Feb. 1, 1927. 1,616,232

G. ROBERTS ET AL

SCREW CLAMP

Filed Nov. 27, 1925

Fig. 2

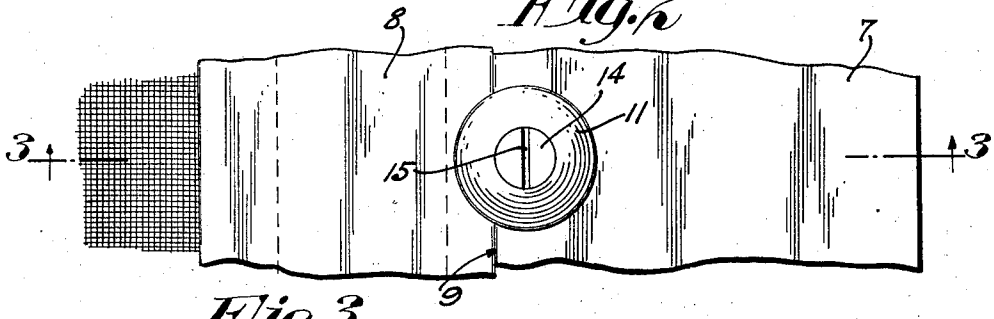


Fig. 3

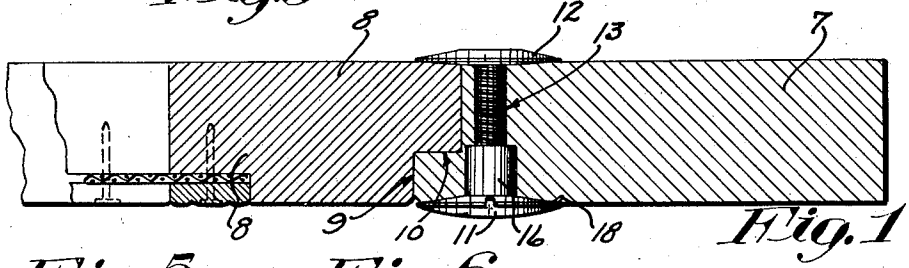


Fig. 1

Fig. 5

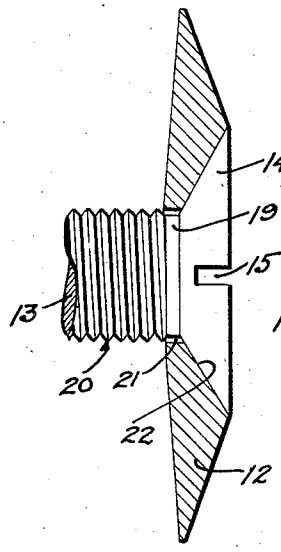
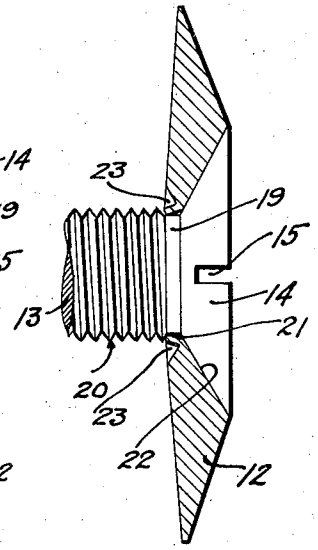


Fig. 6



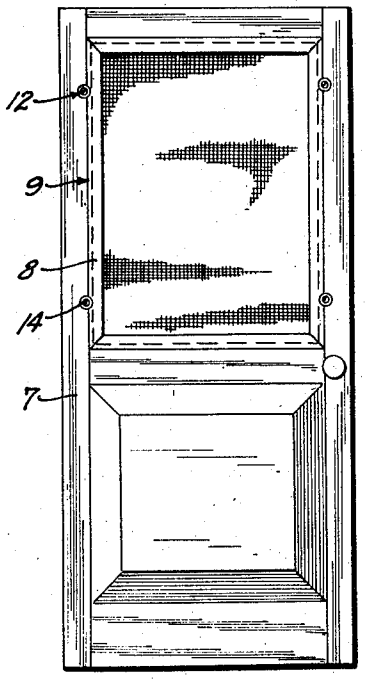
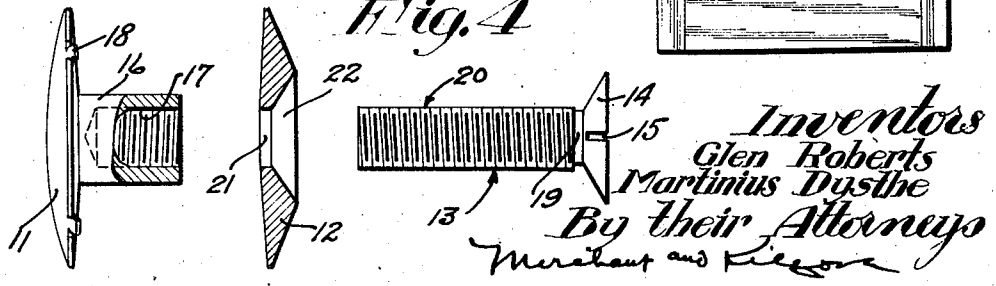


Fig. 4



Inventors
Glen Roberts
Martinius Dysthe
By their Attorneys
Merchant and Kiesow

Patented Feb. 1, 1927. 1,616,232

UNITED STATES PATENT OFFICE.

GLEN ROBERTS AND MARTINIUS DYSTHE, OF MINNEAPOLIS, MINNESOTA.

SCREW CLAMP.

Application filed November 27, 1925. Serial No. 71,653.

Our present invention has for its object to provide a simple and highly efficient screw clamp intended for general use, but especially adapted for detachably securing interchangeably usable screen and glass panels on doors, and of the type disclosed and claimed in our two pending U. S. applications, one of which was filed March 24, 1924 under Serial Number 701,421, and the other of which was filed December 19, 1924 under Serial Number 756,947.

To the above end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a front elevation of a door having a removable screen panel held in position by a plurality of the improved screw clamps;

Fig. 2 is a fragmentary inside elevation of the door, screen panel and one of the screw clamps, on an enlarged scale;

Fig. 3 is a detail view in section, taken on the line 3—3 of Fig. 2;

Fig. 4 is a view principally in elevation showing the members of one of the screw clamps separated;

Fig. 5 is a fragmentary detail view partly in elevation and partly in section showing, on an enlarged scale, the headed screw and the respective head member loosely applied thereto; and

Fig. 6 is a view corresponding to Fig. 5, but illustrating the head member rigidly secured to the headed screw.

In the drawings, there is illustrated a door 7 of the type having interchangeably usable screen and glass panels, the former of which is shown and indicated by the numeral 8. The outer edge portion of the panel 8 is rabbeted at 9 and mounted in a rabbeted seat 10 in the outer face of the door 7. Said screen panel 8 is removably held in place by a plurality (as shown four) of the improved screw clamps.

Each screw clamp comprises two disc-like head members 11 and 12, and a screw 13 having a head 14 the under side of which is beveled and in the top of which is a channel 15 for the application of a screw driver for turning said screw. The outer face of the head member 11 is convex and which head member has integrally formed with its back or inner face an axially projecting sleeve-like body 16 having an internal screw thread 17 and which body is applied to the screw 13 as a nut. The outer end of the sleeve-like body 16 is closed by the head member 11. Cut and pressed from the peripheral edge portion of the head member 11 is a plurality of inwardly projecting lugs 18 for holding said head member from turning at the time the screw 13 is applied thereto.

The headed screw 13 has a short unthreaded portion 19, just under its head 14, of a diameter slightly less than that of the diameter of the thread 20 on said screw. The screw thread 20 is formed by pressing the same from the body of the headed screw 13, the original diameter of which was the same as that of the unthreaded portion 19. By thus forming the screw thread 20, the same is pressed outward of the original diameter of the body of the headed screw 13 thereby giving the same an external diameter greater than that of the unthreaded portion 19 of said screw. The head member 12 is provided with an axial bore 21 of such diameter as to permit said head member to be moved axially over the screw thread 20 and be positioned around the unthreaded portion of the headed screw 13. In the outer face of the head member 12 is a countersunk seat 22 for the screw head 14. The outer face of the head member 12 is beveled from its countersunk seat 22 to its periphery.

After the head member 12 is positioned onto the headed screw 13 with its head 14 in the countersunk seat 22, an annular groove 23 is pressed into the inner face of said head member, just outward of and concentric with its bore 21, to displace or contract the stock of the head member 12 at the bore 21 onto the unthreaded portion 19 of said screw and to a diameter less than that of the screw thread 20, as shown in Fig. 6, to hold the head member 12 on the headed screw 13.

In applying the screw clamp to the door 7, a hole 24 is bored into the outer face of said door to receive the sleeve-like body 16 of the head member 11 and permit the inner face of said head member to bear directly on said door. A relatively small bore 25, axially aligned with the bore 24 is bored the rest of the way through the door 7 to receive the headed screw 13 which is screwed into the sleeve-like body 16 with the head member

12 bearing against the inner face of the door 7 and frame of the screen panel 8 and overlapping the joint therebetween, as shown in Figs. 1, 2 and 3.

By turning the screw 13 into the body 16 to clamp the head members 11 and 12 against opposite sides of the door 7 and with the head member 12 overlapping and bearing against the frame of the screen panel 8, said panel will be securely but detachably secured to the door 7. When turning the screw 13 into the body 16 with the head member 12 pressed against the door 7 and frame of the panel 8, said head member will be held by friction from turning, but the connection between the head member 12 and screw 13 is such as to permit the screw to turn in respect to said head member. By contracting the stock of the head member 12 at its bore 21 into the unthreaded portion 19 of the screw 13 and back of the screw thread 20, said head member and screw are connected in assembled relation.

What we claim is:

A screw clamp comprising two head members and a headed screw, one of said head members having an internally screw-threaded sleeve-like body applied to said screw, said screw having at the under side of its head a short unthreaded portion of a diameter less than that of the thread on said screw, the other of said head members having a bore through which the headed screw projects and which head member at its bore surrounds the unthreaded portion of the headed screw and has a countersunk seat in which the head of said screw is mounted, the stock surrounding the bore in the last noted head member being upset onto the unthreaded portion of the headed screw to a diameter less than that of the thread on said screw.

In testimony whereof we affix our signatures.

GLEN ROBERTS.
MARTINIUS DYSTHE.