Mar. 27, 1923. 1,449,519

S. T. LAYTON

MODELING APPLIANCE

Filed Mar. 14, 1921 2 sheets-sheet 1

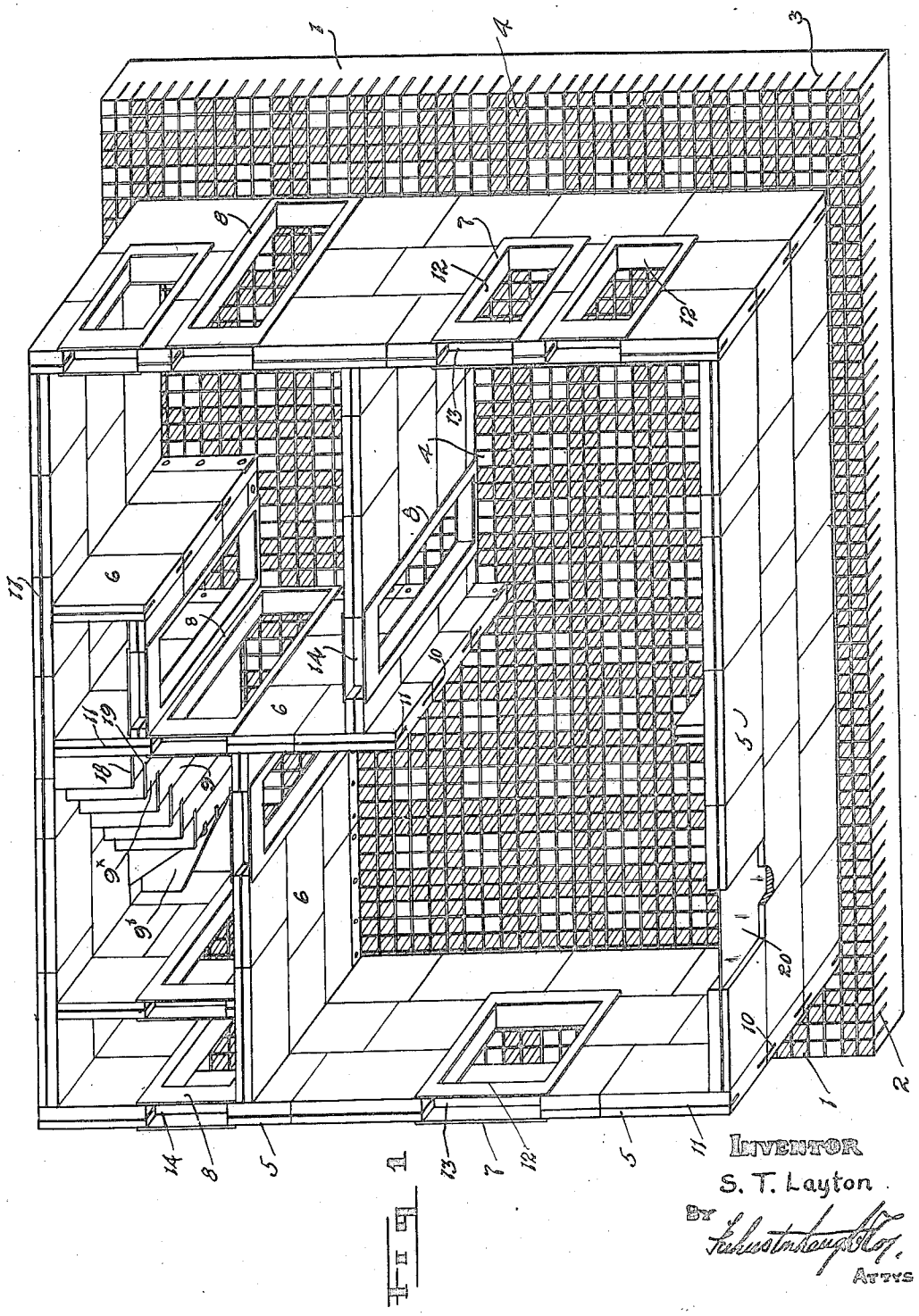


Fig. 1.

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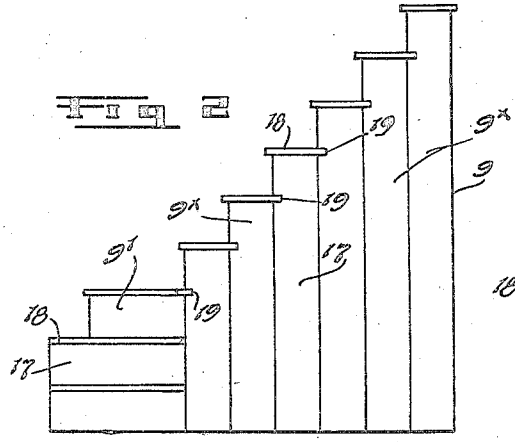


Fig 2

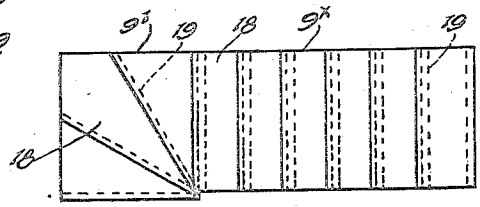


Fig 3

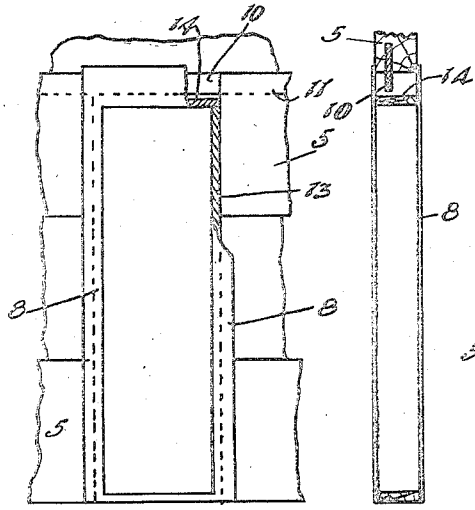


Fig 4

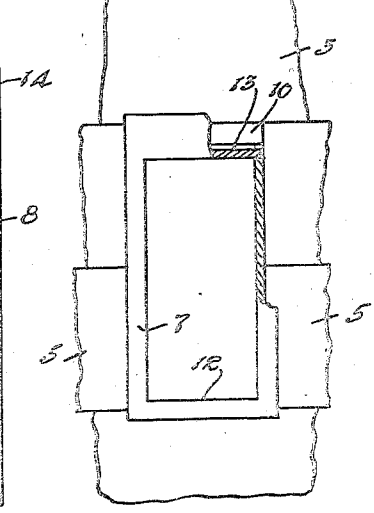


Fig 5

Fig 6

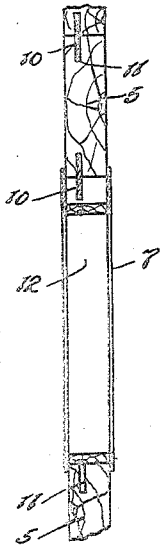


Fig 7

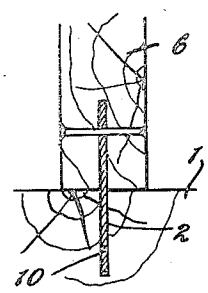


Fig 8

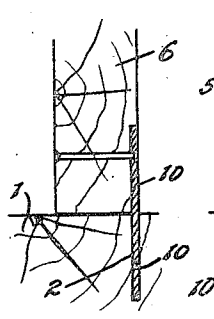


Fig 9

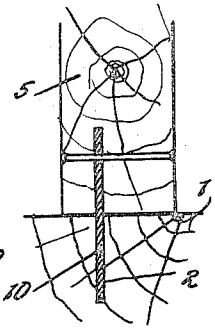


Fig 10

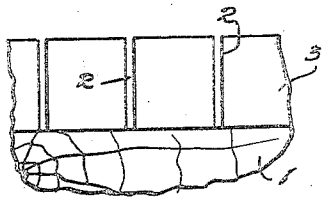


Fig 11

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Patented Mar. 27, 1923. 1,449,519

UNITED STATES PATENT OFFICE.

SHIRLEY THOMPSON LAYTON, OF WINNIPEG, MANITOBA, CANADA.

MODELING APPLIANCE.

Application filed March 14, 1921. Serial No. 451,953.

To all whom it may concern:

Be it known that I, SHIRLEY THOMPSON LAYTON, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Modeling Appliances, of which the following is the specification.

The invention relates to improvements in model appliances especially designed for quickly and accurately setting up partial scale models of proposed buildings, thereby visualizing to scale the proposed building so that one unfamiliar with drawings can obtain a clear conception of their plan and thereby better satisfy themselves of their desires.

A further object is to design the apparati so that a wide range of construction is possible with a minimum number of parts and so that the operator can work quickly in erecting and can easily select and move the various parts into position and as easily knock down and store the loose parts.

With the above more important and other minor objects in view, which will become more apparent as the description proceeds, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawings in which:—

Fig. 1 is a perspective view to scale of part of a proposed building constructed by using my modeling appliance.

Fig. 2 is a side view showing a number of step pieces put together to form a stairway.

Fig. 3 is a plan view of the step pieces shown in Fig. 2.

Fig. 4 is a front view of one of the door frame pieces, parts being broken away to expose construction.

Fig. 5 is a vertical sectional view centrally through the door frame piece.

Fig. 6 is a front view of one of the window frame pieces, parts being broken away to expose construction.

Fig. 7 is a vertical sectional view centrally through the window frame piece.

Fig. 8 is an enlarged detailed vertical sectional view through the joint formed between one of the partition pieces and the base or floor board.

Fig. 9 is an enlarged vertical sectional view through the joint formed between another of the partition pieces and the base or floor board.

Fig. 10 is an enlarged vertical sectional view through the joint formed between one of the wall pieces and the base or floor board.

Fig. 11 is an enlarged vertical sectional view through a part of the base or floor board.

In the drawings like characters of reference indicate corresponding parts in the several figures.

It is a well known fact among architects, real estate agents and such like persons that considerable difficulty is experienced with clients in giving them a clear conception of a proposed building structure especially where drawings embodying floor plans, sections etc. are relied upon, all of which in the greater number of cases are not understood. My invention is provided to visualize to scale, a proposed building, thereby giving the client a clear idea of the general arrangement and allowing him an easy way of varying the structure to suit his taste wthout initially requiring the producing of expensive drawings.

The device is now described in detail, a selected building being shown built in Fig. 1 of the drawings, to which I now refer.

The proposed building is erected on a floor or base board 1 of predetermined dimension, its size being such that it will accommodate the building thereon to scale of varying sized structures. The top face of the base board is transversely and longitudinally slotted or cut to provide spaced cross slots 2 and 3 running from side to side and end to end. The slots are all equi-spaced so that the face of the board presents a multitude of squares 4 bounded by the slots. I have found it desirable in building to scale to place the slot centres ¼ inch apart, such distances actually representing in the completed structure six inches, that is to say a scale of one inch=two feet.

I have found it desirable in actual prac-

tice to color certain of the squares so that the distance of one foot to scale can be quickly determined. In Fig. 1 it will be seen that certain of the squares have been cross hatched in lengthwise and transversely extending rows. These squares would be colored, say black, and the rest would be left natural color. The effect is so clearly shown in Fig. 1 that further description is considered unnecessary.

With the board I supply a varying number of wall pieces 5, partition pieces 6, window frame pieces 7, door frame pieces 8 and step pieces 9. The wall and partition pieces are preferably all of the same height, the desirable height to scale representing two feet, six inches, which distance is the customary height of the wall to the window sill. The wall pieces are preferably three-eighths of an inch thick whilst the partition pieces are one-quarter of an inch thick, these dimensions being relatively correct in a scale model. The door frame pieces and the window frame pieces are formed so that they represent to the selected scale the customary full size door and window frames. The step pieces are also designed so that they not only give a good impression of a step but also indicate in the model to the selected scale the customary full sized steps in a stairway. In connection with the stair pieces, I may state that I supply various shapes of step pieces so that direct or straight stairways or indirect or turning stairways can be set up.

As before intimated a number of wall partition, door frame, window frame and step pieces are supplied, the wall and partition pieces varying in length but being regular so that any desired building plan can be erected by selecting the proper length wall and partition pieces and with due regard to the doors and windows which are to appear. In order to retain the wall and partition pieces in an upstanding position on the base board and one on top of the other I have provided them all on their undersides with downwardly extending longitudinal stationary tongues 10 and at the top with complementary longitudinally extending grooves 11. The tongues are all arranged to make a neat but sliding fit in the slots of the board or in the grooves of the wall or partition pieces.

A number of partition pieces are supplied with tongues positioned in different locations. Special pieces are used as the base pieces of the partitions of the proposed building or those which sit directly on the board. In Figure 8 the tongue is shown as centrally positioned and in Figure 9 it is put to the side. This arrangement allows me a variation of one-eighth of an inch in setting the partitions as it will be remembered the width of the partition pieces is one-quarter of an inch. In building, however, this distance to scale represents three inches so that the model when completed is within three inches of accurate measurement.

The tongues of the wall pieces are all set to the side of centre (see Figure 10), the distance actually being to scale, one-quarter inch from one side and one-eighth inch from the other. This arrangement also gives a variation of one-quarter inch in the placing of the wall pieces as by reversing them one varies the position of the wall on the board one-quarter inch which to scale represents three inches.

The window frame pieces 7 provide rectangular openings 12 of a length and width corresponding to full sized window frames which they represent to scale and they are also formed to present a continuous circumscribing channel 13 which is adapted to receive the inserted edges or ends of the wall pieces in which the window is placed.

By referring to Figure 1 of the drawings, it will be seen that the window frame pieces may vary in width and that they are placed in the wall as it is being erected and that the sill of the window frame lies directly on the lower row of wall strips which brings it at a proper height as the said wall strips represent to scale a distance of two feet, six inches which is the customary height of a window sill from the floor.

In Figure 1 the walls have been carried to a height of three strips which indicates a distance of seven feet, six inches. If it is desired to carry the wall higher it will be observed in Figures 6 and 7 that the tongues of the strip overlying the window is provided for as it enters the channel at the top of the frame piece.

The door frame pieces 8 are constructed also to scale and are supplied with a circumscribing channel 14 corresponding to and for the same purpose as the window frame channel 13. Accommodation is also made here for building above the door frame piece if desired, the tongue being accommodated in the channel at the top of the door frame piece (see Figures 4 and 5). The step pieces vary in shape so that a straight or direct stairway can be set up by utilizing wholly what might be called "straight" steps, or an indirect stairway having a turn therein can be set therein by using the "straight" steps 9× and a number of what might be termed "corner" steps 9′. A number of "straight" and "corner" steps of varying height are provided so that when they are selectively brought together a flight of stairs can be built with a constant riser distance, the distance representing also to scale the customary full step riser distance. It will be observed that each step piece comprises a block like body member 17 which is capped at the top with a tread member 18, the tread member overhanging at both edges

to give a natural step appearance at the front edge and to provide a fastening at the rear or inner edge. It will be observed also that the block like body of the step piece is horizontally slotted at 19, the slot being adapted to receive the inner overhanging edge of the adjoining step tread.

The "corner" step pieces 9′ are pre-designed so that a set number of them will turn a right angled corner in the completed staircase and the tongue and slot connection between adjacent step pieces is a neat sliding fit. Obviously by modifying the shape of the angular step pieces any type of staircase can be represented in the complete model.

In Figure 1, I have shown a modified form of window arrangement which can be used where one does not desire to use the window frame pieces. By supplying a transparent substantially rectangular strip or pane of material 20, such as isinglass, and of a predetermined size, one can select and insert a pane in the wall as and where required, the lower edge of the pane being received within the groove of the underlying wall piece.

I do not consider it necessary to elaborate on the actual building of a model from a selected number of pieces as this is clearly set out in Figure 1 of the drawings and assuming that the slot centres on the base, are as hereinbefore stated one-quarter of an inch apart, then the model erected represents accurately to scale the proposed building and gives the observer an accurate representation of his structure. Obviously when one has an outline of the complete requirements he can quickly erect the model structure and can readily move the pieces to vary the model to suit the taste of the client.

I have purposely shown a somewhat irregular arrangement of the parts in order to bring out clearly how easily the device adapts itself to the work.

Whilst I have stated a certain scale, it will be readily understood that this can be changed without departing from the spirit of the invention. Once, however, the centres of the slots in the base piece have been established the various other building pieces will be made with due regard to the same and following the lines hereinbefore outlined.

Whilst I have described this device as particularly valuable to architects, real estate agents and such like persons, still I wish it to be understood that the invention could be marketed as a toy for children as it would be not only interesting to them to erect buildings according to their whims but also it would have a beneficial educative value. Obviously by continuing building the walls and partitions to their full height and by providing peak pieces, an upstairs floors and a miniature roof structure a complete building could be made by the child.

What I claim as my invention is:—

1. An appliance for modeling miniature buildings comprising a floor board having the upper face thereof provided with equi-spaced slots intersecting at right angles, a plurality of equi-height wall and partition pieces and of varying length, tongues extending from the lower sides of all the pieces and having varying positions on the said pieces and grooves complementary to the tongues formed in the upper sides thereof, the said tongues being adapted to slidably enter the slots in the floor board and a plurality of door and window pieces for insertion in the structure, said door and window pieces being provided with exposed channels adapted to receive the wall and partition pieces and of a depth sufficient to admit the tongues thereof.

2. In a building modeling appliance, a staircase formed from a plurality of similar stair sections of varying height and constant length and thickness and provided each with a tread member capping and overhanging the top of the section and on the front side with a cross groove, the cross groove of one section being adapted to slidably receive the overhanging edge of the tread of the adjacent section to releasably connect adjacent step sections together.

3. In the building modeling appliance, step sections of predetermined length, width and thickness, each step section being capped at the top end by a tread member having the edges overhanging and being provided with a cross groove complementary to the overhanging edge of the tread member and positioned below the tread member a distance corresponding to the riser of the step.

4. A building modeling appliance comprising a base having the upper surface thereof provided with intersecting slots, wall and partition pieces each provided at its lower end with a tongue adapted to enter a slot in the base and at its upper end with a groove for receiving the tongue of a further piece to be superimposed thereon, door and window pieces adapted for insertion between adjacent wall or partition pieces and presenting circumscribing channels adapted to accomodate edges of the said pieces therein and a plurality of step sections adapted to be removably mounted on the base and having interlocking engagement with one another whereby vertical displacement of individual step sections is prevented.

Signed at Winnepeg, this 1st day of March 1921.

SHIRLEY THOMPSON LAYTON.

In the presence of:

GERALD S. BOXBURGH,

K. B. WAKEFIELD.