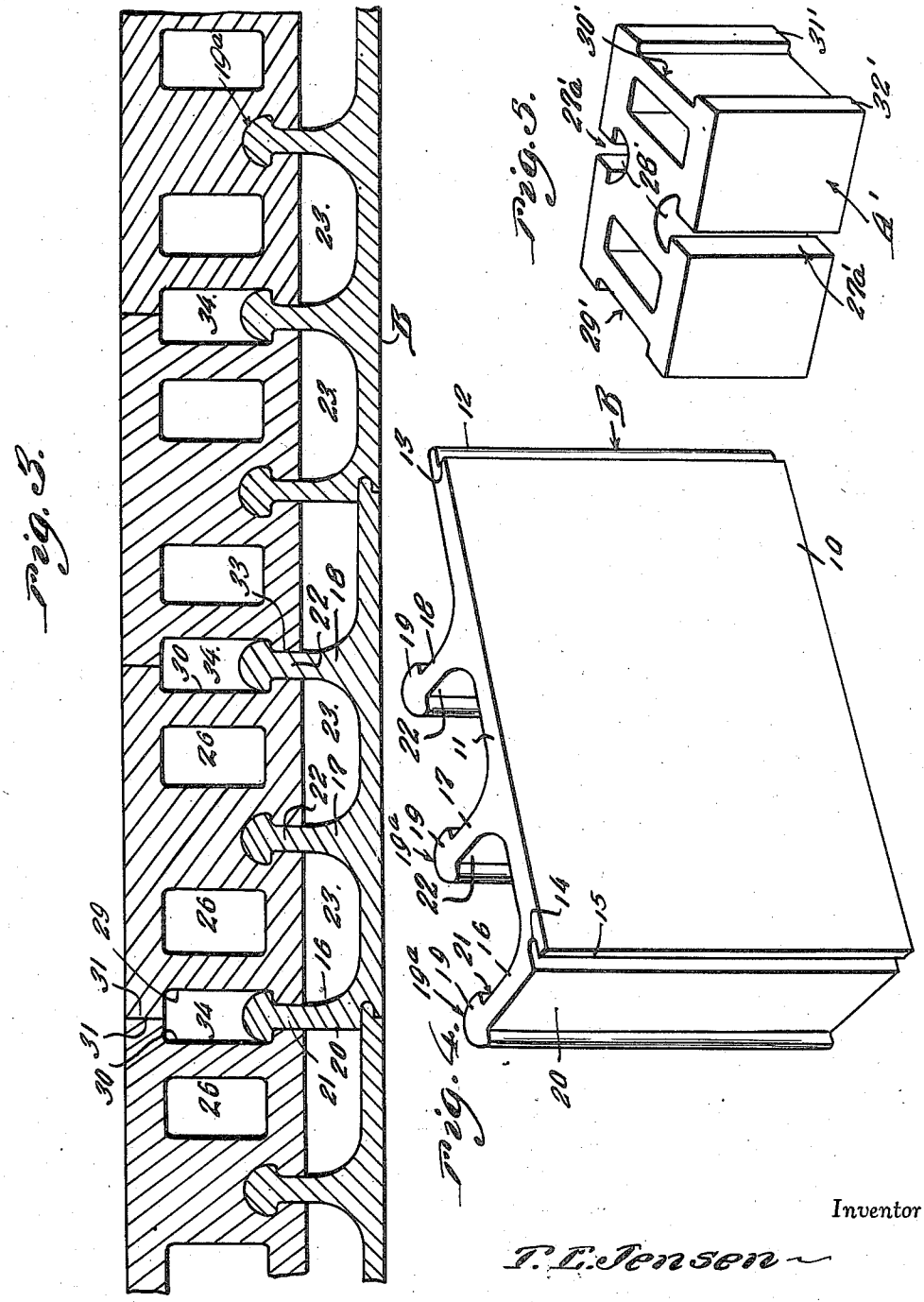
By Clarence A. O'Brien

Attorney

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SELF LOCKING INTERLOCKING WALL CONSTRUCTION

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Inventor

T. E. Jensen

By Clarence A. O'Brien

Attorney

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SELF LOCKING INTERLOCKING WALL CONSTRUCTION

Talma E. Jensen, Omaha, Nebr.

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5 Claims. (Cl. 72—41)

This invention relates to an interlocking wall construction.

The primary purpose of the present invention resides in constructing a wall of concrete blocks laid in courses one on top of the other and utilizing concrete slabs laid in courses as a facing for the blocks which slabs not only interlock with the blocks to hold the slab in position but serve to lock the blocks together thereby eliminating the use of mortar bonds between the joints with the attendant expense of skilled masons necessary in fabricating the walls using mortar bonds in the construction thereof.

Another feature of the present invention is to provide pockets in the blocks and cells between the confronting faces of the slabs and blocks which cells may be utilized for heating and cooling the buildings as well as spaces through which may be run plumbing and electric conduits so as to conceal them in the wall.

Further objects of the invention are to provide a wall construction of the character referred to that is strong, compact and durable, thoroughly reliable for its intended purpose, that conforms to block and slab manufacturing practice, and that is comparatively inexpensive to manufacture thereby facilitating economical building construction.

With the foregoing and other objects in view, the invention consists of a novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying drawings wherein is disclosed an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to without departing from the spirit of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a portion of a wall, partly broken away, laid with the concrete blocks and slabs in accordance with the principle of the present invention.

Figure 2 is a perspective view of one of the blocks of the wall.

Figure 3 is a longitudinal section through the wall.

Figure 4 is a perspective view of one of the facing slabs of the present invention.

Figure 5 is a modified form of a concrete block used when it is desired to face both the inside and outside of the wall with the slab of the present invention.

Referring to the drawings in detail and particularly Figures 1 and 2 wherein is disclosed a wall laid in one of several ways utilizing the present invention, wherein concrete slabs B are used on only one face of the wall, it will be seen that the concrete blocks A are laid in superimposed courses. Each block A of each course is laid in end to end relation and the four bottom courses of the blocks are selected for illustration and indicated at 51, 52, 53 and 54. The blocks of one course 52 are laid so that the vertical joints of the overlying and underlying courses 53 and 51 respectively are broken by exactly one half the length of the block.

The slabs B are also laid in courses indicated by numerals 60, 61 and 62 beginning with the lower course. The lower course 60 is formed of slabs B one half the height of the regular size slabs and for this purpose slabs B may be cut in half longitudinally, or they may be cast in a mold only half as deep as the mold for the regular slabs. The length of slabs on the lower course 60 are otherwise identical with the regular size slabs. The slabs B of the one course 61 are laid so that the vertical joints of the overlying and underlying courses 62 and 60 are broken. Furthermore, it will be noted that the longitudinal joints of the courses of blocks are broken with respect to the longitudinal joints of the courses of the slabs. For that reason the slabs B are one and one half times the height of the blocks and so as to make the keys on the ends of the ribs mesh with the keyways on the centers and ends of the blocks, as will hereafter appear, the slabs are one and one half times the length of the blocks.

In constructing the wall the initial course of slabs 60 is laid to a straight line. Then the rear initial course 51 of the blocks is laid by sliding the keyways in the centers of the blocks down over the keys on the slabs as will hereafter appear. Following the laying of the blocks and the slabs on the initial courses then the second course 61 of the slabs is laid on the initial course 60 with the keys interlocking with the remaining keyways in the initial course of blocks 51. Then two courses of blocks 52, 53 are laid on the initial course 51 by sliding the keyways down over the keys on the slabs. The routine of laying two courses of blocks to one of the slabs continues upwardly until the building wall is completed.

It is pointed out that there is no mortar bonds between the joints of the courses of blocks or slabs since the keys on the slabs interlock the

slabs to the concrete blocks and also interlocks the blocks of the courses together.

Each slab B is a rectangular concrete panel very much thinner than the thickness of the blocks. This slab has a flat outer face **10** and a flat upper and lower face **11**. The slab has a tongue **12** on the inner portion of one side edge which merges with a square shoulder **13** on the outer portion of the same edge. On the opposite side edge the slab is formed with a groove **14** on the inner portion which merges with an inset ledge **15**. The tongues **12** intermesh with grooves **14** while shoulders **13** abut ledges **15** on the adjacent slabs in the same course, and flat upper and lower faces **11** of the slabs of the courses abut one another.

Projecting rearwardly from the inner face of each slab are three spacing ribs indicated at **16**, **17** and **18**. The ribs are equally and longitudinally spaced from each other, and are arranged in parallel vertical position, are co-extensive with the height of the slabs and the flat upper and lower edges of the ribs are flush with the flat upper and lower faces of the slabs. On the outer free ends the ribs each merge with the center of the chord side of the segmental heads **19**, which heads are a part of the locking keys indicated at **19***a*. One side **20** of each end rib **16** is flat and this side is outset with respect to the ledge **15** which relation breaks the vertical joints between the slabs. The other side of rib **16** curves inwardly from the inner face of the slabs to a point outwardly of the heads **19** and at this point the ribs flatten out to provide flat shanks or necks **21** on the keys **19***a*. Both sides of the other ribs **17** and **18** curve inwardly on the same radii as the curved inside of the end ribs **16** and they also flatten out adjacent the heads **19** to form flat shanks or necks **22** on the keys **19***a*. These necks **21** and **22** fit in the keyways between the ends of the blocks and in the centers of the blocks while the curvature of the ribs at the points where the shanks or necks merge forms a buttress to prevent lateral movement between the blocks and the slabs all of which will appear from an inspection of Figure 3 of the drawings. Thus it will be seen that there are closed arched cells **23** between the inner face of the slabs and the inner faces of the blocks when they are laid in locked relation, which cells form a continuous chamber throughout the height of the building wall and this chamber may be used for concealing plumbing or electric conductors or may be utilized for flues in heating or refrigerating the building.

The end ribs **16** of each slab is always formed at one end of the slab while the rib **18** is always spaced equally inwardly from the other side of the slab to provide proper spacing and interlocking as shown in Figure 3 of the drawings.

Now, referring to the blocks A used in constructing a wall with facing slabs on one side only, one of which blocks is shown in Figure 2 it will be seen that each block has a body portion of block form. The block has a flat top and bottom face **25** which abut one another when laid in courses. Extending from the top to bottom faces in each block are rectangular openings or pockets **26** adjacent each end. Since these pockets **26** in each block are the same size and uniformly spaced from the ends of the block and from each other, they will register with each other or with the pockets in the ends of the blocks throughout the height of the wall because when the blocks and slabs are interlocked as shown in Figure 3 of the drawings they are brought into alignment.

Extending from the center of the inside face **29***a* inwardly is a keyway indicated generally at **27***a* consisting of a guide slot **27** which receives the necks **21** or **22** and this slot merges in the center of the segmental shaped cavities **28** the latter receiving the heads **19** on the keys **19***a*. In each end the blocks are formed with recesses **29** and **30** and these recesses terminate short of the corners of the blocks to provide shoulders **31** on the outside of the recess and shoulders **32** on the inside of the recess. Shoulders **31** abut each other but due to the shoulders **32** being stepped inwardly there are guide slots **33** between the faces of inset shoulders **32** when the blocks are laid in end to end relation.

When the blocks are assembled recesses **29** and **30** in the confronting ends of adjacent blocks of the same course form rectangular pockets **34**, the one side portion of which conformably grips the heads **19** and guide slots **33** receive necks or shanks **21** or **22** of the keys **19***a*.

It will thus be seen that the pockets **34** and guide slots **33** form a keyway which performs the same function as the keyways **27***a* in the centers of the blocks. Furthermore, pockets **34** and guide slots **33** register with guide slots **27***a* in the overlying and underlying courses of blocks so that the keys **19***a* not only lock the blocks of the courses together but lock the ends of adjacent blocks at the same course together.

Where dual facing slabs B are used it is necessary to make recesses **28'** on keyways **27***a'*, referring to Figure 5, in each side of the blocks A' in alignment with one another. At the same time, shoulders **31'**, **32'** adjoining the recesses **29'** and **30'** at the ends of the blocks are flush with each other. This construction gives keyways **27***a'* in the center on each side of the block just like keyways **27***a* and the keyways between the ends of the blocks on each side similar to the keyways formed by the pockets **34** and guide slots **33**, in the use of single facing slabs in Figure 3 of the drawings. In all other respects the blocks are formed alike. By forming the blocks with keyways in the ends and the sides on each side of the block one slab B may be used on each face of the wall where double facing slabs are required.

The slabs B are approximately one and one half times the length of the blocks and approximately one and one half times the height of the blocks. This relation of one to the other breaks longitudinal joints between the blocks and slabs when they are laid like in Figure 1 of the drawings. The guides and pockets **33**, **34** forming the keyways at the ends of the blocks and keyways **27***a* in the middle of the blocks are uniformly spaced to receive the uniformly spaced shanks on necks and heads on the keys **19***a*. The free portions on the sides of the slabs permit the keys **19***a* to align and seat in the respective keyways either in the center or the ends of the blocks. It is believed that reference to Figures 1 and 3 of the drawings will give a clear understanding of the relation of the joints of the courses and of slabs to the courses of the blocks when taken in conjunction with the foregoing description without a more detailed description thereof.

Having thus described the invention, what is claimed as new is:

1. A slab facing for interlocking with a block wall comprising a flat rectangular body, no less than three vertically extending lateral ribs carried by the flat body, each of said ribs terminating

in a shank and a segmental key on their free ends and the ribs being equal in height to the height of the flat body, one of the ribs being at one end of the body and another rib located intermediate the ends of the body, a tongue on a portion of one side edge and a groove on a portion of the other side edge of the body arranged in offset relation with respect to the end edges so as to break the vertical joints between contiguous bodies in the same course.

2. A unit comprising a block body formed with inset recesses in the end faces coextensive with the height of the block, said recesses terminating short of the vertical side corners to provide flat shoulders between the recesses and the vertical side corners whereby the confronting recesses of contiguous blocks in the same course form a keyway to receive the head of a lateral key on a parallel course of masonry and the shoulders of contiguous blocks on the same course form a lateral slot entering the keyway to receive the shank on the lateral key on the parallel course of masonry.

3. A unit comprising a block body formed with inset recesses in the end faces coextensive with the height of the block, said recesses terminating short of the vertical side corners to provide flat shoulders between the recesses and the vertical side corners whereby the confronting recesses of contiguous blocks in the same course form a keyway to receive the head of a lateral key on a parallel course of masonry and the shoulders of contiguous blocks on the same course form a lateral slot entering the keyway to receive the shank on the lateral key on the parallel course of masonry, and the shoulder to one side of the recess being stepped inwardly with respect to the shoulder to the other side of the recess so as to form said slot on only one side of the block and an abutting joint between the shoulders on the other side of the block.

4. A self-locking interlocking wall construction fabricated with parallel courses of blocks and facing slabs wider than the blocks, the blocks provided with recesses in the end faces opening outwardly to form keyways in the joints between the ends of the blocks, one side face of the blocks formed between the ends with keyways, the facing slabs formed with lateral spacing ribs engaging confronting portions of the blocks to provide cells between the ribs and the confronting faces of the blocks and slabs, said ribs terminating in keys engageable in said keyways to interlock the adjacent blocks of one course together and the two adjacent courses, and also lock the blocks and slabs together, and interlocking tongue and groove joints between the confronting ends of the slabs of each course.

5. A self locking interlocking wall construction fabricated with parallel courses of blocks and facing slabs wider than the blocks, the blocks equipped with recesses in the end faces to provide keyways in the joints between adjacent blocks, and said blocks formed with keyways in the centers of one side face, facing slabs equipped with lateral spacing ribs terminating in keys engageable in said keyways to interlock the slab courses with the block courses and also to lock the block courses together.

TALMA E. JENSEN.