J. P. ADAMS.
Manufacture of Metal Knob Shanks.

No. 165,972. Patented July 27, 1875.

Fig. 1.

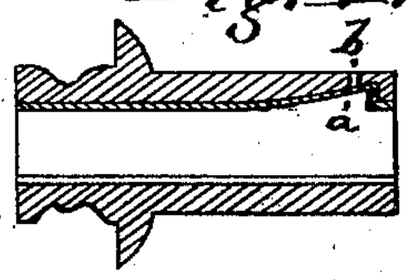


Fig. 2.

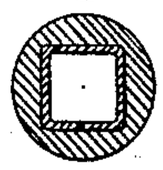
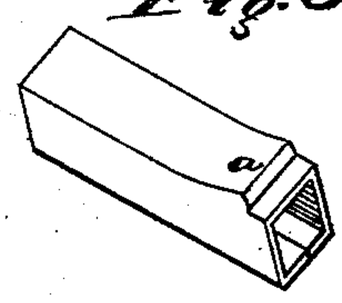


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN POPKIN ADAMS, OF BROOKLYN, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES A. RUTHVEN, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF METAL KNOB-SHANKS.

Specification forming part of Letters Patent No. **165,972**, dated July 27, 1875; application filed April 7, 1875.

To all whom it may concern:

Be it known that I, JOHN POPKIN ADAMS, of Brooklyn, in the county of Kings and State of New York, have made an invention of new and useful Improvements in the Art of Manufacturing Recessed Knob-Shanks, and of a new angular tube therefor; and that the following is a full, clear, and exact description and specification of the same.

The object of my invention is to enable recessed knob-shanks, such as are described in the Letters Patent granted to Tuthill, Ogden, and Slawson, No. 89,708, to be manufactured at a low cost and of great accuracy. To this end the first part of my invention consists of the manufacture of such knob-shanks by the following operations performed in the order in which they are stated, viz: First, the production of an angular recessed tube of sheet metal, having the form internally of the knob-spindle, but with a shouldered recess at one side for engagement with the spindle-spring, by first indenting the recess in the extended sheet metal and then bending the same into an angular tube. Second, the filling of this recessed tube with a core so as to prevent the entrance of melted metal into the tube and recess. Third, the casting of a mass of metal upon the said recessed knob-shank.

In order that my invention may be fully understood, I have represented in the accompanying drawing a recessed knob-shank such as is produced by my invention.

Figure 1 represents a central longitudinal section of said knob-shank. Fig. 2 represents a transverse section of the same. Fig. 3 represents a view in perspective of a recessed angular tube such as is used in the manufacture of said knob-shank.

The first operation is the production of the recessed angular tube represented at Fig. 3 of the drawings. This is made of sheet metal, by preference of sheet iron, which, after being cut to the required form, is stamped between dies so as to indent a recess at *a;* it is then bent into a square tube, and is stamped a second time in dies with a square mandrel inserted in it so as to make its bore accurate.

The recessed tube thus produced is fitted with a core, which may be a piece of wrought-iron somewhat longer than its bore, or may be made of core-sand, stiffened with a wire core bar. The tube with its core is inserted in a mold having a cavity of the form of the knob-shank to be produced. Then melted metal is poured into the mold so as to fill the same. The metal which I have used for this purpose is cast-iron.

After the recessed shank has been thus produced it should be drilled, as at *b*, so as to make an opening for the insertion of a pin for disengaging the spring of the knob-spindle when this operation is necessary.

It will be perceived that inasmuch as the sheet metal which forms the tube is flat before it is made into the tube, it is then easy to indent into it the recess *a* in the precise position relatively to the end of the shank which it is to occupy in the knob-shank; also, that by thus forming the recess in an extended piece of sheet metal which is subsequently bent into a tube and incorporated in the knob-spindle, the cost of making a recess in the knob-spindle by working in the bore thereof through the open end of the bore is avoided.

The result of the invention is that recessed knob-shanks can be produced at a sufficiently low cost to enable them to be sold in the market.

If deemed expedient, the recessed tubes may be tinned before being inserted in the mold, and this preparation is desirable if brass or other metal that will alloy with tin is used for completing the knob-shank.

I claim as my invention—

1. The improvement substantially as before set forth in the art of manufacturing knob-shanks consisting of the following three operations, viz, first, the production of the recessed angular tube of sheet metal; second, the fitting of the said tube with a core; and, third, the casting of melted metal upon said tube.

2. The recessed angular tube of indented and bent sheet metal substantially as before set forth, the same being a new article of manufacture.

Witness my hand this 10th day of March, A. D. 1875.

JOHN POPKIN ADAMS.

Witnesses:

GEORGE A. BURNELL,
ARTHUR J. BAILEY.