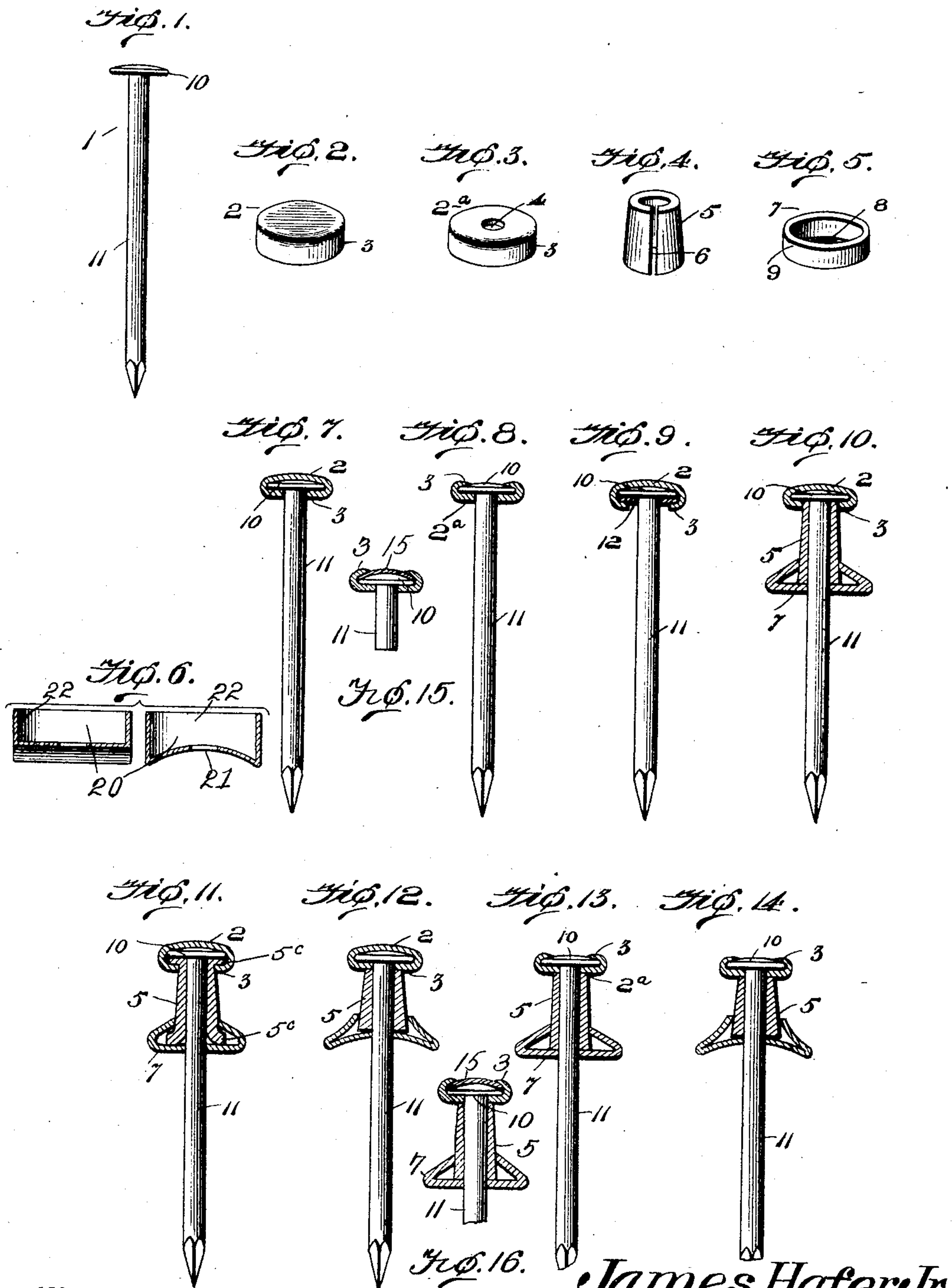


No. 779,647.

PATENTED JAN. 10, 1905.

J. HAFER, JR.
CARRIAGE KNOB.
APPLICATION FILED FEB. 9, 1904.



Witnesses
E. J. Stewart
Wm. Baggett

James Hafer, Jr.
Inventor
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

JAMES HAFER, JR., OF NEWPORT, KENTUCKY.

CARRIAGE-KNOB.

SPECIFICATION forming part of Letters Patent No. 779,647, dated January 10, 1905.

Application filed February 9, 1904. Serial No. 192,835.

To all whom it may concern:

Be it known that I, JAMES HAFER, Jr., a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Carriage-Knob, of which the following is a specification.

This invention relates to that class of devices which are known to the trade as "carriage-knobs" and which are used for the attachment of the carriage-curtains, said knobs being in the nature of buttons adapted to engage buttonholes or eyelets with which the curtains are provided.

The invention has for its object to provide a device of this class comprising a pointed shank, such as that of an ordinary nail, whereby the device may be driven into the wood-work of the carriage, a head forming a flange of sufficient size to constitute the retaining means, a washer member spaced from said head, and an intermediate spacing-shank.

A further object of my invention is to construct and assemble the several members in such a manner as to provide a simple, inexpensive, durable, and in all respects efficient article for the purposes indicated.

With these and other ends in view the invention consists in the improved construction, arrangement, and combination of parts to be hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation illustrating a nail which forms the nucleus of the device. Fig. 2 is a perspective view showing one form of cap member. Fig. 3 is a perspective view showing a modified construction of the cap member. Fig. 4 is a perspective view of the shank or spacing member. Fig. 5 is a perspective view showing one form of the washer member. Fig. 6 shows sectional views, enlarged, of another modified form of the washer member. Fig. 7 is a sectional view showing the nail provided with one form of the cap member. Fig. 8 is a sectional view showing the nail provided with another form of cap member. Fig. 9 is

a sectional view showing the nail provided with a cap member and with an interposed washer. Fig. 10 is a sectional view showing a nail provided with a cap member of the type shown in Figs. 2, 7, and 9, the shank or spacing member and a washer member of the type shown in Fig. 5 having also been applied. Fig. 11 is a view illustrating a modification of the device shown in Fig. 10, whereby the ends of the shank or spacing member are expanded under the flanges of the cap member and the washer member. Fig. 12 is a sectional view showing the nail, the cap member, the spacing-shank, and the washer member illustrated in Fig. 6 assembled in operative position. Fig. 13 is a sectional view showing the nail and cap members illustrated in Figs. 1 and 3, together with the shank member and washer illustrated in Figs. 4 and 5, assembled to form a complete article. Fig. 14 is a sectional view illustrating the nail and cap member shown in Figs. 1 and 3, together with the spacing-shank and washer shown in Figs. 4 and 6, assembled to form a complete device. Fig. 15 is a sectional view illustrating a modification of the construction shown in Fig. 8. Fig. 16 is a sectional view illustrating a modification of the construction shown in Fig. 13.

Corresponding parts in the several figures are indicated by similar numerals of reference.

In carrying out my invention I provide an ordinary headed nail, preferably a wire nail, which in the several views of the drawings has been designated 1. I also provide a cap member 2, which is provided with an annular flange 3 and which, as shown in Fig. 3, where it is designated 2^a, may be provided with a central perforation or orifice 4. I furthermore provide a shank or spacing member consisting of a metallic tube 5 of suitable dimensions provided with a longitudinal slit 6. This tube is preferably of a tapering or frusto-conical form, and the slit therein is provided for the purpose of enabling it to be readily adjusted upon the shank of a nail, which is of a diameter slightly larger than the interior

diameter of the said sleeve after the latter has been compressed, so as to cause the edges of the slit to meet. Consequently when the said tube is applied and compressed upon the shank
 5 of a nail it will bite firmly thereon and be retained with a degree of tenacity which will positively prevent its displacement by natural causes. By making the sleeve slightly tapering and of greater diameter at its lower end
 10 it will be enabled to better retain a washer member, which is also used in connection with this device. Said washer member, which is designated 7, is provided with a central perforation or orifice 8, which, as shown in Fig.
 15 5 of the drawings, may be provided with an upwardly-extending annular flange 9.

When in the process of manufacture the elements of the device are to be assembled, the cap member illustrated in Fig. 2 may be
 20 placed over the head 10 of the nail 1, and the flange 3 may then be compressed upon the under side of the head of the nail, as shown in Fig. 7. When the cap member illustrated in Fig. 3 is used, the shank 11 of the nail is
 25 caused to pass through the orifice 4 in said cap member, the flange of which is caused to extend in an upward direction, said flange being compressed upon the upper side of the nail. As illustrated in Fig. 9 of the draw-
 30 ings, a washer 12 may be placed against the under side of the nail-head prior to the clenching or compressing of the cap member 2, which, in this instance, is of the construction illustrated in Fig. 2 of the drawings. The
 35 flange of the cap member will thus be compressed against the under side of the washer 12. The head of the knob being formed in one of the ways just described, the next step is to place in position the shank or spacing member,
 40 which is accomplished by sliding the tube constituting said spacing member tightly against the under side of the head and then compressing the same upon the shank of the nail, as will be clearly understood by reference to Figs. 10
 45 and 12 of the drawings. In Fig. 11 the shank member has been shown as being not merely compressed upon the shank of the nail; but its ends have likewise been spread laterally, as seen at 5^c. Under this construction it be-
 50 comes necessary to place in position the shank 5 prior to the application of the cap member 2. The washer member, which is finally placed in position, is slid up against the lower edge of the shank member, and when the flanged
 55 washer member illustrated in Fig. 5 is employed the flange of said member is turned over in the direction of the shank 5 and compressed upon the latter, as will be seen in Figs. 10 and 11, the latter figure illustrating
 60 the lower end of the shank as being spread laterally, thus forming a very solid connection between the several constituent parts of the device. Under some circumstances—as,

for instance, when the device is applied to a convex surface—it is desirable that the washer
 65 member should have a concave under side, in which event the curved washer illustrated in Fig. 6 is used. This washer (here designated 20) has a transversely-curved under surface
 70 21 and a flange 22, and it is secured by peripheral compression upon the shank of the nail adjacent to the lower edge of the shank or spacing member 5, as clearly illustrated in Fig. 12 of the drawings.

In the forms illustrated in Figs. 13 and 14
 75 of the drawings the nail 1 is equipped with the cap member shown in Fig. 3, the flange of which is clenched over the head of the nail. In Fig. 13 the spacing member and the flanged washer member have been applied in substan-
 80 tially the manner illustrated in Fig. 10. In Fig. 14 the spacing member and the unflanged washer have been applied in substantially the manner shown in Fig. 12.

In Figs. 15 and 16 have been illustrated
 85 modifications of the constructions shown in Figs. 8 and 13, respectively, whereby a washer-plate 15 has in each case been placed on top of the nail-head prior to the clenching of the flange of the washer 3.
 90

In the process of manufacture all the individual members which enter into the make-up of a carriage-knob constructed in accordance with my invention are made from sheet-steel of proper dimensions stamped in suitable dies
 95 to the desired shapes. In the process of assembling the parts suitable compressing-dies are employed, whereby the members when finally assembled appear to be intimately connected. The material employed is intended
 100 to be of sufficient thickness to form an extremely durable and serviceable article, and it is the intention that the several parts shall be very tightly compressed upon the nail and with relation to each other, so that the device
 105 when finished may be driven into position without defacing or injuring any part thereof. Under the construction illustrated in Figs. 8, 13, and 14 it will be observed that the nail-head remains partially exposed, and the de-
 110 vice may thus be driven without the possibility of injury to any part thereof.

I desire it to be understood that while I have in the foregoing illustrated a preferred form of my invention I do not thereby necessarily
 115 limit myself to the structural details herein set forth, but reserve the right to such modifications as may be resorted to within the scope of my invention and without departing from the spirit or sacrificing the utility of the
 120 same.

Having thus described my invention, I claim—

A device of the class described including a headed nail, a flanged cap secured upon the
 125 head of the nail, a frusto-conical longitudi-

nally-slit tube secured to the shank of the nail
below the head, and an annularly-flanged
washer member secured upon the shank of
the nail adjacent to the slitted tube, the flange
5 of said washer member being in engagement
with the lower portion of said slitted tube.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

JAMES HAFFER, JR.

Witnesses:

HENRY A. FABER,

L. H. SWORMSTEDT.