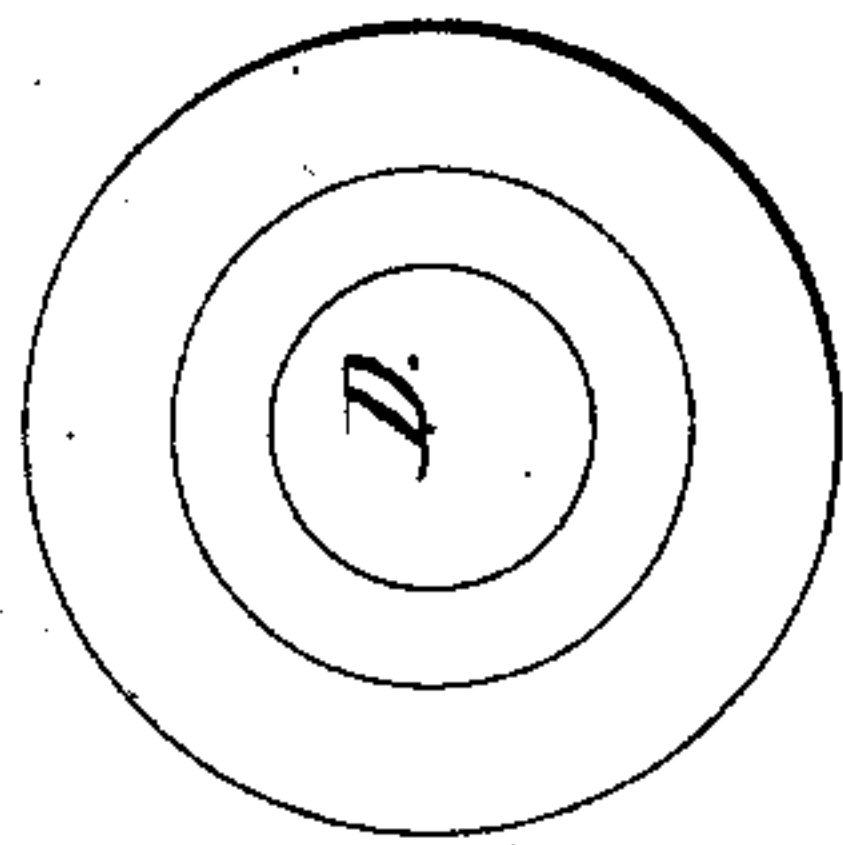
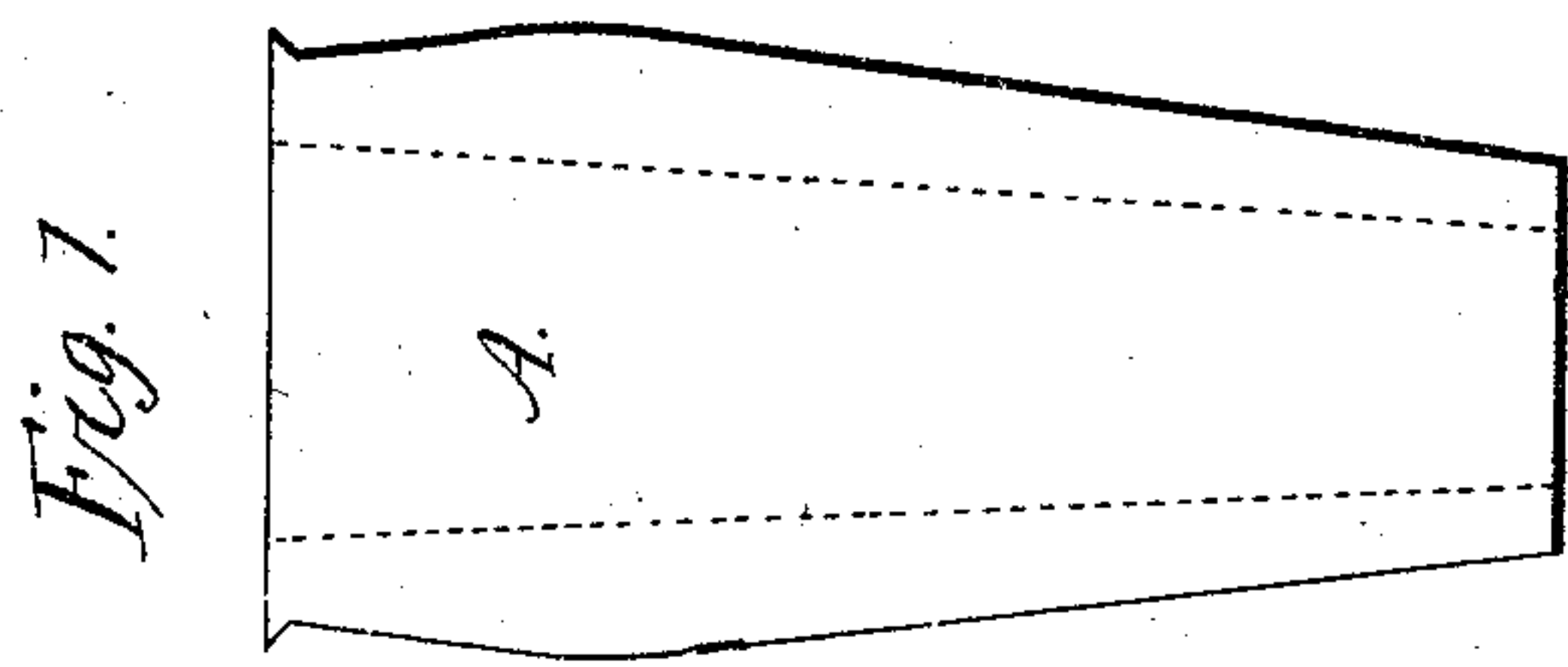
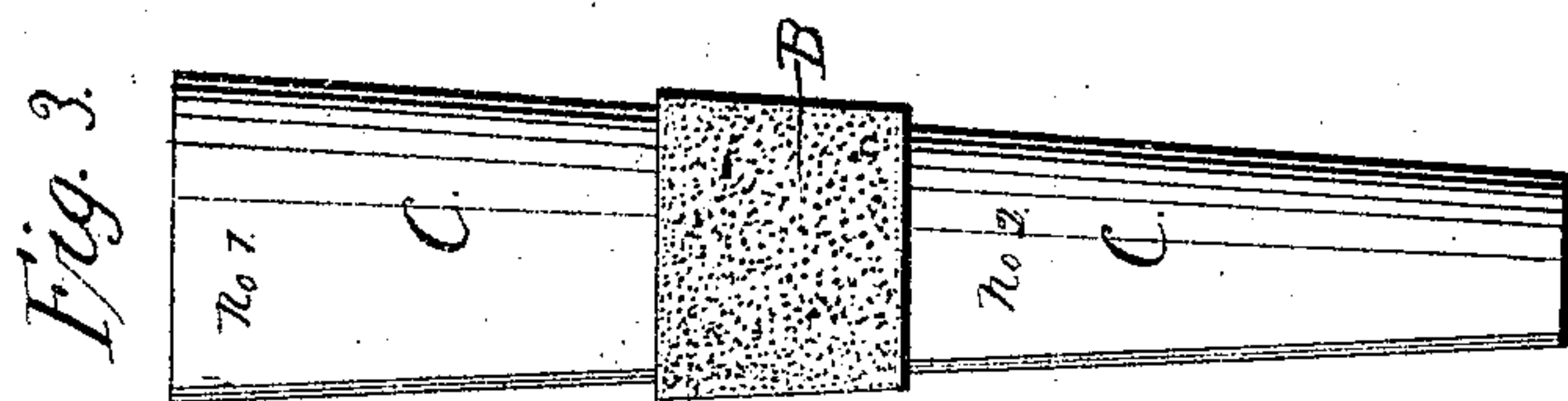
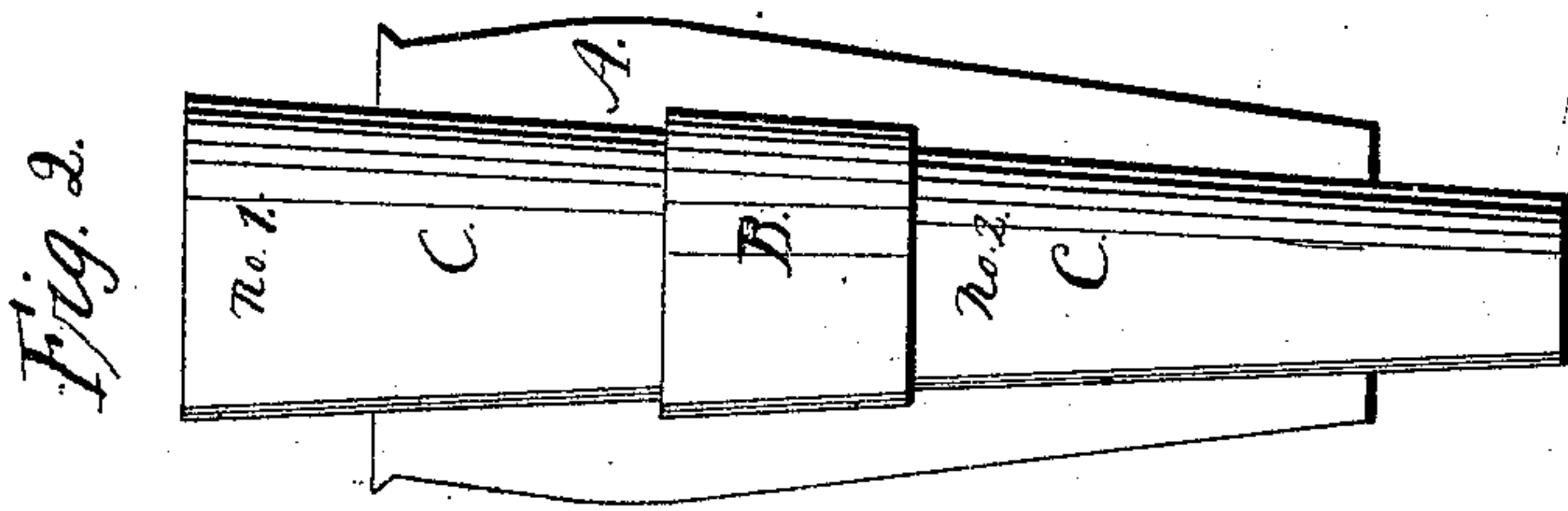
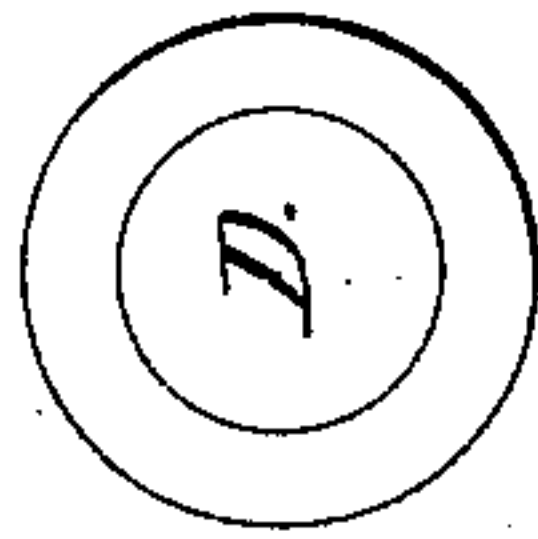


*W. Butler,*  
*Wagon Box.*  
*N<sup>o</sup> 14,442.      Patented Mar. 18, 1856.*



*Fig. 4.*



# UNITED STATES PATENT OFFICE.

WILLIAM BUTLER, OF LITTLE FALLS, NEW YORK.

## IMPROVEMENT IN MAKING CHILLED CASTINGS.

Specification forming part of Letters Patent No. 14,442, dated March 18, 1856.

*To all whom it may concern:*

Be it known that I, WILLIAM BUTLER, of Little Falls, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Boxes for Carriages and Wagons; and I do hereby declare that the following is a full and exact description.

To enable others to make and use my invention, I proceed to describe its construction and operation, reference being had to the drawings hereunto annexed and making part of this specification.

Figure 1 is a side elevation of box; Fig. 2, box and cores; Fig. 3, chilled and sand cores; Fig. 4, end views of the box.

A is a box. B is a sand core. C No. 1 and C No. 2 are the hollow chill-cores. D D are the ends of the box. The box A is made of cast-iron. The inner surface of the box D D is chilled at each end by means of the chilled cores C No. 1 and C No. 2. The connection of the chill-cores C No. 1 and C No. 2 by the sand core B is the important feature of my improvement. These combined chill-cores C No. 1 and C No. 2, with the sand core B, are so simple that any molder could make them, they being formed by placing the hollow chill-cores C No. 1 and C No. 2 at each end of the core-box a sufficient distance apart to form the chamber by means of the sand core B. The sand core B is formed by forcing the sand through the hollow chill-cores C No. 1 and C No. 2 into the chamber, after which the cores are dried in the usual manner and set in the mold ready for casting.

By combining the chill-cores C No. 1 and C No. 2 with the sand core B the difficulty is obviated of warping and springing attending the chilling of boxes in the usual manner, as the box has a chance to shrink upon its center while being cooled, which could not be the case if chilled through the entire inner surface of the box. Besides, a chamber is formed in the center of the box that could not be formed otherwise advantageously in the chilling of boxes. Another advantage is gained in the combination of the chill-cores C No. 1 and C No. 2, and the connection of the sand B is that it obviates the difficulty attending the casting of cast-iron chilled boxes on mandrels, which difficulty consists in removing the box from the mandrel before the shrinkage of the metal, which is not the case in the manner I cast them, the chills C No. 1 and C No. 2 being left in the boxes till the boxes are entirely cooled.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the hollow chill-cores C No. 1 and C No. 2 with the sand core B for the purposes of obviating the difficulty of warping and springing attending the casting of cast-iron boxes on chills, and thereby forming a chamber in the box, in the manner and for the purposes within described.

W. BUTLER.

In presence of—

GEORGE P. WILCOX,  
SANDY CASLER.