The present invention relates to a method of constructing arched roofs, one object of the invention being the provision of a method by means of which arched roofs may be constructed upon two parallel sustaining walls by means of a fixed arch and a removable arch so as to permit of the easier assembling of the roof and particularly of a roof of the so-called lamella construction.

A further object of this invention is to so construct a roof supported from sills carried by two parallel walls that the parts going to make up the roof may be readily assembled from within the walls and placed in position and without the usual cumbersome scaffolding and temporary construction now necessary, thus providing a method of constructing a practical and inexpensive roof.

With the foregoing and other objects in view, the invention will be described with reference to the accompanying drawings which illustrate suitable means for carrying out the invention.

In the accompanying drawings:

Fig. 1 is a cross section through the two walls adjacent the temporary truss member;

Fig. 2 is a longitudinal sectional view through a building in course of construction showing the end truss and the intermediate temporary truss in position and in dotted lines, a portion of the lamella or batten construction being shown in place;

Fig. 3 is an enlarged view, partly in section, of the inner side of one of the walls and sills with the temporary truss member in place;

Fig. 4 is a cross section on the line 4-4, Figure 3, showing a portion of the temporary truss member in elevation; and

Fig. 5 is a perspective view of one of the antifriction members for supporting the temporary truss member.

Referring to the drawings, the numeral 6 designates a wall and 7 one of the piers thereof, the same being constructed in the usual manner to properly support the roof construction as will presently appear. As shown in Figure 4, during the construction of the wall the lower end of an anchor 8 is embedded in the wall with its upper end 9 extending above the wall. The upwardly extending portion 9 of said anchor is bent at an angle to form the angular plate 10. A block 11 is made of peculiar shape and has its base resting on the wall 6 and the pier 7, the inner edge of its base being slightly short of the inner face of the pier so as to afford a space on the upper end of the pier for the reception of a lower corner of a sill 12 which as shown is anchored to the inclined inner face of block by means of the tie rod 13 which extends through both the sill 12, block 11 and upwardly extending portion 9 of the anchor 8 and is anchored at its outer end by means of the nut 14 and washer 14'. By this arrangement the blocks and the sills are properly attached relatively to each other and to the walls and, as will presently be described, form the support proper for the roof construction.

Attached by any desired means to the sill 12 is an end arch or truss 15 which constitutes an end support for the roof construction, the same being erected from within the walls by means of a derrick or temporary scaffolding while the temporary intermediate arch or truss 16 is built upon the ground and then lifted to rest upon the sills and be slid along said sills to the desired position. This intermediate arch or truss 16 is composed of two side members 17 and 18 which, as clearly shown in Figs 3 and 4, are secured together by means of the transverse braces 19 and 20, angle irons 21 each having a vertical flange secured to one of the side members 17 at the lower end of the latter and having its other flange directed toward the other side member, and a plate 25 connecting the latter flanges of the angle irons 21. The plate 25 carries on its upper face a metal plate having an eye bolt 23 which has threaded therethrough a cable 24 which acts as an emergency tie rod for the present construction. Attached to the lower faces of the plate 25 are two rollers 26 for engaging the inner inclined face 12' of its respective sill while an arm 27 projecting from the lower face of the plate 25 at a right angle to said face carries a roller 28 adapted to rest upon the upper face of the sill 12 so that the tempo...
rmary or intermediate arch or truss 16 may be supported upon the sills, the braces 19 and 20 and the plate 25 supporting the members 17 and 18 so that they do not readily tilt but are substantially constructed when disposed upon the sills 12. By this means the sliding arch or truss 16 will substantially align with the end truss 15 and, in order to provide a temporary support for connecting the two and at the same time for building the lamella or batten roof construction 30 therebetwehen, planks 28 are attached to the underside of the truss member 16 and extend between said truss member and the completed end of the roof to support the roof construction as it is built. A plate 29 has one end secured to the truss 16 adjacent the apex of the latter and its other end adapted to rest upon the end of the roof as the latter is built so as to prevent the truss 16 from tilting. Thus the plate 29 and the planks 28 form a connecting means between the trusses 15 and 16 for the reception of the batten or lamella roof 30 and, as they are only temporary, they may be removed after construction of the roof. After the roof construction has been completed, the braces 19 and 20, angle irons 21, and plate 25 are removed from the members 17 and 18 of the truss 16 and said members are then moved close together and bolted or otherwise secured together to form the end truss at the opposite end of the building from the truss 15; or, when the roof has been constructed to a point between the latter end of the building and the truss 15, another end truss such as 15 may be attached to the sills at the opposite end of the building from the truss 15 and another section of roof may then be built between the truss 16 and the second end truss. In either event the brackets 19 and 20, angle irons 21 and plate 25 are removed and the members 17 and 18 placed adjacent to each other and bolted together. In buildings of great width the tie rods 13 may be supported by means of temporary supports 13'. It is also possible that, instead of the plate 29, other and equivalent means of bracing may be applied between the truss 16 and the end of the completed portion of the arched roof and that wire rope of any desired type may be used. In erecting the present roof the blocks 11 are placed in the final position on the piers and the sills attached thereto. The tie rods 13 are then put into position to tie the sills together or they may be applied later on. As above described the end arch 15 is brought into place at one end wall either by means of a derrick or other hoisting apparatus or by light scaffolding. The movable intermediate arch 16 which is built upon the ground is then lifted and placed upon the casters as shown in Figures 1, 2 and 3, so that the same may be slid along the sill to its desired position for co-action with the end arch 15. From the foregoing description it is evident that, when constructing a roof according to the present invention only a small amount of space is required for building the trusses and putting them into position as compared with the space usually required for that purpose in building arch roofed buildings of particularly wide spans.

What I claim is:

1. The herein described method of constructing an arched roof building, consisting of erecting two parallel walls, placing a fixed end truss upon the two walls adjacent one end of the latter, sladly mounting a co-acting truss upon the two walls and in spaced relation to the end truss, temporarily connecting the two trusses together, and erecting an arched roof between the two trusses.

2. The herein described method of constructing an arched roof building, consisting of erecting two parallel walls, placing a fixed end truss upon the two walls adjacent one end of the latter, sladly mounting a co-acting truss upon the two walls and in spaced relation to the end truss, temporarily connecting the two trusses together, erecting an arched roof between the two trusses, removing the temporary connecting means and attaching the slideable truss firmly upon the walls.

3. The herein described method of constructing an arched roof building, consisting of erecting two parallel walls, placing a fixed end truss upon the two walls adjacent one end of the latter, placing upon the two walls in spaced relation to the end truss a truss movable longitudinally of said walls and having means for antifrigonally engaging the sills of the wall, adjusting said second truss and temporarily connecting the two trusses together, erecting an arched roof between the two trusses, removing the temporary connecting means and attaching the longitudinal truss to the walls.

4. The herein described method of constructing an arched roof building, consisting of erecting the two parallel walls, placing a sill upon the top of each wall with its inner face inclined at an angle, erecting a truss upon the sills at one end of the walls and between the walls, placing upon the sills for slideable movement a second truss and in spaced relation to and in co-action with the first truss, connecting the two trusses together temporally, erecting an arched roof between the two trusses, removing the temporary connections between the trusses and securing the second truss to the sills.

5. The herein described method of constructing an arched roof building, consisting of erecting two parallel walls, placing a sill upon the top of each wall, erecting the movable intermediate arch 16 which is built upon the ground is then lifted and placed upon the casters as shown in Figures 1, 2 and 3, so that the same may be slid along the sill to its desired position for co-action with the end arch 15.
sills between the end trusses a slidable truss for co-action with both end trusses, connecting the two end trusses to the intermediate truss with temporary supports, erecting an arched roof between all of the trusses, removing the temporary supports between the trusses and securing the intermediate truss to the sills.

6. The herein described method of constructing an arched roof building, consisting of erecting two parallel walls, placing a sill upon the top of each wall with its inner face at outward inclination to the inner side of the wall, erecting a truss upon the sill at each end of the walls, placing upon the sills between the end trusses a slidable truss with removable antifrictional means between the same and said sills, placing temporary supports between the two end trusses and the intermediate truss, erecting an arched roof between all of the trusses, removing the temporary supports between the trusses and the antifrictional means between the intermediate truss and sills, and securing the intermediate truss to the sills.

In testimony whereof I have hereunto set my hand.

JOSEPH H. W. BOWER.