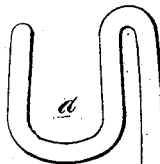
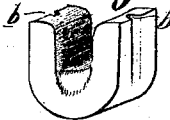
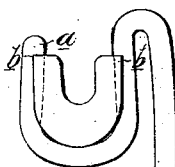


*Patented Dec. 27. 1870.*

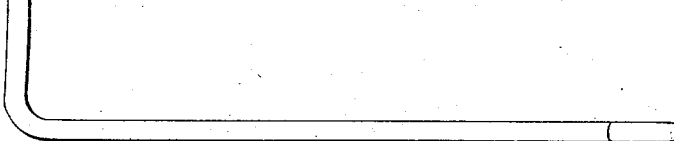
*Fig 2.*



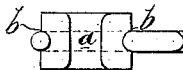
*Fig. 3.*



*Fig. 4*



*Fig.5.*



Howson and Son

Witnesses. { Jno. B. Harding.  
                  { Thos. McIlwain.

# United States Patent Office.

WILLIAM W. ALTEMUS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 110,535, dated December 27, 1870.

## IMPROVEMENT IN THREAD-GUIDES AND HOLDERS FOR BOBBIN-WINDING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM WILKINSON ALTEMUS, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an improved Thread-Guide and Holder for Bobbin-Winding Machines, of which the following is a specification.

### *Nature and Object of the Invention.*

My invention consists of a U-shaped porcelain thread-guide sprung into and adapted to a holder, as fully described hereafter.

### *Description of the Accompanying Drawing.*

Figure 1 is a side-view of the U-shaped thread-guide;

Figure 2, a perspective view of the same;

Figure 3, a side view of the holder;

Figure 4, a view of the guide as it appears when adapted to the holder; and

Figure 5, a plan view of fig. 4.

### *General Description.*

My improved thread-guide consists of a holder, to which is fitted a block of porcelain, which material, in its manufacture for this purpose, is subjected to so intense a heat that it is many times harder than glass. The porcelain is also slightly elastic, so that, with ordinary usage, it is not liable to become broken.

The guide has a smooth or glazed surface, and is rounded so as to offer as little resistance as possible to the passage of the thread, and it is also made of a U-shape, as seen in figs. 1, and 2, so that the thread will only require to be dropped into it.

The holder represented in fig. 3 consists of a wire having a bent end, *a*, adapted to grooves *b b* formed on the opposite edges of the guide, the latter being merely sprung into or forced down with a slight degree of pressure into the bent end of the holder, and being thus firmly retained.

The holder and guide have the usual reciprocating or traversing motion imparted to them as the thread is wound upon the bobbin.

### *Claim.*

A holder of bent wire, having a U-shaped elastic end adapted to a similarly-shaped porcelain thread-guide, and retaining the same by its elasticity, as set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

W. W. ALTEMUS.

Witnesses:

WM. A. STEEL,  
HARRY SMITH.