

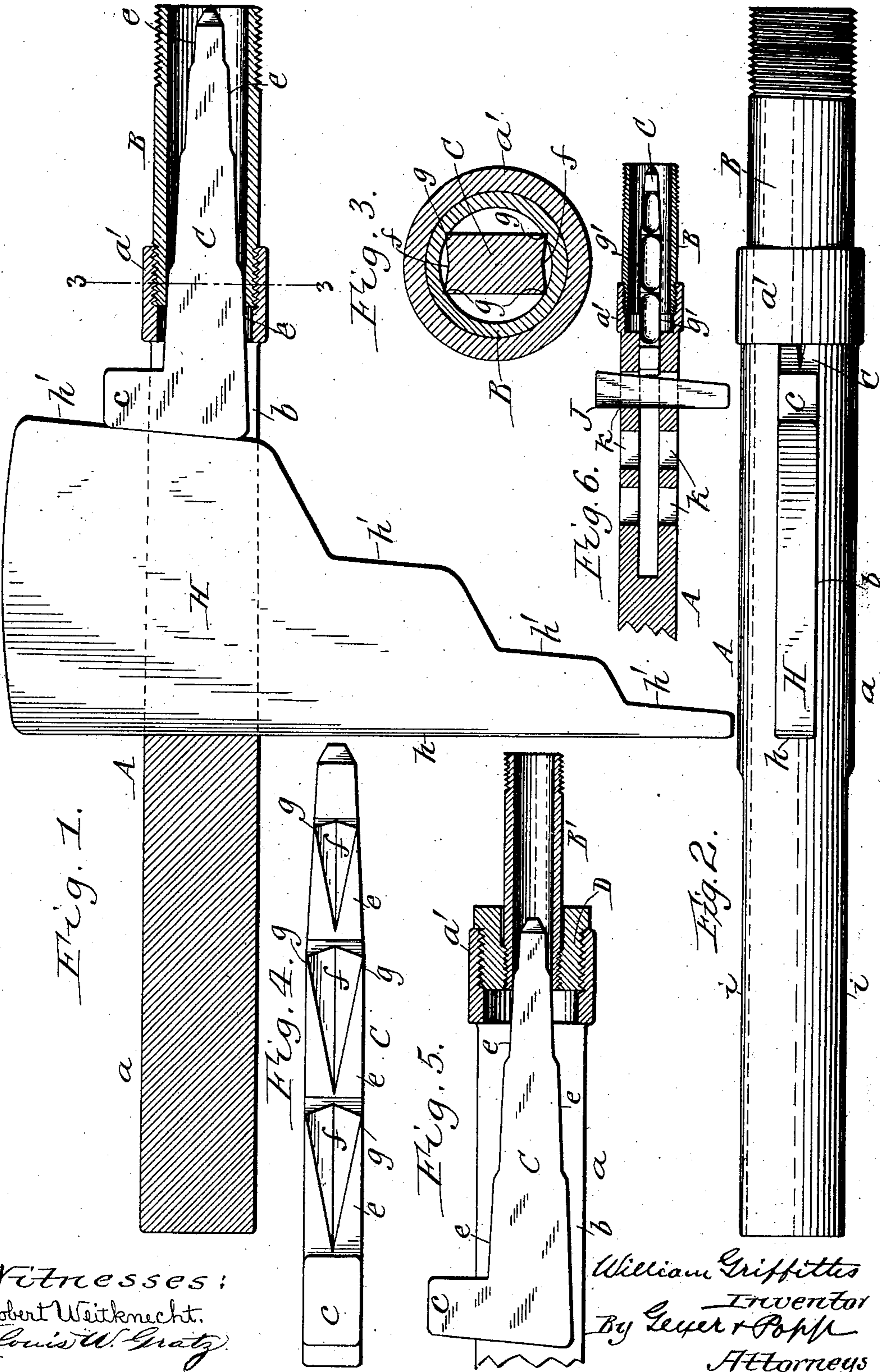
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W. GRIFFITHS.  
NIPPLE HOLDER.

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NO MODEL.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## NIPPLE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 745,344, dated December 1, 1903.

Application filed August 10, 1903. Serial No. 168,864. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GRIFFITHS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Nipple-Holders, of which the following is a specification.

In making externally-screw-threaded nipples such as are employed for connecting radiators with the pipes of a heating system much difficulty is experienced in holding the nipples while cutting the threads thereon. This is particularly the case when right and left hand screw-threads are cut on opposite ends of the nipple.

The object of this invention is to produce a nipple-holder which is simple and durable in construction, reliable in operation, and can be easily manipulated.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved nipple-holder. Fig. 2 is a top plan view of the same. Fig. 3 is a cross-section, on an enlarged scale, in line 3 3, Fig. 1. Fig. 4 is a detached top plan view of the nipple-clamping wedge. Fig. 5 is a fragmentary section showing the means for holding small sizes of nipples. Fig. 6 is a fragmentary longitudinal section showing a modification of the means for tightening the clamping-wedge.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents the chuck or body of the nipple-holder, which consists, essentially, of a shank or stem *a* and a tubular socket *a'*, arranged at its front end. The socket is provided with an internal right-hand screw-thread adapted to receive a nipple B, which has a right-hand screw-thread at its rear end and which is the largest size intended to be held by that particular holder. In rear of the socket the shank is provided with a longitudinal slot *b*, which communicates at its front end with the socket.

C represents a clamping-wedge whereby the nipple is held against turning in the socket while the thread is being cut on the outer end thereof. This wedge consists of a longitudinal body and a head *c* projecting laterally from the rear end of the body. The body of the wedge is oblong in cross-section, and its

narrow sides or edges converge from the rear end of the body to the front end thereof, while its wide sides are straight and substantially parallel. The wedge is introduced into the inner end of the nipple with its narrow end advancing through the slot in the shank and the inner or rear end of the socket. Upon driving the wedge outwardly after the same has been placed in the nipple its corners embed themselves in the bore of the nipple, so that these parts are firmly interlocked. The narrow dimension of the wedge is equal to the width of the slot in the shank, whereby the wedge when placed in the slot engages its flat sides with the flat sides of the slot and is prevented from turning in the chuck, thereby securely holding the nipple in place. While the nipple is thus held, either a right or left hand thread may be cut on the outer end thereof.

In order to permit of holding nipples B' of smaller size or diameter, a plurality of bushings D of different sizes are provided. Each of these bushings screws into the socket and is provided with an internally-screw-threaded opening which receives the threaded end of a nipple which fits that particular bushing.

For the purpose of enabling the wedge to obtain a firm grip on the nipples the angle of its inclined faces is made comparatively flat, In order to permit of thus making the inclined faces of the wedge comparatively flat without, however, making the wedge unduly long to fit different sizes of nipples, each of the inclined faces of the wedge is constructed to form a series of steps or offsets *e*, all of which incline at the same angle. The corresponding steps on opposite sides of the wedge are arranged transversely in line and form pairs, each of which is designed to fit the bore of one size of nipple.

If the corners of the wedge were left rectangular, they would not readily embed themselves in the bore of the nipple and would require considerable power to drive the wedge sufficiently tight to hold the nipple against turning, because the inclined faces of the wedge are so nearly parallel to the bore of the nipple when the latter is of comparatively large diameter. For the purpose of enabling the wedge to grip the nipple more readily

each of the inclined faces except those of the narrowest part of the wedge is provided with a longitudinal groove  $f$ , the sides of which converge from the front low part of the inclined face toward the high part thereof, as shown in Fig. 4, forming rearwardly-tapering cutting edges  $g$  on the corners of the wedge. Upon driving the wedge into a nipple the pointed front ends of its cutting edges engage first with the bore of the nipple and embed themselves therein, and during the continued tightening of the wedge the same is firmly interlocked with the nipple by the wedge action of its corners, thereby firmly holding the nipple against turning. The foremost or front section of the wedge is square, or nearly so, in cross-section, and its corners are able to embed themselves in a nipple of small diameter sufficiently tight to hold the same firmly in place.

If desired, the clamping-wedge may be driven into and out of the nipple by hitting the same with a hammer, for which purpose the head of the wedge is made sufficiently wide so that it projects beyond the side of the shank, where it can be hit by the hammer when the wedge is inserted in the shank and nipple. Instead, however, of tightening the clamping-wedge by hitting the same directly with a hammer I prefer to employ for this purpose a separate tightening-wedge  $H$ , which is driven transversely through the slot in the shank, between the rear end thereof and the rear end of the clamping-wedge. One side of the wedge preferably has a continuous straight face  $h$ , while the opposite side thereof is stepped or offset at intervals, as shown at  $h'$ . This permits of making the tightening-wedge comparatively short and still render the same capable of cooperating with the clamping-wedge in the various longitudinal positions which the same occupies in gripping different sizes of nipples. In using the tightening-wedge its straight side is preferably engaged with the back of the shank-slot, while its stepped side is engaged with the back of the clamping-wedge. When the clamping-wedge is in its foremost position and gripping a nipple of the largest diameter suited to that particular tool, the widest part of the tightening-wedge is interposed between the shank and the clamping-wedge, as shown in Fig. 1. Upon holding a nipple of smaller diameter the clamping-wedge is drawn rearwardly for engaging the bore of the nipple by a narrower section of the clamping-wedge, and a correspondingly narrower part of the tightening-wedge is driven between the clamping-wedge and the shank.

Although this holding device is especially desirable for holding nipples upon which right and left hand screw-threads are to be cut at opposite ends, it is also useful for holding nipples upon which right-hand screw-threads are to be cut at both ends.

In order to permit of holding the tool firmly

in a vise or otherwise while cutting a thread on the nipple, the sides of the shank are made flat, as shown at  $i$ , to enable the vise to obtain a firm grip on the same.

Instead of employing a stepped wedge for tightening the clamping-wedge the same result may be obtained by a plain tightening-wedge  $J$ , which is shifted from one pair of openings  $k$  in the shank to another pair of a longitudinal series for adapting the tightening-wedge to the different positions of the clamping-wedge, as shown in Fig. 6. This modified construction also shows the corners of the clamping-wedge formed with straight cutting edges  $g'$  instead of tapering.

I claim as my invention—

1. A nipple-holder comprising a chuck for supporting the nipple, and a clamping-wedge for holding the nipple against turning having its bearing-surface constructed in the form of a series of inclined steps which are adapted to engage with the bore of different sizes of nipples, substantially as set forth.

2. A nipple-holder comprising a tubular chuck for supporting the nipple, and a clamping-wedge for holding the nipple against turning having its bearing-surface constructed in the form of a series of inclined steps which are adapted to engage with the bore of nipples having different diameters, the inclination of the several steps of the wedge being of the same angle, substantially as set forth.

3. A nipple-holder comprising a chuck for supporting the nipple, and a clamping-wedge for holding the nipple against turning having its opposite longitudinal sides constructed in the form of a series of inclined steps which are adapted to engage with the bore of different sizes of nipples, the inclination of the several steps being of the same angle and the corresponding steps on opposite sides of the wedge being transversely in line, substantially as set forth.

4. A nipple-holder comprising a chuck for supporting the nipple, a clamping-wedge constructed in the form of a series of steps which are adapted to engage with the bore of different sizes of nipples, and a tightening-wedge engaging with the clamping-wedge, substantially as set forth.

5. A nipple-holder comprising a chuck for supporting the nipple, a clamping-wedge constructed in the form of a series of steps which are adapted to engage with the bore of different sizes of nipples, and a tightening-wedge constructed to form a series of inclined steps which are adapted to engage with the clamping-wedge in holding different sizes of nipples, substantially as set forth.

6. A nipple-holder comprising a chuck having a tubular socket for supporting the nipple and a longitudinal slot in rear of the socket, a clamping-wedge constructed in the form of a series of inclined steps which are adapted to engage with the bore of different sizes of nipples, and a tightening-wedge having a continuous or straight inclined face on

one side which engages with the rear end of  
said slot and a series of inclined steps on its  
opposite side which engage with the rear end  
of the clamping-wedge, substantially as set  
5 forth.

7. A nipple-holder comprising a chuck hav-  
ing a socket which receives the nipple and a  
longitudinal flat-sided slot in rear of said  
socket, and a clamping-wedge constructed to  
10 engage the bore of the nipple and having flat

sides which engage with the corresponding  
sides of the slot for preventing the wedge  
from turning in the chuck, substantially as  
set forth.

Witness my hand this 7th day of August, 15  
1903.

WILLIAM GRIFFITHS.

Witnesses:

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THEO. L. POPP.