JAMES R. FLETCHER, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE AMERICAN HARDWARE CORPORATION, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

MANUFACTURE OF KEY-PLUGS FOR CYLINDER-LOCKS.


Original application filed September 19, 1913, Serial No. 790,658. Divided and this application filed March 24, 1914. Serial No. 826,882.

To all whom it may concern:

Be it known that I, JAMES R. FLETCHER, a citizen of the United States, and a resident of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in the Manufacture of Key-Plugs for Cylinder-locks, of which the following is a specification.

This invention relates particularly to improvements in the method of manufacture of key plugs such as are used in cylinder locks, being a division of my application serially numbered 790,658, filed September 19, 1913.

In the drawings Figure 1 is a view of the cylinder in cross section. Fig. 2 is a plan view thereof. Fig. 3 is a top and side view of the unfinished plug. Fig. 4 is a sectional view of the plug being swaged to finished shape. Fig. 5 is a side view of the plug, showing a finishing operation. Fig. 6 is a side view of the finished plug.

Heretofore it has been customary to make the cylinder and key plug of locks of this type of brass or bronze, both of which are relatively soft. In many instances in public and semi-public buildings a lock is more or less continuously used, subjecting the key plug to an unusual amount of wear which the soft metal of the plug cannot stand without yielding or wearing in one or more places, with the result that the moving parts of the lock and the key get out of alignment. It has heretofore been proposed to reinforce certain parts of the plug by inserting bushings and plates of hardened metal at those points subjected to greatest wear, but there are obvious objections to such methods. The peculiar shape of the plug and the irregular profile of the key-way have heretofore necessitated the use of relatively soft metal in its manufacture.

By this invention and the novel method of manufacture herein illustrated and described, it is possible to make the plug of a metal which is relatively harder than the metal of the cylinder or key and preferably of a metal susceptible of tempering or hardening, in order that it may withstand excessive wear.

Referring to the drawings, a denotes the cylinder, b the plug and c the pin tumblers held in projected position by springs d, all as is usual in locks of this type. I have not illustrated or described the detailed features of construction of a lock since my invention is concerned only with the plug. The plug b is made of a metal which is relatively harder than the cylinder and may conveniently be cast in malleable iron and then finished, and if desired, hardened. The particular method of manufacture which has been found to be practical and to produce the desired result is as follows: First, the plug blank is cast in the form shown in Fig. 3, with the longitudinal groove 5 in one side approximating in contour the finished key-way. Next, the blank is swaged down in suitable dies upon a hardened steel pattern whose cross section corresponds to the desired profile of the key-way, giving to the key-way the proper shape and size and smoothing off any bur or unevenness which may be there. Next, the plug is turned down to proper size to accurately fit in place in the cylinder; and finally it is case-hardened or tempered whenever desired. In this way I am enabled to produce a plug from hard metal such as iron or steel, and to accurately form, shape and finish the plug and the key-way in it. It may not always be necessary to turn down the plug or harden it, though it will usually be desirable.

It is possible that the invention as here described may be susceptible of variation or a modification without departing from the spirit of the invention as set forth in the appended claim:

I claim as my invention:

That improvement in the art of making key plugs for cylinder locks which consists
of casting a cylindrical plug from suitable metal with a longitudinally extending key-way, the profile of the walls of which is of the desired contour; inserting in said key-way a pattern corresponding in shape to the walls thereof, and then applying pressure to the plug to close the walls of the key-way upon the pattern, thus giving a finish to the walls of the key-way and a permanent set to the metal of the plug.

JAMES R. FLETCHER.

Witnesses:
C. A. SEELYE,
C. A. PARKER.

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