

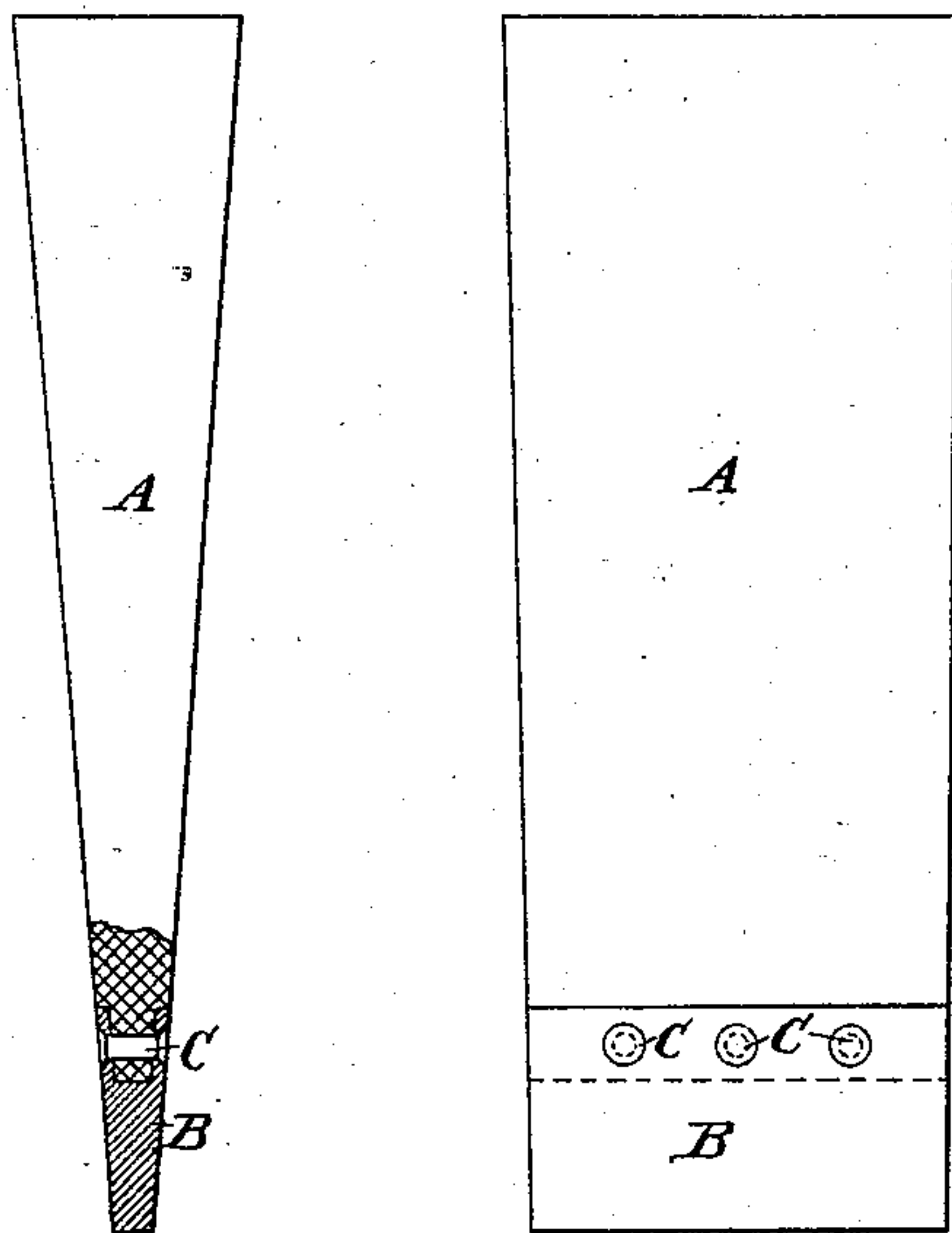
(No Model.)

J. H. DEPEW.
SPRUE FOR FOUNDRY USE.

No. 275,332.

Patented Apr. 3, 1883.

Fig: 1. • Fig: 2.



Witnesses:

A. H. Gentry
M. F. Boyle

Inventor:

John H. Depew
by his attorney
A. H. Gentry

UNITED STATES PATENT OFFICE.

JOHN H. DEPEW, OF PEEKSKILL, NEW YORK, ASSIGNOR TO HIMSELF AND
WILLIAM H. DEPEW, OF SAME PLACE.

SPRUE FOR FOUNDRY USE.

SPECIFICATION forming part of Letters Patent No. 275,332, dated April 3, 1883.

Application filed October 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. DEPEW, of Peekskill, in the county of Westchester and State of New York, have invented certain new and useful Improvements relating to Sprues for Foundry Use; and I do hereby declare that the following is full and exact description thereof.

The invention consists in making elastic or yielding the whole or a portion of the pin or wedge serving as the sprue, and which, by its presence, forms the aperture through which the melted metal is poured to reach the proper cavity in the mold, so that an accidental blow received from the rammer in compacting the material of the mold will not break the pattern or seriously disturb the work. The term "sprue" is applied indifferently by some molders to the hole in the molding-sand through which the hot metal is poured, the pattern which makes such hole, and the useless molded mass of metal which remains and hardens in the hole. I will use the term as applied to the pattern which molds the hole. It is common to make the pin or wedge serving as the sprue of wood or metal. The molding-sand requires to be compacted around the pattern and around the sprue by strong blows with a heavy rammer. With ordinary care and skill it is difficult to avoid hitting the sprue occasionally with the rammer. To avoid mischief from this source it is common to place the sprues out of contact with the pattern. They extend from one of the outer faces of the mold to the parting-joint between two parts of the mold. From the sprue to the mold a sufficient channel is made by other means, and the passage is differently named, being usually termed the "gate." My invention is not vitally important where the mold, from its nature, can be sprued and gated in that manner; but there is a large class of work in which it is essential to success that the hot metal be delivered into the pattern-cavity as directly as possible. Stove-castings form a large class of such work. The metal, if received through the sprue and gate at one side of the pattern, would be likely to "freeze" before flowing through the thin space in the cold sand to the extreme corners of the cavity. For such castings it is common to use one

or more wedge-shaped sprues, and to connect it or them by placing it directly on the pattern, so that the metal will be received through the sprue directly into the pattern cavity near its center, and will flow rapidly in all directions therefrom. Another large and increasing class of molding is the manufacture of butt-hinges and analogous small separate articles in the large way by molding large numbers in a single flask. These may be sprued in the ordinary way at a point outside of any of the patterns, and several gates may extend from one sprue to six or other number of the mold-cavities. To economize labor and insure a just sufficiently capacious gate, it is common to mold the gates by means of a brass or iron pattern of proper form. The sprue then rests on the pattern for the gate. The molder, in manufacturing either of these classes of work, finds his sprue resting directly on a hard and delicate object. A blow of the rammer touching the sprue is liable to fracture or bend the gate-pattern in the latter class, and the still more precious stove-plate pattern or other elaborately-wrought pattern on which the sprue rests in the last preceding class. I avoid the mischief by making the whole sprue, or a principal portion thereof, of india-rubber or analogous yielding material. In order to preserve the proper form, and the small size of the juncture in the stove-plate and analogous class of castings, I use a wedge-shaped sprue mainly of india-rubber, but with the thin end of the wedge formed entirely or shod with metal.

My yielding sprue works in all respects like the ordinary rigid ones, except when it is struck by the rammer. Then, instead of transmitting the blow with great force through itself to the delicate gate-pattern or other pattern below, it simply yields by compression and bending. It is liable to increase the size of the sprue-passage at the upper end, and to deform its contour; but that is an evil so slight as to be insignificant. The lower end of the sprue remains unaffected, and the hole at that point is of exactly the proper size and form. No injurious shock is communicated to the lower end of the sprue-pattern, and no serious blow is felt by the pattern on which the sprue rests.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

5 Figure 1 is an edge view, partly in section. Fig. 2 is a side view of my improved sprue.

Similar letters of reference indicate corresponding parts in both the figures.

A is the main body of the sprue, of rubber, 10 or some compound of which rubber is a component. It may be either vulcanized or unvulcanized; but it is important that it be soft and yielding.

B is a shoe, of rolled brass or other suitable 15 metal or material, fitted upon the end which is to come in contact with the pattern. The metal B is sunk into the rubber A so that the exterior surfaces are flush. C are rivets holding the parts reliably together. The metal portion 20 B is more especially important on thin-ended or wedge-shaped sprues. It is common for molders to remove a portion of the molding-sand immediately at the point or narrowest portion of such sprues. The softness of the material which I prefer to employ for the main 25 body illy adapts it to endure many repetitions of the molding process with the thin portion of the sprue undefended; but with my metal shoe the thinnest end ever required on a sprue 30 may be maintained in good condition for an indefinite period.

Modifications may be made in the forms and proportions. Parts of the invention may be used without the whole. I can for some sprues 35 omit the metal portion B. I can make the metal portion of cast or forged metal instead of sheet metal, as indicated.

Instead of rubber or its compounds as the

material for the main portion A, I can use 40 gutta-percha, and various other gums and elastic compounds; or I can use felt or analogous yielding material, either bare or coated with oil or paint, or with a fabric—as oil-cloth—or with other yielding coating which shall be sufficiently smooth to allow the sprue 45 to be drawn from the sand.

I do not esteem it absolutely essential to success that the material A shall be elastic, in the ordinary sense of the term. It is sufficient if it be simply soft. A casing of oil-cloth, gut, or other smooth material, filled with 50 sand, bran, or other yielding material, may be made to serve. I prefer soft vulcanized rubber, compounded, molded, and vulcanized in the manner in which that material is usually 55 worked.

I claim as my invention—

1. A sprue having its main body A of rubber or other yielding material, and a form and surface adapted to be drawn from the sand, 60 all substantially as herein specified.

2. The compound sprue described, having a body, A, of yielding material, and a shoe, B, of hard material, combined as shown, and having a form and substance adapted to be drawn 65 from the sand, all substantially as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand, at Peekskill, this 30th day of September, 1882, in the presence of two subscrib- 70 ing witnesses.

JOHN H. DEPEW.

Witnesses:

A. W. WYATT,
ISAAC LOSEE.