No. 639,006. Patented Dec. 12, 1899.

H. G. VOIGHT.

KNOB ATTACHMENT.

(Application filed July 27, 1899.)

(No Model.)

Fig. 1.

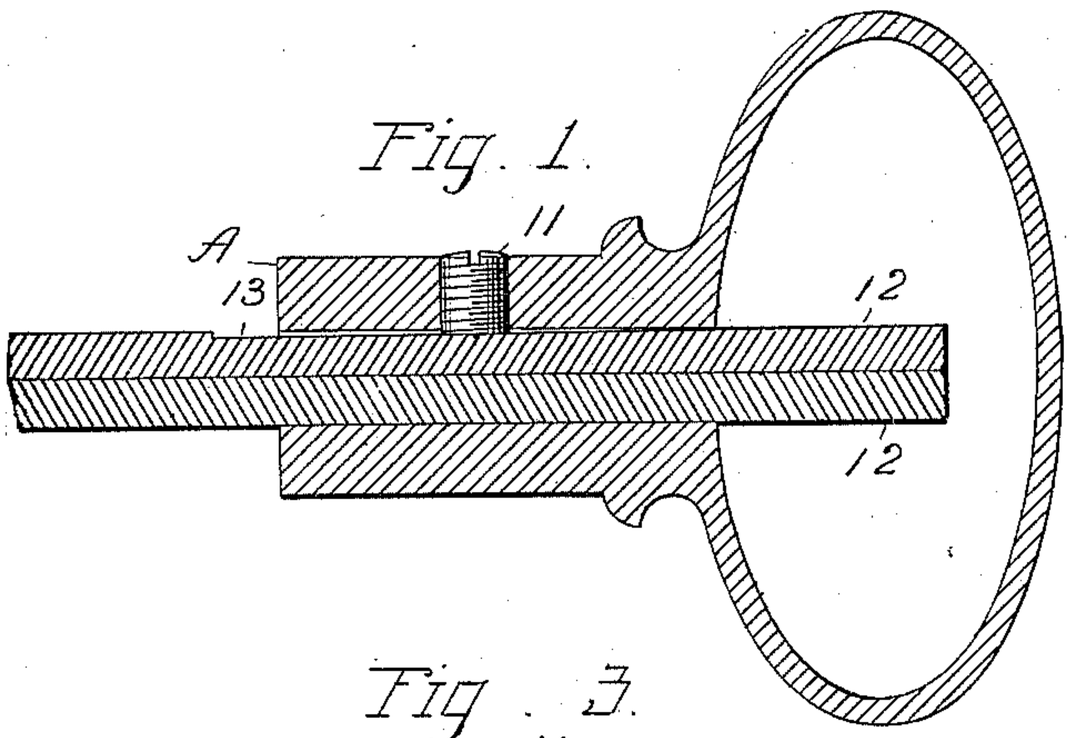


Fig. 2.

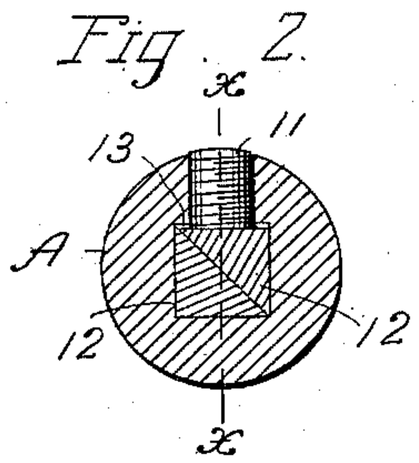


Fig. 3.

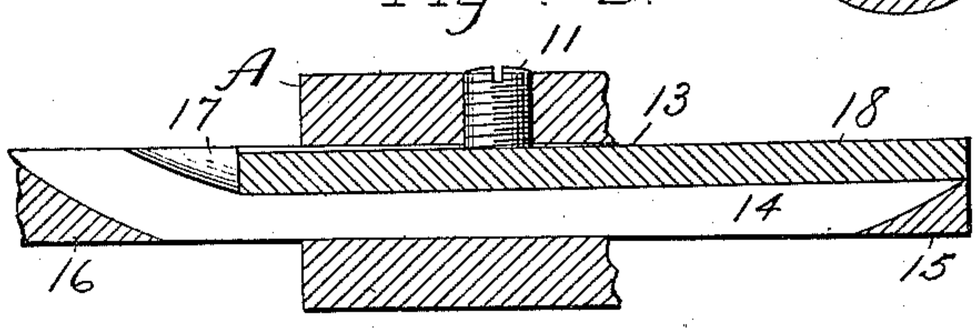


Fig. 4.

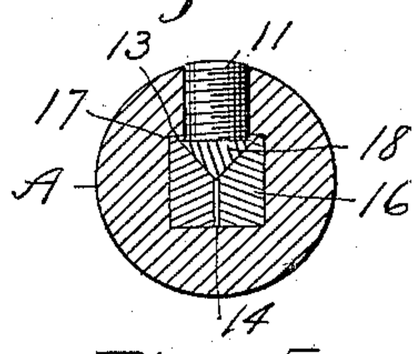


Fig. 5.

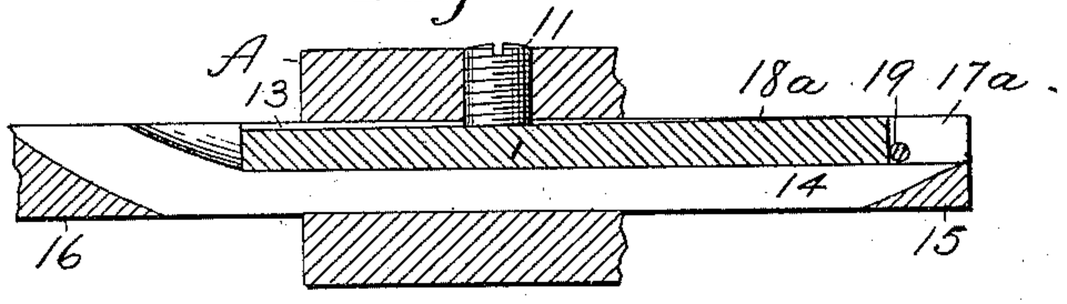


Fig. 6.

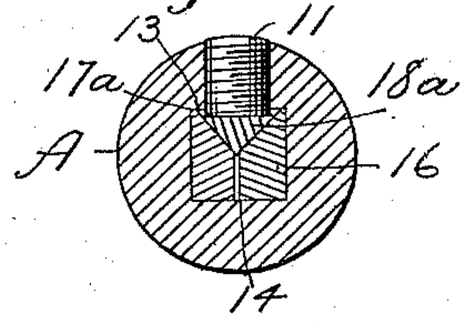


Fig. 7.

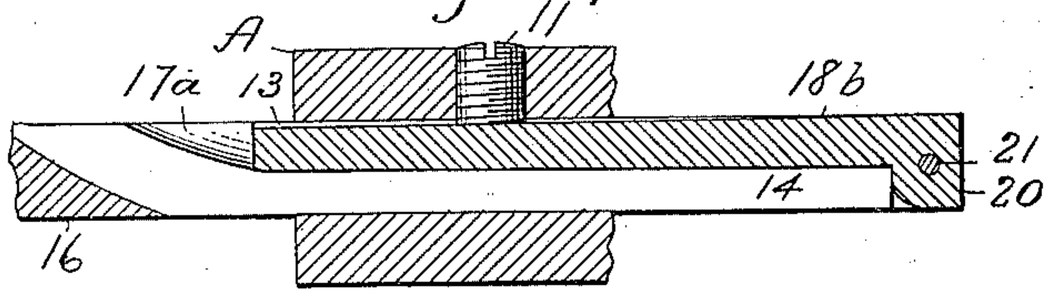


Fig. 8.

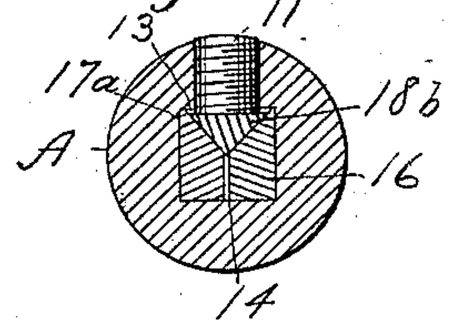


Fig. 9.

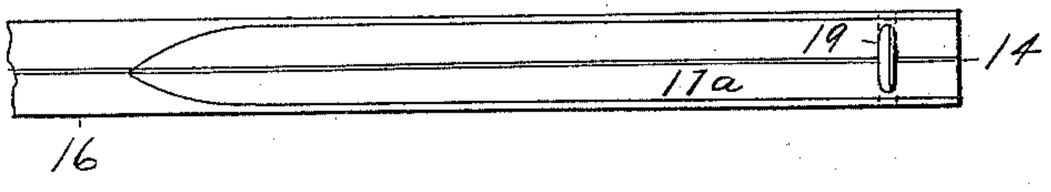
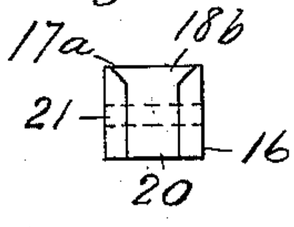


Fig. 10.



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Inventor
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By James Shepard.
Attys.

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

KNOB ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 639,006, dated December 12, 1899.

Application filed July 27, 1899. Serial No. 725,276. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing in New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Knob Attachments, of which the following is a specification.

My invention relates to improvements in door-knob attachments; and the main object of my improvement is efficiency of the article.

In the accompanying drawings, Figure 1 is a central longitudinal section of my door-knob and one end of the knob-spindle, the plane of section being indicated by the line *x x*, Fig. 2. Fig. 2 is a transverse section of the same on a plane through the fastening-screw. Figs. 3 and 4, 5 and 6, and 7 and 8 are corresponding views of my knob-shank and one end of the knob-spindle, illustrating three different constructions. Fig. 9 is a detached plan view of one end of the knob-spindle shown in Fig. 5, and Fig. 10 is an end view of the knob-spindle illustrated in Fig. 7.

In all of the several constructions an expanding or split spindle is illustrated, the divisions thereof being on inclined lines, so that the spindle is expanded to fill the socket in the knob-shank by the wedging action of the parts under the influence of the set-screw or equivalent fastening device, and in all of them the seat for the set-screw is also longitudinally inclined or wedge-shaped, so that the screw holds tighter and tighter under the pulling action of the knob.

In Figs. 1 and 2 the expanding portion of the spindle is a "two-part knob-spindle with confronting oblique faces," with a set-screw 11 for a fastening device, in accordance with the patent to Burgess, No. 472,725, dated April 12, 1892. A designates the knob-shank, and 12 12 the two parts of the knob-spindle. On that face of one of the spindle parts which is to receive the end of the fastening device or screw 11 I form a longitudinally-inclined or wedge-shaped seat 13, the taper of which is such as to bind the screw tighter and tighter under the pulling strain on the knob, whereby I not only prevent the screw from working loose, but make it unnecessary to fasten the screw so tightly in the first place as when the first tightening is alone depended upon to hold the knob on the spindle. In Figs. 1 and 2 this wedge-shaped portion is formed by milling or otherwise removing the metal from one side of the spindle.

In Figs. 3 and 4 I do not split or divide the spindle 16 for its whole length, but split a portion of the spindle adjacent to the fastening-screw by a longitudinal slit 14, leaving a connecting-web 15 at the outer end of the spindle, and in the top I mill a V-shaped groove 17, the said groove being tapering or wedge-shaped, with its deepest portion farthest from the connecting-web at the outer end of the knob-spindle. I fill the said groove with a triangular spindle part 18, having straight sides from end to end, whereby when said spindle part is placed in the tapering groove the top side thereof forms the tapering or inclined wedge-shaped seat 13 for the screw, whose function and operation are the same as that of the like seat in the construction first described in connection with Figs. 1 and 2, but with this distinction, that two parts of the divided or split spindle are rigidly connected by a solid web at their outer ends.

In Figs. 5, 6, and 9 I show substantially the same construction as in Figs. 3 and 4, only the V-shaped groove 17^a is straight and the triangular spindle part 18^a is tapered on the set-screw seat 13 to give the wedging taper before described, and in order to prevent this part 18^a from slipping longitudinally in the groove under the pulling strain on the knob I place the stop-pin 19 across said groove at the outer end of the part 18^a. In Figs. 3 and 4 the longitudinal taper of groove 17 performs the function of this stop-pin 19.

In Figs. 7, 8, and 10 I follow in part the same construction, but omit the web 15 by carrying the split to the end of the spindle, the groove 17^a being straight and the part spindle 18^b being tapering to form the screw-seat 13, while the outer end of the part 18^b is provided with a hinge-lug 20, let into a recess at the outer end of the knob-spindle, where it is secured against moving longitudinally by a pin 21. The said pin also serves to connect the two parts of the main portion of the spindle 16 that lie on opposite sides

of the split 14, whereby an undue expansion of the extreme outer end of the spindle is prevented, and at the same time the portion adjacent to the fastening-screw is sufficiently expansive to bind the spindle firmly in the socket of the knob-shank.

It is apparent that some changes from the specific construction herein disclosed may be made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. In a knob attachment having a longitudinally-divided and laterally-expansive spindle, the combination of the fastening device with a longitudinally-tapering and wedge-shaped seat on that side of the spindle which faces the said fastening device, substantially as described.

2. In a knob attachment, the longitudinally-divided and laterally-expansive spindle, having two of its parts firmly connected together at the outer end, substantially as described.

3. In a knob attachment, the spindle consisting, at its divided portion, of two main parts having the V-shaped groove in one side of said two parts, a triangular part spindle fitting the said groove, with its outer face forming the longitudinal tapering wedge-shaped seat for the fastening device, and means, in addition to the set-screw and knob-shank socket, for preventing the said triangular part from moving endwise out of place within the said groove, substantially as described.

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