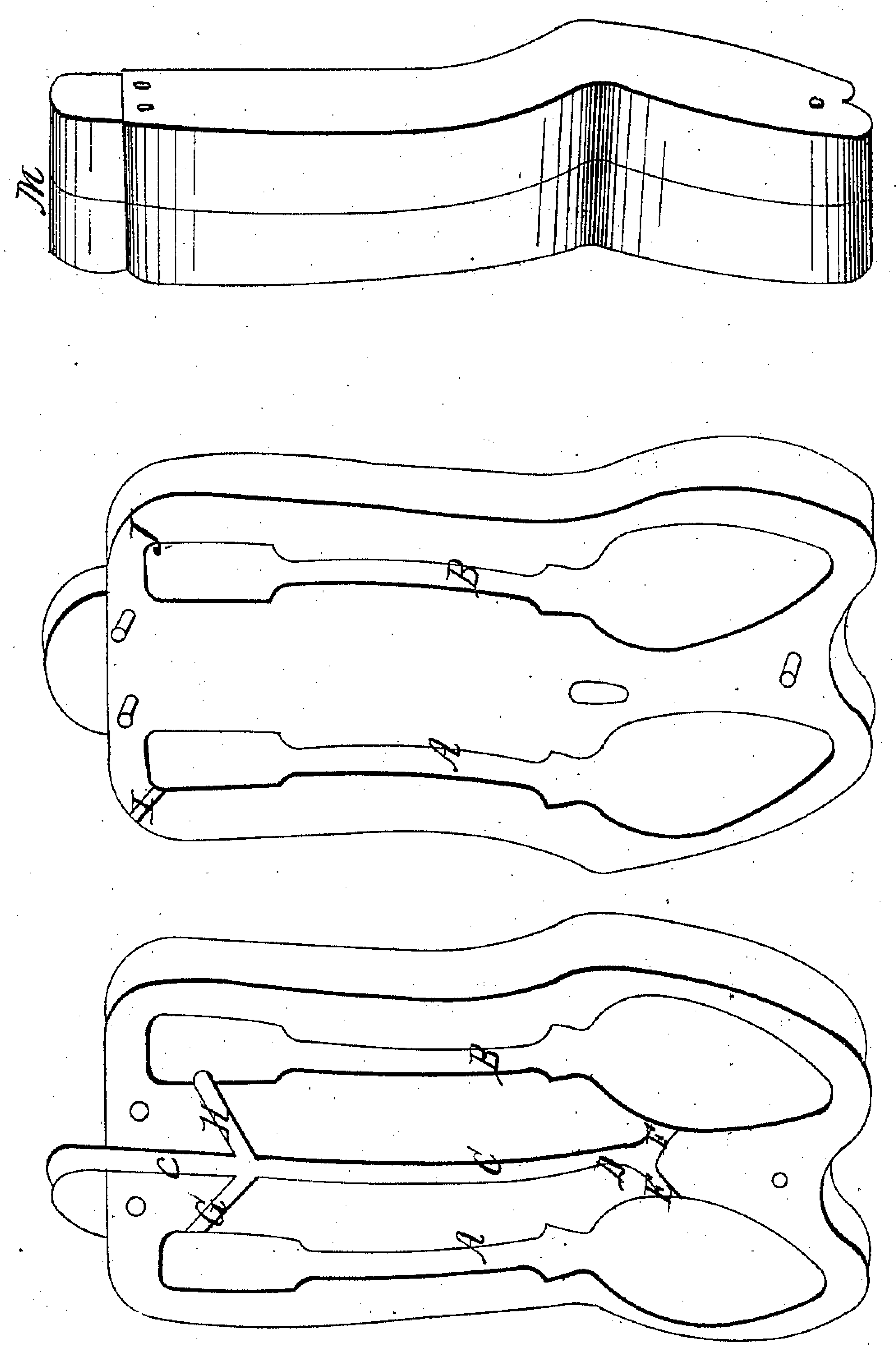
L. Boardman,

Casting Spoons.

No. 2,802. Patented Oct. 7, 1842.



Witnesses,

[illegible]

[illegible]

Inventor;

Luther Boardman

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UNITED STATES PATENT OFFICE.

LUTHER BOARDMAN, OF EAST HADDAM, CONNECTICUT.

IMPROVEMENT IN THE MANNER OF FORMING MOLDS FOR CASTING SPOONS, &c.

Specification forming part of Letters Patent No. **2,802**, dated October 7, 1842.

To all whom it may concern:

Be it known that I, LUTHER BOARDMAN, of East Haddam, in the county of Middlesex and State of Connecticut, have invented a new and useful Manner of Forming Metallic Molds for the Casting of Spoons and other Articles; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, K represents one side of a metallic spoon-mold, which is formed in the ordinary manner, and L is the reverse half. M shows the two parts as they appear when united, so as to be ready to receive the melted metal.

The improvement made by me consists in the manner in which I form the gate or channel by which the metal is to enter the mold. In casting spoons I usually cast two in the same mold, as this is more economical than casting them singly, although the latter may be done upon the same principle as that which I adopt in forming them in pairs.

A B represent the cavities formed in the molds for the reception of the metal. C C is a gate or channel through which the metal is to enter, and which is continued down to the point D, where it divides into two channels, one leading to each spoon in a descending oblique direction, as reprented at E and F in the drawing. Toward the upper end of the main gate there are two other gates or sprues leading from the main gate C C, and connecting it with the upper portion of the cavity for the articles to be cast. These gates or sprues are made to incline upward, as shown at G H. From the upper end of each spoon or other article there is usually a small air-channel leading upward, as shown at I J. This completes the formation of the mold.

The improvement in this mold consists in the particular manner in which the main gate C C and the lateral gates or sprues E F and G H are arranged and combined with each other and with the cavities in which the spoons or other articles are to be formed, said form and arrangement of the gates being especially adapted to the casting of spoons and similar articles in metallic molds. In the ordinary manner of casting spoons in such molds the metal is poured in by a gate leading directly into the upper portion of the cavity, and the result is that the scoria, which is always forming in the metal, accumulates in the upper end or handle, and renders the article more or less porous in that part—a defect which is rendered evident in the process of finishing the article with a buff. By my arrangement the metal enters at a certain distance above the lower end of the article to be cast, as at E F, where it corresponds with the broadest part of the bowl of a spoon, and it continues to rise in the cavity or cavities until it arrives at a level with the upper lateral gates, as at G H, when it flows in through those channels. and when thus introduced the upper end of the article will be found to be perfectly free from all visible porosity.

I am fully aware that articles have frequently been cast in sand by causing the gate to descend to the lower part of the cavity made in the flask by the pattern, and allowing the metal to flow regularly upward, this having been done to prevent injury to the face of the mold in the casting of fine work by the descent of the molten metal in a continued current along it; but in metal molds the object to be attained and the means of attaining it are different from those just described in casting in sand. Metallic molds, which are good conductors of heat, require to be kept at a given temperature to admit of the setting and removal of the cast article without waste of time, while it is important that this setting shall not be so sudden as to cause it to take place before the article is perfectly formed. Now, in an article of the length of a spoon it will be found that if the metal is allowed to descend along a gate to its lower end and then to ascend to the upper end by the pressure of that contained in the gate the spoon cannot be cast without keeping the mold at a temperature which would defeat the object; but by means of the two lateral gates or sprues to each spoon, arranged in the manner or substantially in the manner herein described and represented, the desired end will be attained.

Having thus fully described the manner in which I construct my metallic molds for casting spoons and other articles of a similar character, what I claim therein as new, and desire to secure by Letters Patent, is—

The forming of such molds with a main de-

scending gate leading down nearly to the lower end of the spoon or other article to be cast, where it is to communicate with the proper cavity by means of a lateral descending gate or sprue, in combination with the sprue above this and toward the upper end of the cavity for receiving the metal, having an ascending direction, the whole being formed in the manner and for the purpose herein fully set forth; and I will here remark that, although I have spoken of a single lateral ascending gate or sprue leading to each cavity, there may be two or more such lateral ascending gates without producing any injury, although I do not think them necessary or desirable.

LUTHER BOARDMAN.

Witnesses:
THOS. P. JONES,
EDWIN L. BRUNDAGE.