E. L. KLINGENSMITH.

REINFORCED CONCRETE DOOR AND WINDOW FRAME CONSTRUCTION.

APPLICATION FILED AUG. 21, 1915.

1,229,293.

Patented June 12, 1917.

2 SHEETS—SHEET 1.

FIG. 1.

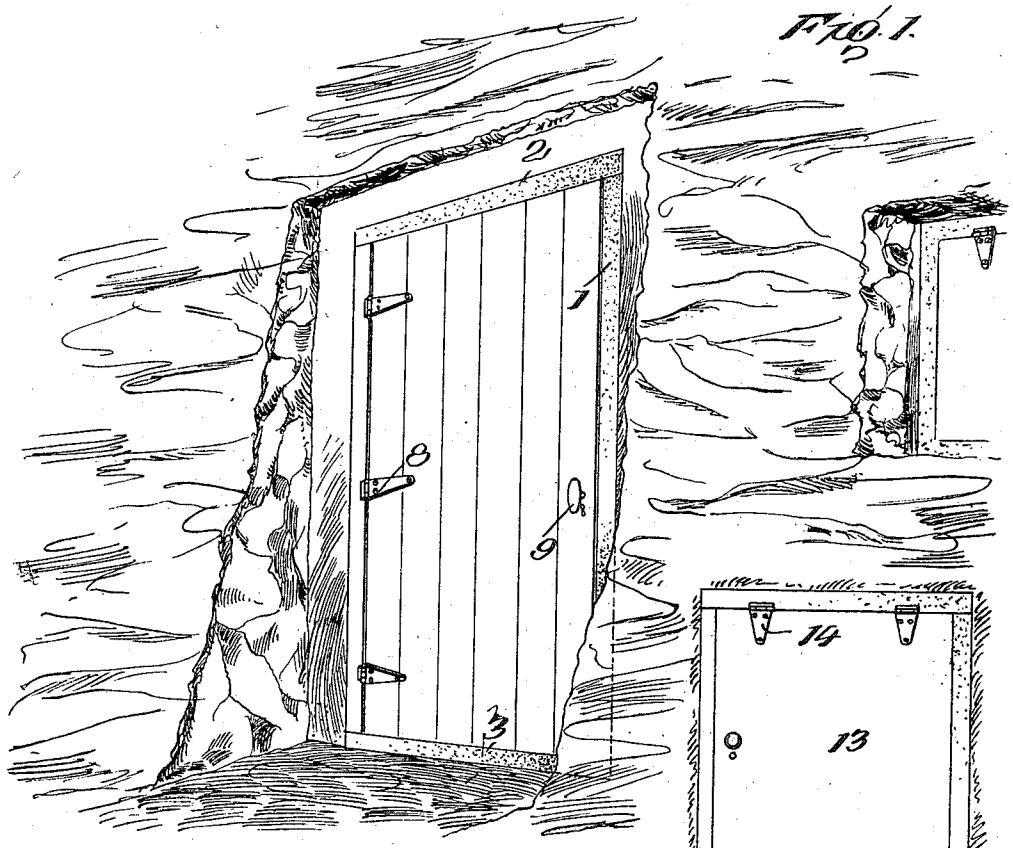
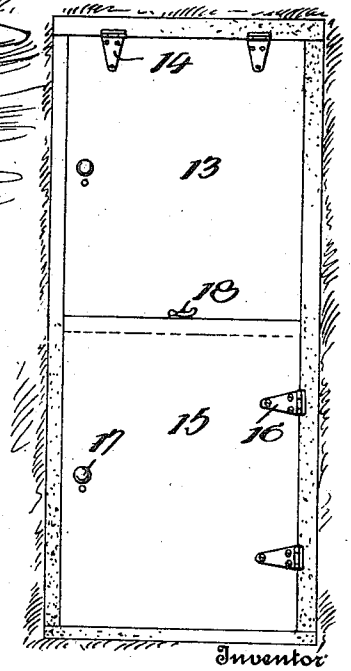


FIG. 6.



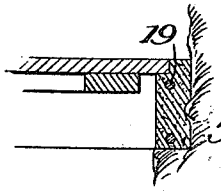


FIG. 7.

Inventor

E. L. Klingensmith

By

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

E. L. KLINGENSMITH.

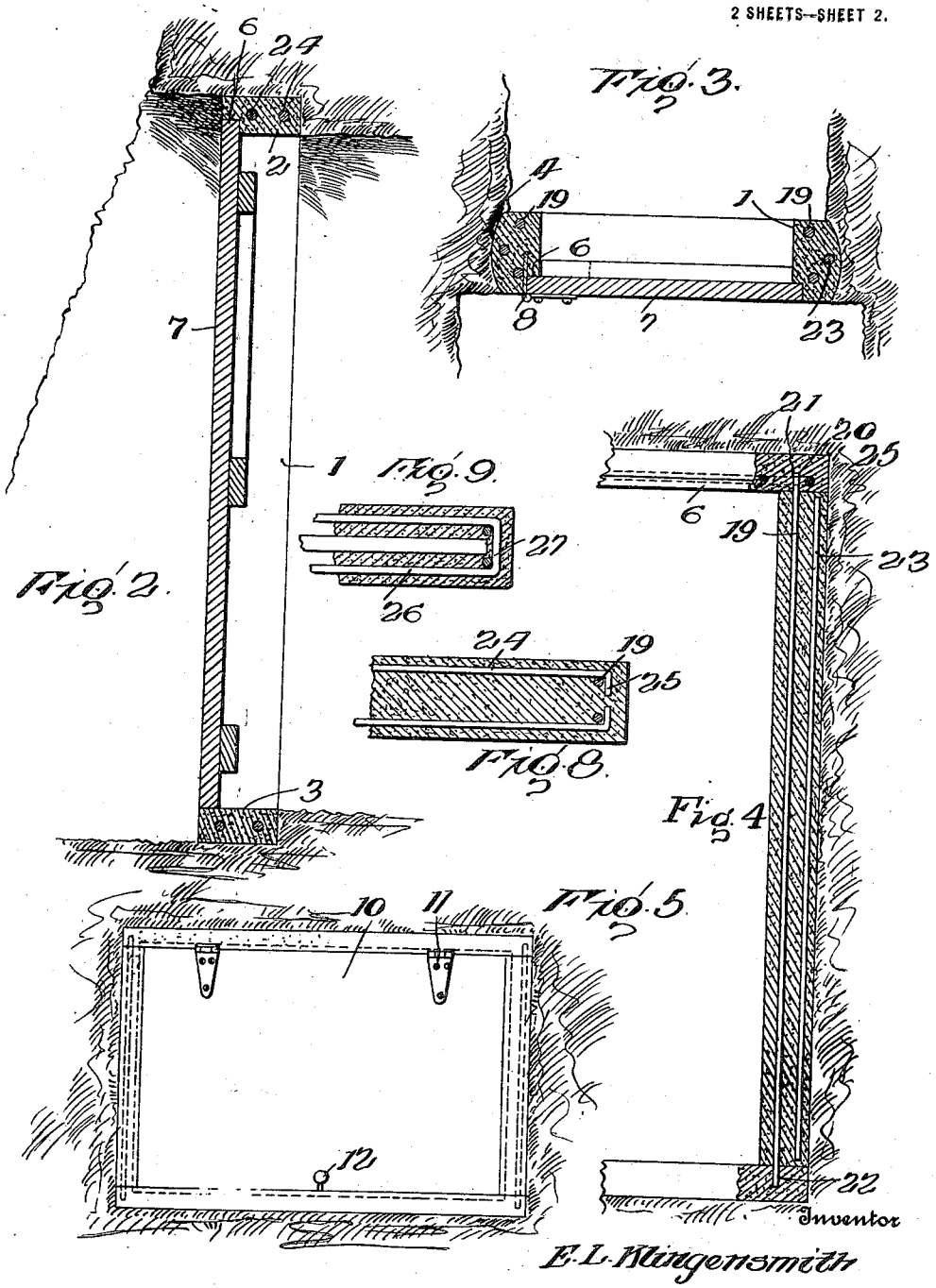
REINFORCED CONCRETE DOOR AND WINDOW FRAME CONSTRUCTION.

APPLICATION FILED AUG. 21, 1915.

1,229,293.

Patented June 12, 1917.

2 SHEETS—SHEET 2.



Inventor

E. L. Klingensmith

By

Howson & Howson, Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDMUND L. KLINGENSMITH, OF PIERSON, IOWA.

REINFORCED-CONCRETE DOOR AND WINDOW FRAME CONSTRUCTION.

1,229,293. Specification of Letters Patent. Patented June 12, 1917.

Application filed August 21, 1915. Serial No. 46,620.

To all whom it may concern:

Be it known that I, EDMUND L. KLINGENSMITH, a citizen of the United States, residing at Pierson, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Reinforced-Concrete Door and Window Frame Constructions, of which the following is a specification.

This invention relates to reinforced concrete door and window frames and more particularly to a frame construction of this class especially adapted for employment in the entrance way and window openings in caves, cellars, and like storage places. Ordinarily wood is employed in the construction of door and window frames for use in the locations stated but this material presents the disadvantage that it is liable to soon rot or the frames are liable to sag.

Another aim of the invention is to provide a door and window frame construction of the class described of such nature that it may be molded in sections and the sections or parts may be readily assembled to complete the frame.

In the accompanying drawings:

Figure 1 is a perspective view of the frame structure embodying the present invention;

Fig. 2 is a vertical front to rear sectional view through a door frame constructed in accordance with the invention;

Fig. 3 is a horizontal sectional view through the door frame;

Fig. 4 is a vertical transverse sectional view through one side of the door frame;

Fig. 5 is a front elevation of a window frame constructed in accordance with the principles of the invention, the window being of the single sash type;

Fig. 6 is a similar view illustrating a window of the double sash type;

Fig. 7 is a horizontal sectional view illustrating a slight modification of the invention;

Fig. 8 is a horizontal sectional view through the lintel of the frame structure.

Fig. 9 is a view similar to Fig. 8 illustrating a slight modification.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

In the drawings the numeral 1 indicates the jamb of the door or window frame as the case may be, the numeral 2 indicates the lintel of the frame, and the numeral 3 the sill thereof. These members of the frame are molded from concrete and are substantially rectangular in cross section. However, in order to securely anchor the frame within the door or window opening as the case may be, it is preferable that the jambs 1 and also, if desired, the lintel 2 and sill 3 have their outwardly presented faces transversely convex as indicated at 4 or in the modified form of the invention shown in Fig. 7 of the drawings the said faces of the sections or members may be formed with longitudinally extending grooves or channels 5 for the same purpose.

Each of the jambs 1 and the lintel 2 is formed with a rabbet 6 in that face which is presented inwardly or in the direction in which the door swings to open position and the formation of these rabbets results in shoulders serving as abutments for the door. The door is indicated in the drawings by the numeral 7 and may be of the ordinary wooden construction and the hinges for the door are indicated by the numeral 8 one leaf of each hinge being embedded in one of the jambs 1 and the other leaf being secured in the usual manner to the face of the door. Any suitable latch and keeper construction indicated at 9 may be provided upon the door and in or upon the other jamb of the frame. In the case of the window structure shown in Fig. 5 the numeral 10 indicates the window sash which is of the ordinary type and which is hinged at its upper edge as at 11 to the lintel of the window frame and the said sash may be provided at its lower edge with any suitable securing means indicated in general by the numeral 12. In the window construction shown in Fig. 6 of the drawings, which structure is of the double sash type, the upper sash is indicated by the numeral 13 and is hinged at its upper edge as at 14 to the lintel of the window frame and the lower sash is indicated by the numeral 15 and is hinged at one lateral edge as at 16 to one of the jambs of the frame, suitable latch devices 17 being provided for securing the sashes in closed position. If desired, a lock or latch device 18 similar to the ordinary sash lock or fastener may be provided for securing together the upper edge of the lower sash and the lower edge of the upper sash.

In order to reinforce the several mem-

bers comprising the door or window frame as the case may be and to provide means for connecting the elements together, means is provided which will now be described. Embedded in each of the jambs of the door or window frame is a pair of metallic rods or lengths of pipe indicated at 19, these rods or pipes extending longitudinally of the said jambs and parallel to each other, and the rods project at their upper and lower ends as at 20 beyond the corresponding ends of the jamb and are designed to have their projecting ends fitted in sockets 21 and 22 formed respectively in the lintel 2 and sill 3 of the frame. In addition to the rods 19 a rod 23 is embedded in each of the jambs 1 adjacent the convex face 4 thereof and at a point between the rods 19. This rod 23 as illustrated in the drawings terminates at its upper and lower ends short of the ends of the said jamb although if desired it may be projected at its ends as in the case of the rods 19 and, furthermore, if desired the rods 19 and 23 may be either or both increased in number or, if desired, the rod 23 may be omitted. Embedded in the lintel 2 and the sill 3 are rods 24 which extend longitudinally of these members and parallel to each other and the said rods 24 at their ends are turned laterally as indicated at 25 near the ends of the said members so as to extend between the said ends of the members and the sockets 21 and thereby reinforce the said lintel and sill against fracture at the points of location of the said sockets.

In the form of the invention shown in Fig. 9 of the drawings the sill and lintel of the structure are reinforced by members each formed from a suitable length of rod material bent to form spaced portions 26 and a connecting portion 27, the members being disposed within the material of the sill and lintel with their spaced portions extending away from the ends of the said elements of the structure and with the projecting ends of the reinforcing rods 19 received within the angles between the connecting and spaced portions of the said reinforcing members. Also, if desired, a tubular reinforcing rod or member 28 may be arranged longitudinally within the said sill and lintel.

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

A device of the class described comprising a door frame formed of plastic material and including spaced jambs having their outer side longitudinal edges convex and their inner side longitudinal edges straight, a lintel resting on the upper ends of the jambs, a sill upon which the lower ends of the jambs are supported, the forward inner edges of the jambs, lintel and sill being rabbeted and adapted to form a seat for a door, spaced longitudinal reinforcing members embedded in the jambs and having their opposite ends projecting beyond the adjacent ends of the jambs and embedded in the lintel and sill, respectively, a third reinforcing rod embedded in each jamb between the first mentioned rods and spaced from the convex faces of the jambs, and spaced longitudinal reinforcing rods embedded in the lintel and having their opposite ends bent inwardly in parallel relation to the adjacent ends of the lintel and partially around the projecting ends of the longitudinal reinforcing rods in the jambs.

In testimony whereof I affix my signature in presence of two witnesses.

EDMUND L. KLINGENSMITH. [L. S.]

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."