

No. 668,638.

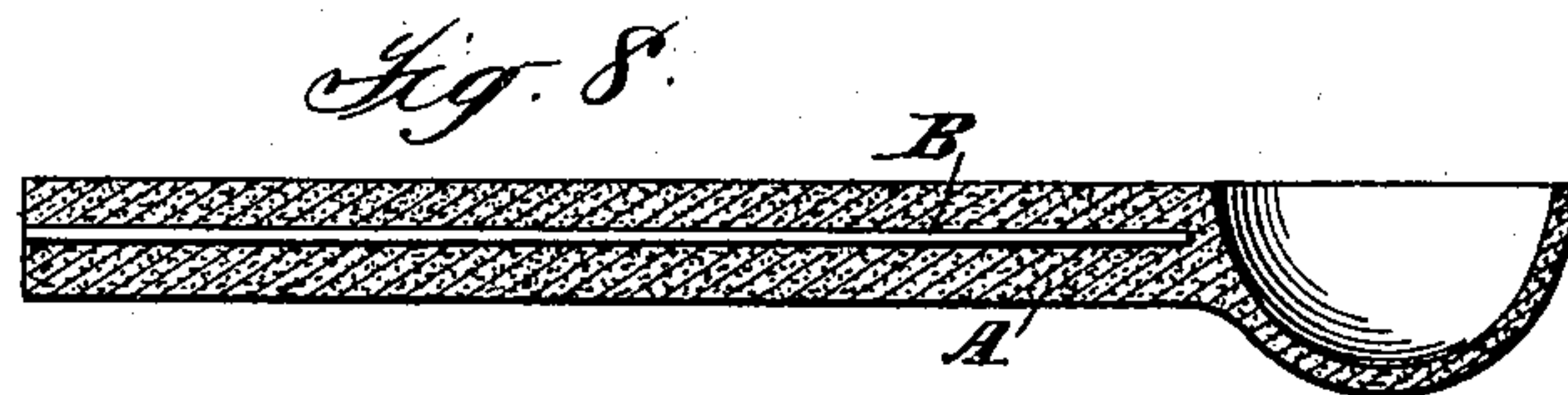
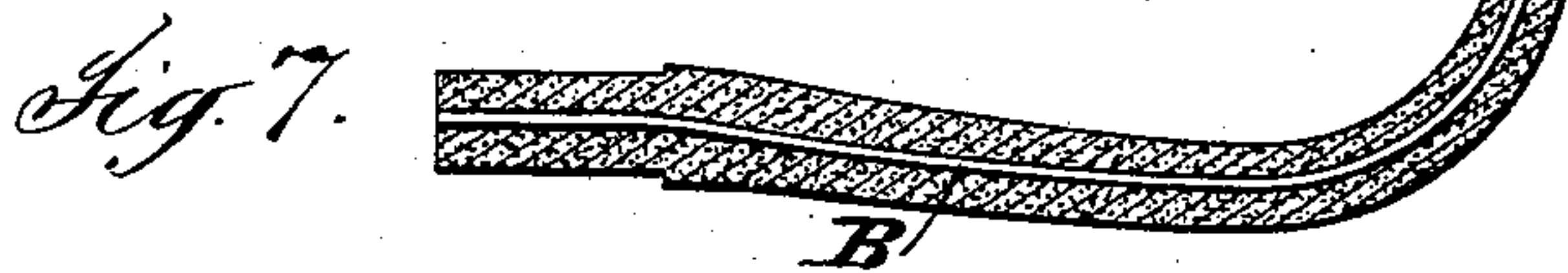
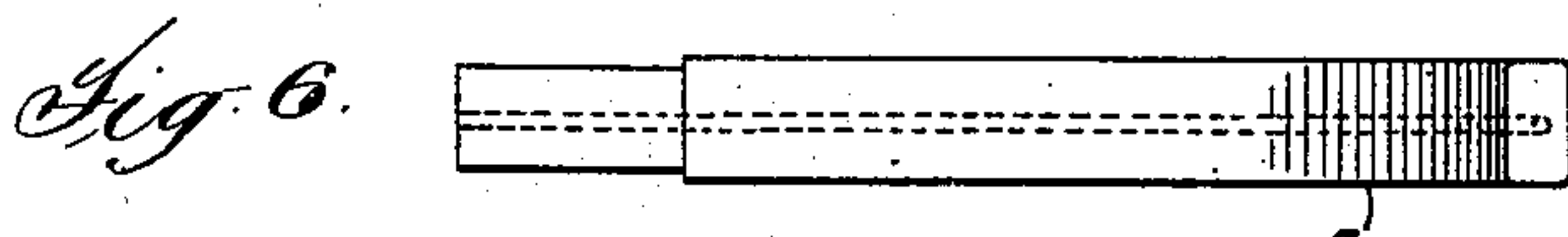
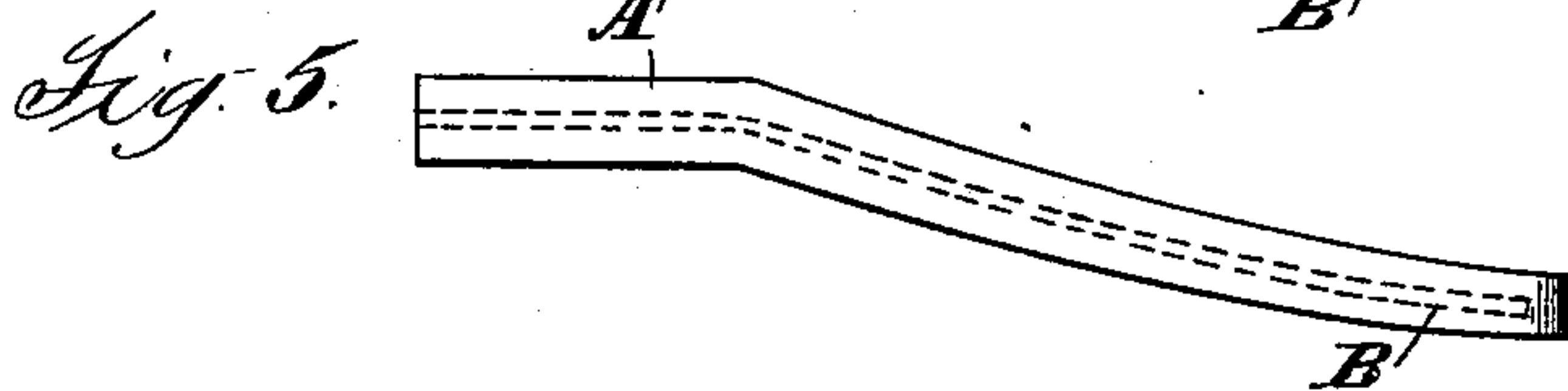
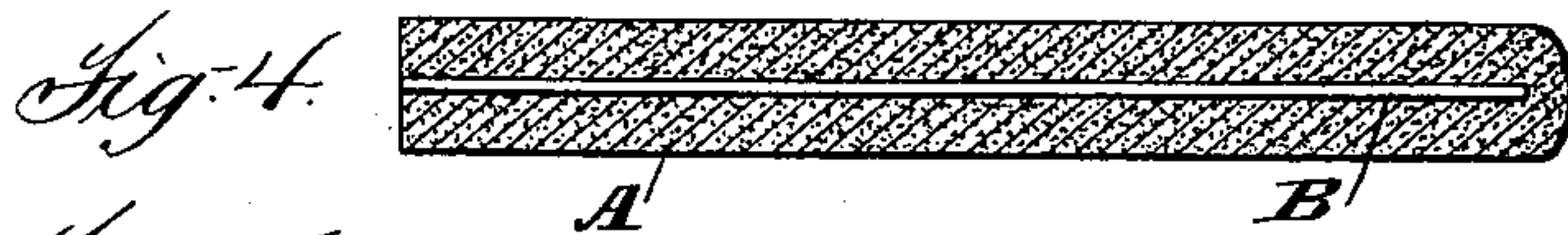
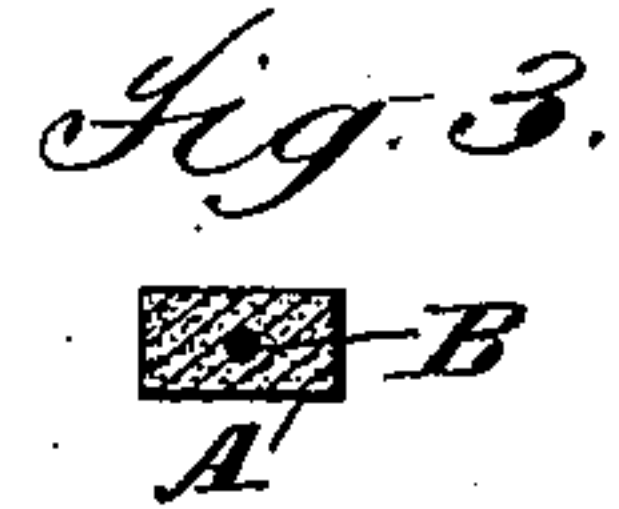
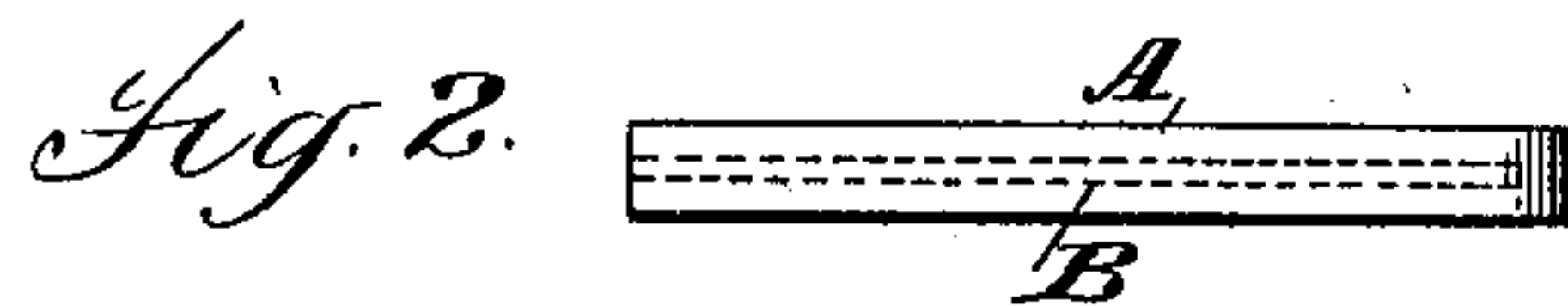
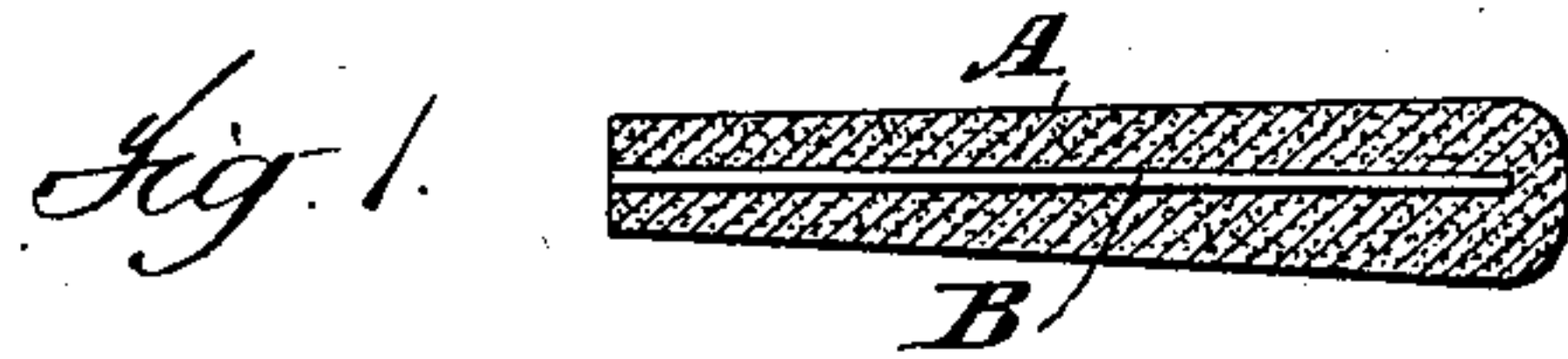
Patented Feb. 26, 1901.

A. L. HAASIS.

IMPLEMENT FOR USE WITH MOLTEN METAL.

(Application filed June 6, 1900.)

(No Model.)



Attest:
A. White
J. A. Graves.

Inventor:
Albert L. Haasis
by Philipp. Sawyer, Rice & Kennedy
Attys

UNITED STATES PATENT OFFICE.

ALBERT L. HAASIS, OF NEW YORK, N. Y.

IMPLEMENT FOR USE WITH MOLTEN METAL.

SPECIFICATION forming part of Letters Patent No. 668,638, dated February 26, 1901.

Application filed June 6, 1900. Serial No. 19,211. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. HAASIS, a citizen of the United States, residing at New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Implements for Use with Molten Metal, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in implements for use with molten metal.

Where metal is fused in crucibles, it is frequently necessary to stir it—as, for instance, to produce a proper mixture when forming an alloy—or to skim it. Inasmuch, however, as metal implements for these purposes are quickly destroyed by the molten metal, and inasmuch, furthermore, as it is undesirable in handling some metals and alloys to get any foreign metal into them, as might be the case were the skimming and stirring implements formed from metal, such implements are usually made from graphite or from compositions of which graphite is a principal ingredient. Such graphite implements, while obviating the objections arising from the use of metal implements, are in themselves objectionable because of the brittleness of the material or materials from which they are made, which render them liable to become broken.

It is the object of this invention to improve these graphite implements, so as to render them less liable to be broken.

In the accompanying drawings, which illustrate several forms of graphite implements constructed in accordance with the invention, Figure 1 is a sectional side elevation of a stirrer for molten metal constructed in accordance with the invention. Fig. 2 is a plan of the same stirrer. Fig. 3 is a cross-section thereof. Figs. 4 and 5 represent in sectional elevation and plan, respectively, another form of stirrer. Figs. 6 and 7 illustrate in plan and sectional elevation, respectively, a skimmer constructed in accordance with the invention. Fig. 8 illustrates in sectional elevation another form of skimmer.

Referring to the drawings, A represents the body of an implement for use with molten metals. This implement may be given any suitable configuration, according to the spe-

cific use to which it is to be put. Figs. 1 and 2 represent one form of stirrer, and Figs. 4 and 5 represent another form of stirrer. Figs. 6 and 7 illustrate one form of skimmer, and Fig. 8 illustrates another form of skimmer.

All of these implements are strengthened by inserting in them a bar or rod of metal, preferably of iron or steel. These implements, as has been before indicated, are made from graphite or from a composition in which graphite largely enters and are or may be formed by molding. While the strengthening bar or rod might be inserted after the implement is made, it will preferably be inserted during the process of manufacture—that is to say, it will be molded into it. As is well known, metal such as iron or steel has a different coefficient of expansion from graphite or its compounds. Inasmuch as the implement becomes highly heated from contact with the molten metal, it is desirable to so construct it as to permit the strengthening bar or rod to expand independently of the body of the implement, as otherwise the expansion and contraction of the strengthening bar or rod might cause breakage or disintegration of the implement. This provision for expansion may best be effected by leaving one end of the metal strip or bar exposed or uncovered, as shown in the drawings, the end which is to be inserted into the molten metal being of course covered.

While the body A of the implement might be formed of pure graphite, it will more usually be formed, as has been indicated, from a composition of which graphite is a principal ingredient. The term “graphite,” as used in the specification and claim, therefore, is to be construed as covering such compositions.

While a single strengthening bar or rod will usually be sufficient for the purpose, it is to be understood that more than one such bar or rod may be used, if desired. It is also to be understood that the bar or rod may be of any suitable shape or configuration; but it will preferably extend substantially throughout the length of the implement and conform to the shape thereof.

What is claimed is—

An implement for use with molten metal consisting of a body of molded graphite hav-

ing a metallic strengthening rod or bar mold-
ed therein, one end of the rod or bar being
covered to protect it from the action of the
molten material, and the other left uncov-
5 ered so as to permit it to expand and contract
independently of the graphite body, substan-
tially as described.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

ALBERT L. HAASIS.

Witnesses:

ALBERT NORRIS,

HARRY E. WESTERVELT.