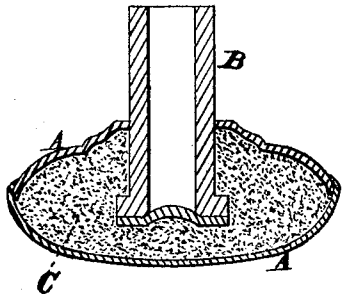
I. SMITH.

Manufacture of Door-Knobs.

No. 149,351. Patented April 7, 1874.



WITNESSES.

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IMPROVEMENT IN THE MANUFACTURE OF DOOR-KNOBS.

Specification forming part of Letters Patent No. **149,351**, dated April 7, 1874; application filed August 20, 1873.

To all whom it may concern:

Be it known that I, ISAAC SMITH, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Manufacture of Filled Ware; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in the process of constructing knobs, handles, &c.; and consists in first constructing the same from thin metallic substance and afterward filling the same with any suitable material under pressure.

I am aware that various articles have been formed of a thin shell and filled by the ordinary process of pouring or stuffing, but not under pressure. When these fillings dry or cool there is such a shrinkage of the material that every portion of the shell is not perfectly filled, and there is, therefore, imperfect support to the shell, which may be easily indented and defaced. I overcome this fault and produce an article that can withstand severe usage without the slightest damage by my process of filling, which is substantially as follows:

The shell is filled, before compressing, to such an extent that when the follower is forced down the material will be forced into every interstice, and while yet under great pressure will harden or set; whereas, if the shell is simply filled without pressure, and then the material permitted to set, it will, in setting, separate from the inner surface of the shell. If a tang is to be forced into the substance in the shell, or a spindle, as indicated in the drawings, is to be inserted, the shell must not be filled so full that the follower in effecting the compression cannot displace enough of the material to admit the spindle or tang.

The dies in which the shell is placed are simply counterparts of the exterior surface of the shell, and are intended merely to furnish a backing, so that the shell will not be distorted under the compression caused by the follower. In the particular instance shown in the drawing the cap-piece of the shell is slipped over the top of the follower and brought down into place before the follower is forced down.

In the drawings, a section of a door-knob after my invention is represented. A is the thin metallic shell; B, the socket, and C the filling. In the shell A is placed the filling material C. The shell A is now placed in a suitable bed or die, as above mentioned, when the packer or follower, which, in this example, is the socket B, is forced down under heavy pressure, as heretofore stated. By this operation the filling material is displaced and packed closely into every part of the shell A.

This invention has nothing to do with the various and obvious ways by which the material is placed in the shell prior to the compressing action of the follower. This invention begins when the material, once in the shell, is ready for compression. In this particular instance shown by the drawing the top portion of the shell is raised, the plastic compound in a lump placed within the lower half, and the cap brought down upon it; but any other method of filling the shell may be employed without encroaching upon the principle of my invention, which is understood to begin with the shell when it is sufficiently or properly filled ready for the compressing action of the follower.

I do not limit myself to the application of my invention to the manufacture of knobs, as any article which can be a filled shell may be made by my process.

What I claim is—

The within-described process for making door-knobs, handles, &c., the said process consisting in filling the exterior shell with suitable adhesive plastic material, which is then submitted to a great pressure before setting, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of August, 1873.

ISAAC SMITH.

Witnesses:

L. L. LEGGETT,

EDM. F. BROWN.