

No. 672,040.

Patented Apr. 16, 1901.

F. A. NEIDER.
CARRIAGE CURTAIN KNOB.

(Application filed Apr. 16, 1898.)

(No Model.)

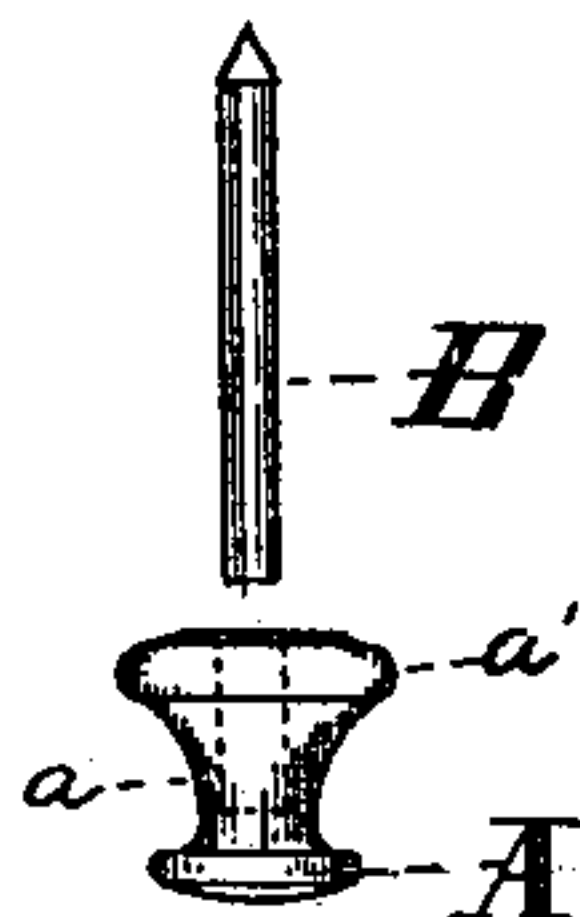


Fig 1

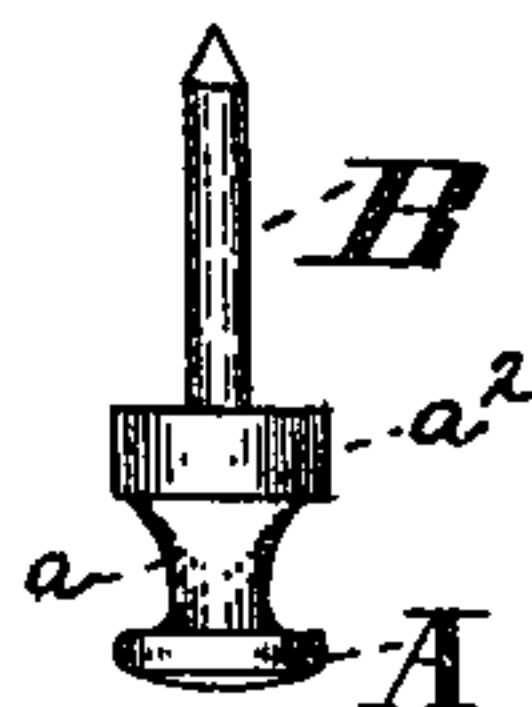


Fig 2

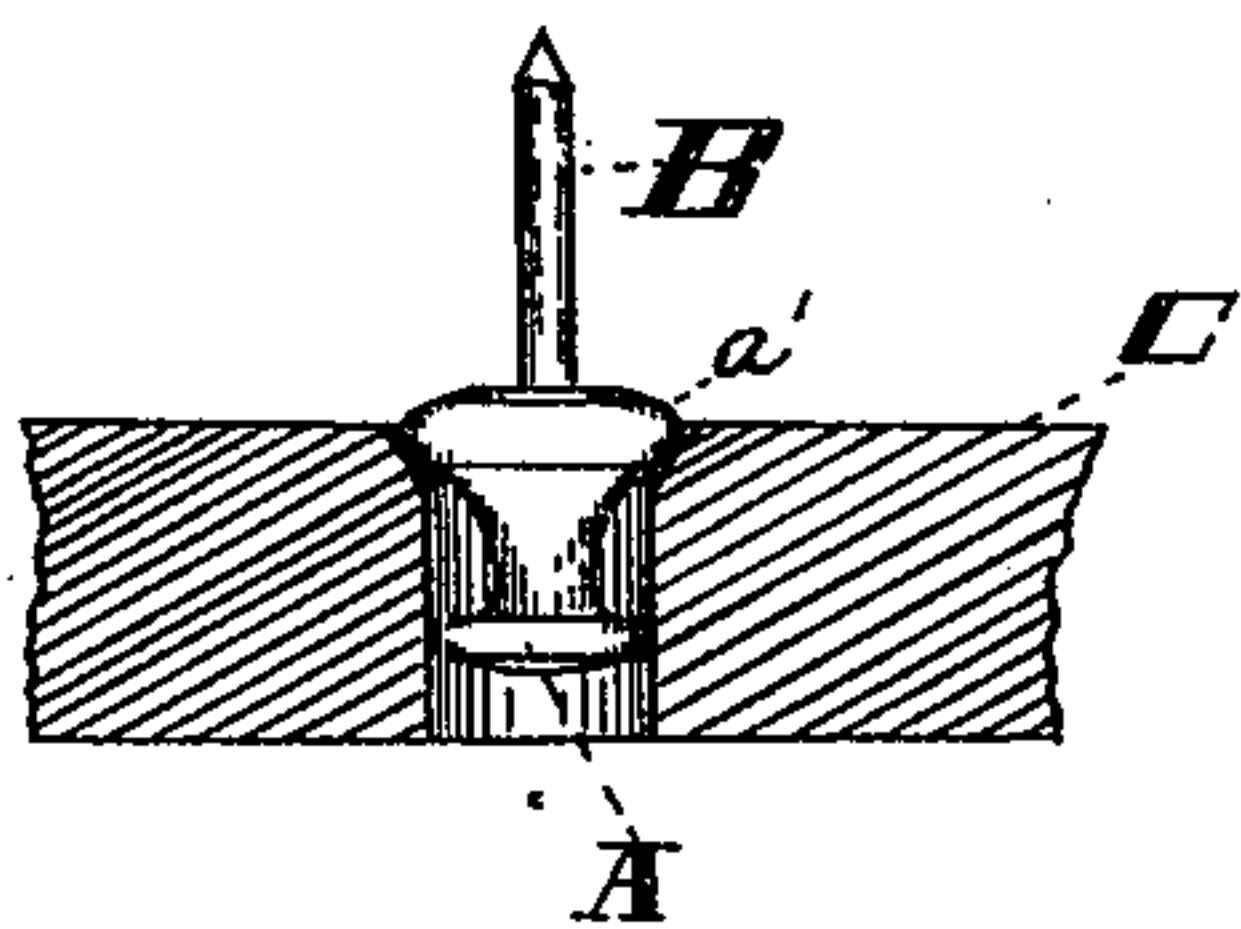


Fig 3

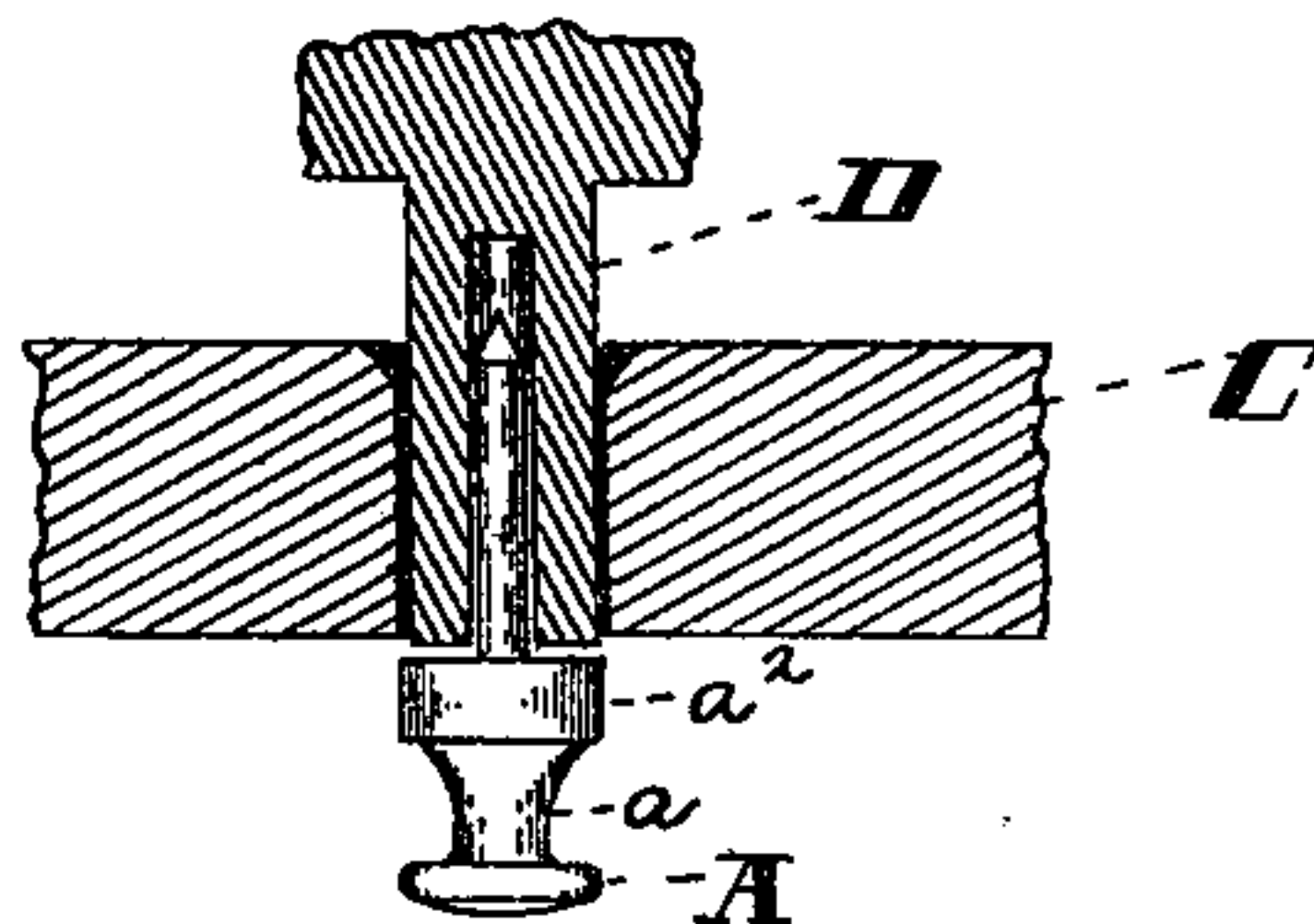


Fig 4

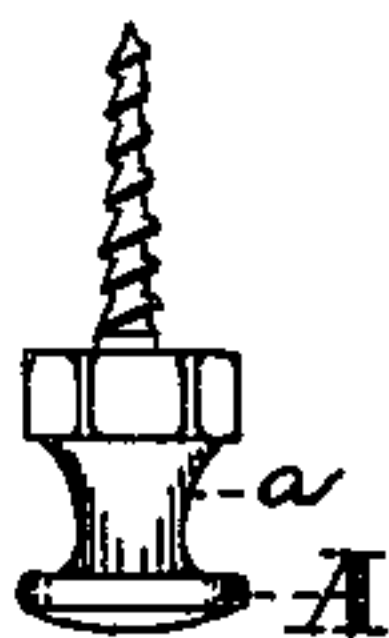


Fig 5

WITNESSES

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FRED A. NEIDER, OF AUGUSTA, KENTUCKY.

CARRIAGE-CURTAIN KNOB.

SPECIFICATION forming part of Letters Patent No. 672,040, dated April 16, 1901.

Application filed April 16, 1898. Serial No. 677,801. (No model.)

To all whom it may concern:

Be it known that I, FRED A. NEIDER, a citizen of the United States, and a resident of Augusta, in the county of Bracken and State of Kentucky, have invented certain new and useful Improvements in Carriage - Curtain Knobs, of which the following is a specification.

My invention relates to carriage-curtain knobs, and particularly to wrought-metal knobs. Its object is to cheaply produce a wrought-metal knob in which the shank is held firmly the full length of the bore, thus rendering it as strong and substantial as if the shank and head were formed of a single piece.

The invention consists in forming the head with an enlarged base axially perforated into the neck to receive the pin or shank and then drawing the base down to the proper size, compressing the metal and drawing it down along the shank, so that it bears upon the shank the full length of the embedded portion. The means by which I attain these results will be first fully described, and my invention particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a view in side elevation of the head-blank and the shank above it ready to be inserted in the bore. Fig. 2 is a side elevation of the completed nail. Fig. 3 is a side elevation of the head-blank and shank inserted therein, the head being inserted in the drawing-die, which is shown in section. Fig. 4 is a view similar to Fig. 3, with the punching-die at its finished stroke, showing the finished knob as it appears after being forced through the female die. Fig. 5 is a side elevation of the knob with a screw instead of a nail and the base formed hexagonal to seat a key for turning the knob to drive the screw to its seat.

I have heretofore invented and manufactured wrought-metal carriage-curtain knobs in which the shank was forced into the head and others in which the lower part of the base was upset to clasp the shank; but in the processes formerly used I have found by ex-

perience that in forcing the metal of the base around the shank to tightly grasp it the forcing had a tendency to spread the bore inside of the head-base, so that while the shank was grasped and held in position for driving, it was held only at the junction of the shank and the lower part of the base, so that in rough usage the pin was liable to move to one side or the other in the enlarged bore above and liable to turn when screwed to its seat if a screw-shank instead of a nail were used. This I remedied by compressing the neck between half-dies, which took time and had a tendency to form a ridge along the side of the base and neck where the joints of the half clamping-dies met. By my present improvement I overcome these difficulties by making the base larger than required and drawing the metal around the shank or pin by forcing the enlarged portion through the die, which operation is rapidly performed and leaves the base with a bright finished surface.

Referring to the parts with reference to the driving knob or nail, A is the head of the knob, a its neck, and a' the enlarged base, which is drawn down around the shank B to form the finished base a^2 . The blank for the knob shown in Figs. 1 and 3 is preferably formed up in a heading-machine, but may be turned from a rod of suitable size or by the forge-rolling process. The bore through the lower die C is made of a size to snugly fit the finished head to steady the knob while it is being forced through it by the punch or plunger D. The upper edge of the die C around the perforation is flaring to start the base a' into the lower die without cutting or injuring the metal. The diameter of the plunger or die D being slightly smaller than the finished base a^2 permits the rounded bead a' to crowd up as the knob is forced through the lower die without binding upon the shaft or plunger D, which is axially bored to freely receive the shank B and, together with the edge of the head, steady the knob in its passage through the lower die. The lower edge of the bore of the plunger D is preferably slightly flaring to facilitate the entrance of the pin or screw, and it is noticed that the base of the blank is slightly rounding, so that when the plunger drives the knob through the die

it will be forced flat, as shown in the finished knob, to rest squarely upon the part which receives the knob.

To form the knob shown in Fig. 5, the same blank, Figs. 1 and 2, is employed; but the opening through the lower die and the plunger in cross-section are both formed hexagonal to form the angular collar by which the knob is driven to its seat.

10 The operation is as follows: The knob, Fig. 1, is first placed in the lower die, the head and base centering it truly, the shank, which is made to loosely fit the plunger, slipped in place in the axial bore of the base and neck, 15 and the plunger brought down, forcing the knob through the die, when it drops out beneath in its finished state. The upper die or plunger D operates continuously, and there is ample time to place the knob and shank in 20 position after it is raised before it descends to force the knob through the lower die if fed by hand; but for the rapid manufacture of these knobs, which I can make much cheaper than the old cast-iron knob, the knob and 25 shank may be fed automatically to the dies by mechanism which it is not necessary to describe here, as I intend to make the machine the subject of a separate application.

What I claim as new is—

30 1. The wrought-metal curtain-knob having its head, neck and base formed integral and

the base and neck axially bored, and the shank secured therein by drawing the said neck and base around the inserted end of the shank by driving them through a die, substantially as shown and described. 35

2. The herein-described blank for the head and base of carriage-curtain knobs having the base larger than the head of the knob, rounded upon the under side and axially bored to receive the shank, whereby the said blank with the shank inserted in its bore may be placed in a flaring-mouthed die and forced through said die to flatten the lower side of the base and draw the metal of the base firmly upon 45 the shank, substantially as shown and described.

3. The herein-described process of uniting the head and shank of carriage-curtain knobs which consists first in placing the shank in an axial bore in the knob-blank the base of which is larger than both the head and the base of the finished knob, and then in driving the knob through a perforation of the dimensions of the finished base to press the metal of the 55 base inward and draw it down around the shank to hold them firmly together, substantially as shown and described.

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Witnesses:

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