

Feb. 17, 1925.

G. T. KNIGHT

1,526,638

BALUSTER AND RAILING STRUCTURE

Filed June 2, 1923

2 Sheets-Sheet 1

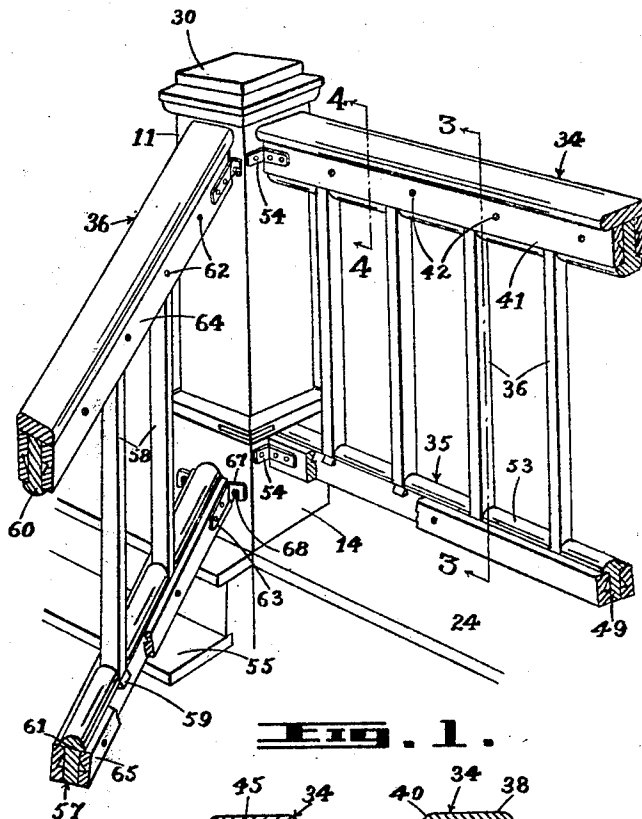


Fig. 1.

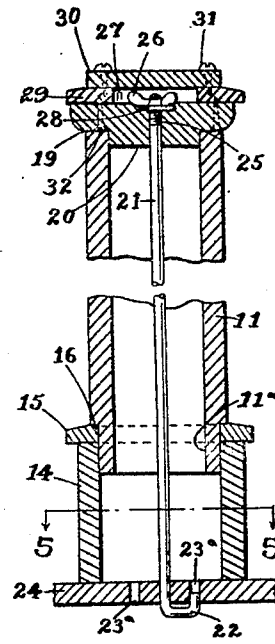


Fig. 2.

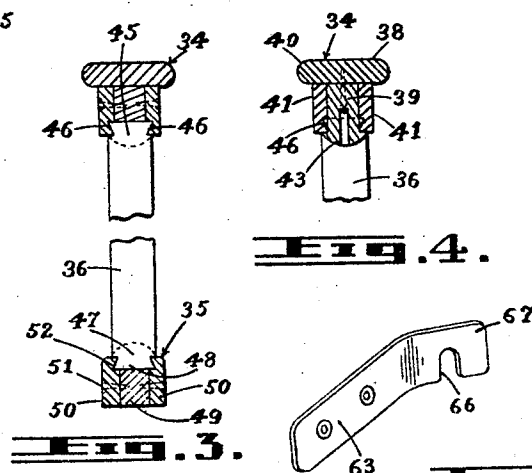


Fig. 3.

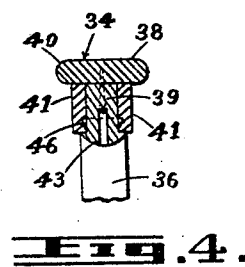


Fig. 4.

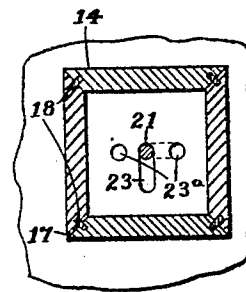


Fig. 5.

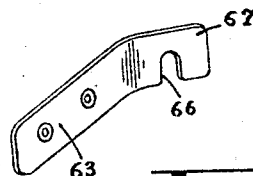


Fig. 6.

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2 Sheets-Sheet 2

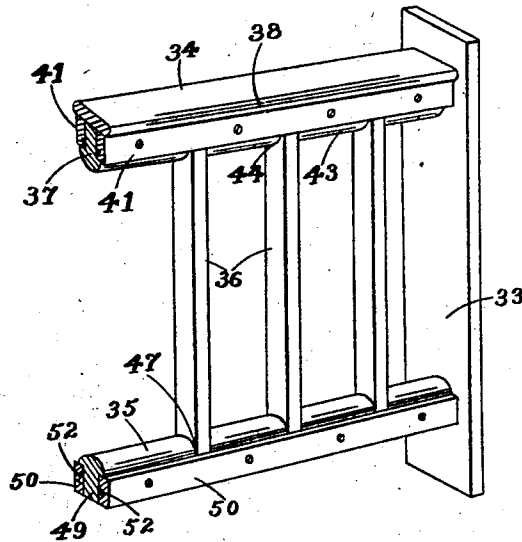


FIG. 9.

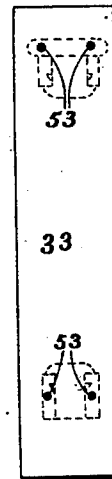


FIG. 10.

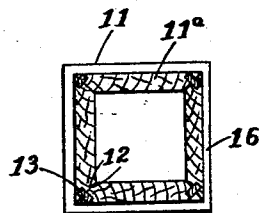


FIG. 7.

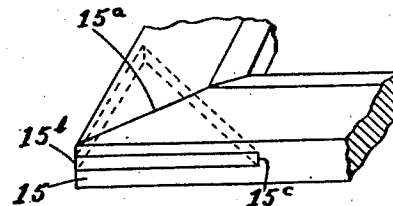


FIG. 8.

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UNITED STATES PATENT OFFICE.

GEORGE T. KNIGHT, OF MEAFORD, ONTARIO, CANADA.

BALUSTER AND RAILING STRUCTURE.

Application filed June 2, 1923. Serial No. 643,115.

To all whom it may concern:

Be it known that I, GEORGE T. KNIGHT, a citizen of the Dominion of Canada, and resident of Meaford, in the county of Grey and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Baluster and Railing Structures, of which the following is a specification.

10 This invention has relation to certain new and useful improvements in balusters and railing structure particularly for verandas.

An object of the invention resides in the provision of a baluster and railing structure of the knock down type and which will be composed of the minimum number of interlocking members which are manufactured in finished form and ready for assembling by removable connecting and securing members without injury to the parts.

15 The invention has for another object the provision of a baluster and railing structure of improved type and in which all of the parts may be produced at small expense and finished separately for assembling when building up the baluster and railing structure of desired size and length.

A further object of the invention resides in the provision of a baluster and railing structure of the character stated in which the baluster or corner post is manufactured in reinforced and finished sections and the upper and lower rails also constructed in longitudinal sections adapted to have locked therein the ends of the spindles employed between the main posts or balusters.

20 The invention has for a still further object the provision of a baluster and railing structure of the character stated with the parts constructed and arranged for interlocking in such a manner that they may be readily assembled or taken apart as desired and worn or broken parts replaced without the necessity of taking down the entire structure.

25 With the foregoing and other objects in view as will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of co-operating elements as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming a part of the present application, in which:

Fig. 1 is a perspective view of the structure, with parts broken away for the sake of clearness.

Fig. 2 is a vertical section through the main baluster or corner post.

Fig. 3 is a detail vertical section, substantially on the plane of line 3—3 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 4 is a detail vertical section substantially on the plane of line 4—4 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 5 is a horizontal detail section substantially on the plane of line 5—5 of Fig. 2, looking in the direction indicated by the arrows.

Fig. 6 is an enlarged detail perspective of one of the attaching brackets employed for attaching the railings to the main baluster or corner post.

Fig. 7 is a bottom plan of the main baluster or corner post.

Fig. 8 is an enlarged detail perspective, showing the corner construction of the frame member forming the water table of the main baluster or corner post.

Fig. 9 is a fragmentary perspective showing the construction of the false post and the connection of the railing with the same.

Fig. 10 is an elevation of the rear side of the false post and its connection with the railings.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, it will be noted that the main baluster or corner post 11 is formed in sections, the main section being of rectangular form in cross section and composed of side members having beveled longitudinal edges 12 connected together by the vertical corner strips 13 which extend the entire length of the main section, as will be seen from Fig. 7 which discloses the corner strips 13 as extending through the reduced lower portion 11^A of the main section. A base section 14 is also provided to receive the reduced lower end 11^A of the main section of the post 11, as shown in Fig. 2, after the reduced lower end 11^A has been extended through the frame member 15 forming the water table of the main baluster or corner post and resting on the top of the base section, with the outer edge of the frame member 15 extended past the base section 14 and the upper face of the frame member 15 slightly beveled so as to shed or carry off the water falling upon the same. It will be seen from Fig. 2, that the

shoulder 16 provided at the connection of the reduced lower end 11^A with the main portion of the main section of the post 11 rests upon the upper face of the frame member 15 when the post sections are assembled. The base section 14 is also formed of side members having their longitudinal edges 17 beveled and connected with one another by the corner strips 18, as shown clearly in Fig. 5. A newel cap 19 is mounted on the top of the main section of the post 11 and has a reduced portion 20 extending into the main section, as shown clearly in Fig. 2. A rod 21 is extended through the centre of the post with the lower end of the rod 21 formed into a hook 22 which is extended through an elongated slot 23 provided in the floor 24 or other support on which the main baluster or corner post 11 is mounted. A pair of openings 23' are provided in the floor or other support 24 to receive the hook 22 after the turning of the rod 21 and drawing of the rod 21 upwardly through the newel cap 19. The rod 21 has a threaded upper end 25 which receives a wing nut 26 or the like operating on a bearing washer 28 positioned around the rod 21 and resting in the pocket 27 provided for this purpose in the upper side of the newel cap 19. It will be evident that by tightening the wing nut 26 on the rod 21, the parts of the main baluster or corner post 11 will be drawn together and tightened on one another and also the main baluster or corner post 11 tightened on the floor or other support 24. The newel cap 19 has its under face rounded or convexed and is completed by the frame 29 secured on the upper face thereof and having its upper face beveled, as shown clearly in Figs. 1 and 2. The cap plate 30 forming the top of the main baluster or corner post 11 is secured on the frame 29 by screws 31 or other appropriate means. It is also to be understood that the frame 29 is secured on the main member of the newel cap 19 by screws 32 or other suitable securing means. By referring to Figs. 1 and 8, it will be noted that the frame member 15 is formed of sections having angularly cut ends 15^A connected together by the flat triangular plates 15^B extending into adjacent ends of the sections of the frame member 15 and resting in the pockets 15^C provided in said section for this purpose.

The false post 33 shown in Figs. 9 and 10 may be readily secured to a wall or the like so as to represent a post extending into the wall or permanent support against which it is positioned, although the false post 33 is only in the form of a plate. Extending from the main baluster or corner post 11 to the false post 33 are the upper railing 34 and the lower railing 35 which are formed in longitudinal sections, as will be described in detail and are connected by the auxiliary baluster posts 36. The upper railing 34 includes a fillet or core 37 on which the top plate 38 is secured by screws 39 or other suitable means, the top plate 38 having its longitudinal edges 40 rounded, as shown in the drawings, or being finished in any suitable manner desired. Side plates 41 are secured to opposite sides of the fillet or core 37 by screws 42 or other suitable means and the top 38 is of a proper width to extend past the side plates 41. As shown clearly in the drawings, the fillet or core 37 has a rounded bottom side 43 extended to either side and projecting over the lower edges of the side plates 41. Pockets 44 are provided in the fillet or core 37 to receive the dove-tailed upper ends 45 of the auxiliary balusters 36 and the side plates 41 are provided with longitudinal pockets 46 which are of substantially V-shaped form in cross section so as to receive the dovetailed upper ends 45 of the auxiliary balusters 36. This may be clearly understood by referring to Figs. 3 and 4 of the drawings.

The dovetailed lower ends 47 of the auxiliary balusters 36 rest in pockets 48 provided in the upper sides of the fillet or core 49 of the lower rail structure 35. Side plates 50 are secured on opposite sides of the fillet or core 49 by screws 51 or the like so that they may be readily removed, as desired. Longitudinal pockets or grooves 52 are provided in the side plates 50 to accommodate the dovetailed lower ends 47 of the auxiliary balusters 36 and prevent withdrawal of the same from the pockets 47 when the side plates 50 are in position. The rounded upper side 53 of the fillet or core 49 is extended to either side and engaged over the upper edges of the side plates 50, between the auxiliary balusters 36 when the parts of the lower railing structure are assembled. The upper and lower railing structures are removably secured to the false posts 33 by screws or other suitable securing members 53, as shown in Fig. 10. The screws 53 extend through the false post 33 and into the top plate 38 of the upper rail structure 34 and into the side plates 50 of the lower railing structure 35. This, however, may be altered as desired. The upper rail structure 34 is secured to one side of the main baluster or corner post 11 by angular brackets 54 removably secured to the main baluster or corner post 11 and to the side plates 41, as shown in Fig. 1 of the drawings. It will also be seen from this view that similar angular brackets 54 are employed to detachably connect the lower railing structure 35 with the main baluster or corner post 11. These last mentioned angular brackets 54 are detachably mounted on the side plates 50 of the lower railing structure 35 and on the base section 14 of the main baluster or corner post 11.

In Fig. 1 of the drawings the main baluster or corner post 11 is illustrated as being located at the top of the flight of steps 55, at the sides of which are located inclined railings constructed along the same principle as the horizontal railings, which have been described in detail. The upper railing structure 56 and the lower railing structure 57 correspond respectively to the upper railing structure 34 and the lower railing structure 35 extended between the main baluster or corner post 11 and the false post 33. The upper railing structure 56 and lower railing structure 57, however, are inclined and the upper and lower ends of the auxiliary balusters 58 employed in the inclined railing are beveled or cut on an angle. The dovetailed upper and lower ends 59 of the auxiliary balusters 58 are also beveled or cut on an angle so as to permit the auxiliary balusters 58 to be positioned in vertical planes. With the exception of the differences in the formation of the upper and lower ends 59 of the auxiliary balusters 58 they correspond with the construction of the auxiliary balusters 36. It is also to be understood that the pockets provided for the dovetailed upper and lower ends 59 of the auxiliary balusters in the upper and lower rail structures 56 and 57 are cut at the proper angle in the fillets or cores 60 and 61 of the upper rail structure 56 and the lower rail structure 57, respectively. Screws 62 or other appropriate fastening members are employed to detachably connect the parts of the upper rail structure 56 and the lower rail structure 57. In order that the inclined railing may be readily attached to or removed from the main baluster or post 11, angular bracket plates 63 are carried on the side walls 64 and 65 of the upper rail structure 56 and the lower rail structure 57, respectively. Notches 66 are provided in the free angular ends 67 of the angular brackets 63 for detachable engagement over the projecting supporting screws 68 or similar members projected from the side of the main baluster or corner post 11. One pair of the supporting screws 68 is carried by the upper part of the main section of the main baluster or corner post 11, while the other pair extends from the base section 14. It will, therefore, be seen that the inclined railing may be readily secured in position or removed without the necessity of taking apart the sections of the same.

It is believed the complete construction and arrangement of the elements of the present invention may now be clearly understood from the foregoing paragraphs taken in connection with the accompanying drawings without further detail description. It may be briefly stated, however, that all of the parts or elements may be manufactured separately and may be transported in sep-

arated or knock down condition, ready for assembling, as desired. It is also evident that the structure may be readily taken apart and elements or parts of the invention replaced without the necessity of employing special tools and the service of a trained workman. Furthermore the entire structure may be taken apart and transported for assembling in a different locality at small expense and without injury or damage to any of the parts or elements of the invention.

While the preferred embodiment of the invention has been disclosed, it is to be understood that minor changes in the details of construction, combination and arrangement of co-operating elements may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

What I claim as new is:

1. A baluster and railing structure formed from separate members detachably connected and interlocked with one another; the upper and lower rails including cores having pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said side plates; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

2. A baluster and railing structure built up from completed parts detachably connected to form the railings, the main baluster and the auxiliary balusters; the upper and lower rails including cores having pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said plates; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

3. A baluster and railing structure built up from separable elements detachably connected to form the railings, the main baluster and the auxiliary balusters connecting the upper and lower railings; the upper and lower rails including cores having

pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said side plates; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

4. A baluster and railing structure formed from separate members detachably connected and interlocked with one another; the main baluster being composed of sections interlocking with one another; and means for securely holding together the sections of the main baluster and retaining the main baluster firmly on its foundation; the upper and lower rails including cores having pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said side plates; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

5. A baluster and railing structure built up from completed parts detachably connected to form the railings, the main baluster and the auxiliary balusters; the main baluster being composed of sections interlocking with one another; and means for securely holding together the sections of the

main baluster and retaining the main baluster firmly on its foundation; the upper and lower rails including cores having pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said side plates; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

6. A baluster and railing structure built up from separable elements detachably connected to form the railings, the main baluster and the auxiliary balusters connecting the upper and lower railings; the main baluster being composed of sections interlocking with one another; and means for securely holding together the sections of the main baluster and retaining the main baluster firmly on its foundation; the upper and lower rails including cores having pockets formed therein and side plates removably secured on said cores; the auxiliary balusters including dovetailed ends removably engaged in the pockets of said cores; said side plates being formed to receive portions of said dovetailed ends of the auxiliary balusters and prevent withdrawal of the same from said cores when the side plates are in position on said cores; said cores having means thereon to extend over the upper edges of said side plate; said upper and lower rails being removably secured on the main baluster and other supporting members opposed to said main baluster.

In testimony whereof, I affix my signature.

GEORGE T. KNIGHT.