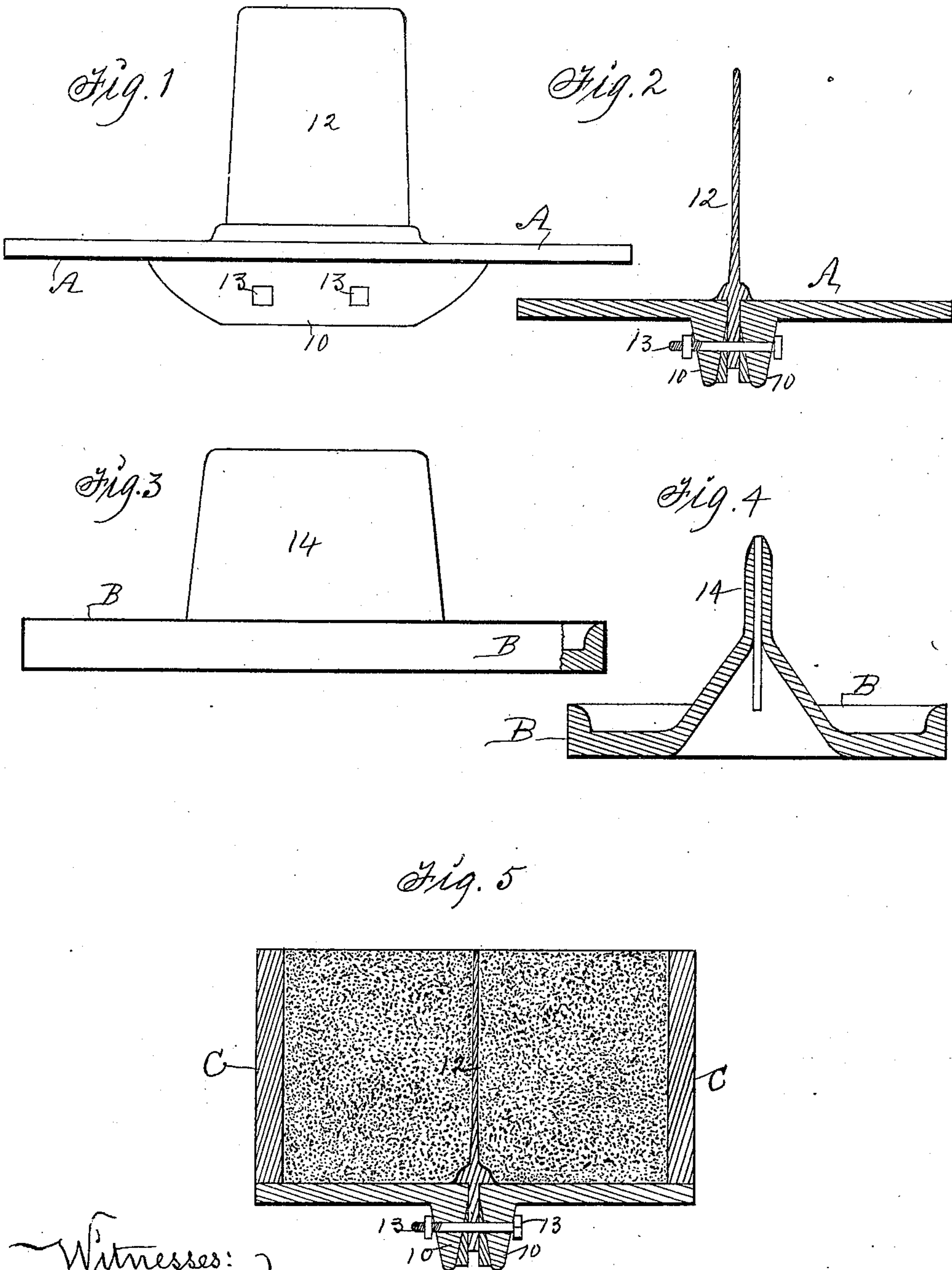


F. E. SMITH.
 FLAT GATE FOR MOLDING MACHINES.
 APPLICATION FILED SEPT. 8, 1908.

917,371.

Patented Apr. 6, 1909.
 2 SHEETS—SHEET 1.



Witnesses:
 Ed. W. Miller
 R. H. Orwig

Inventor: Frank E. Smith,
 By Thomas G. Orwig & Co. Attorneys.

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Fig. 8

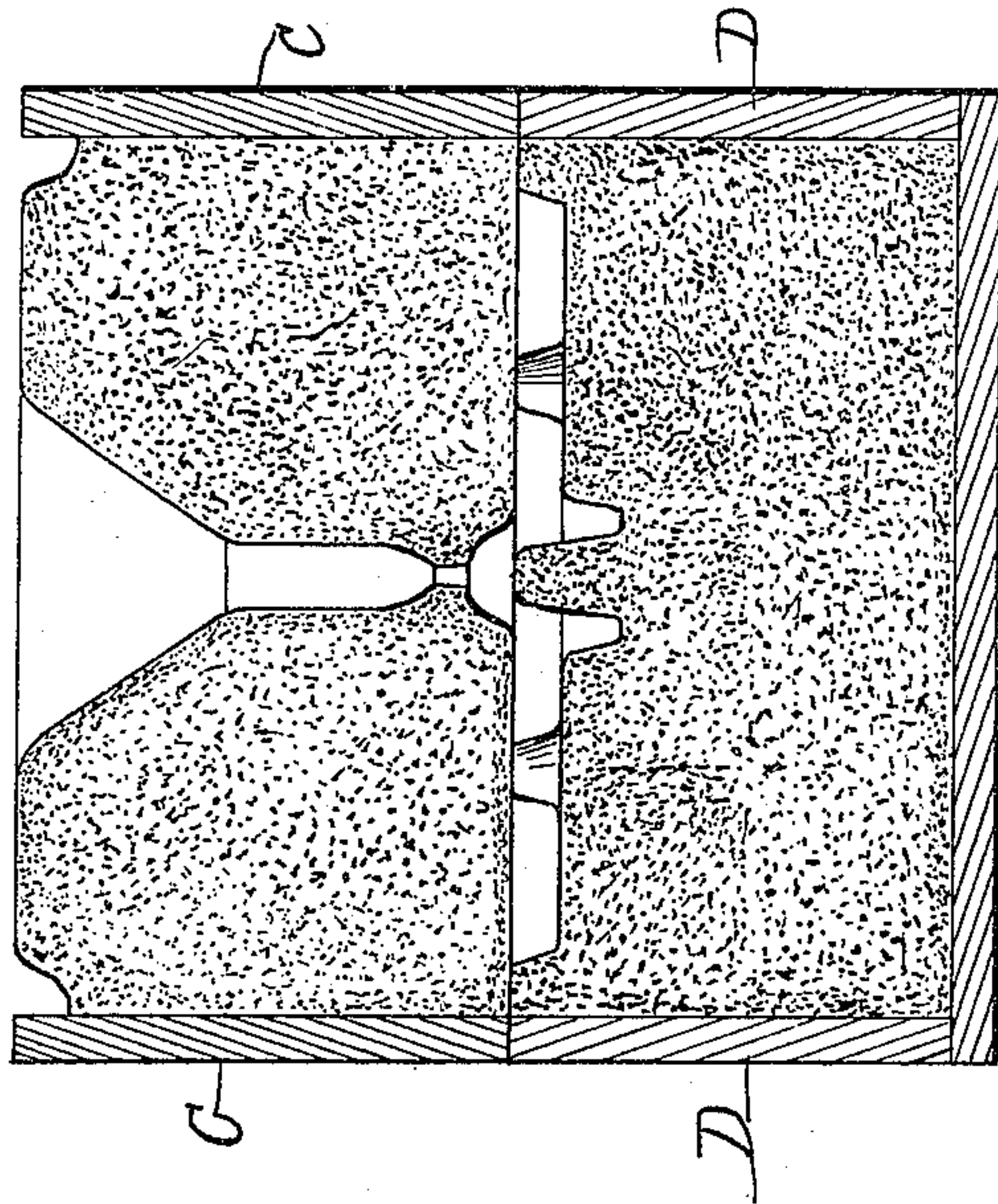


Fig. 6

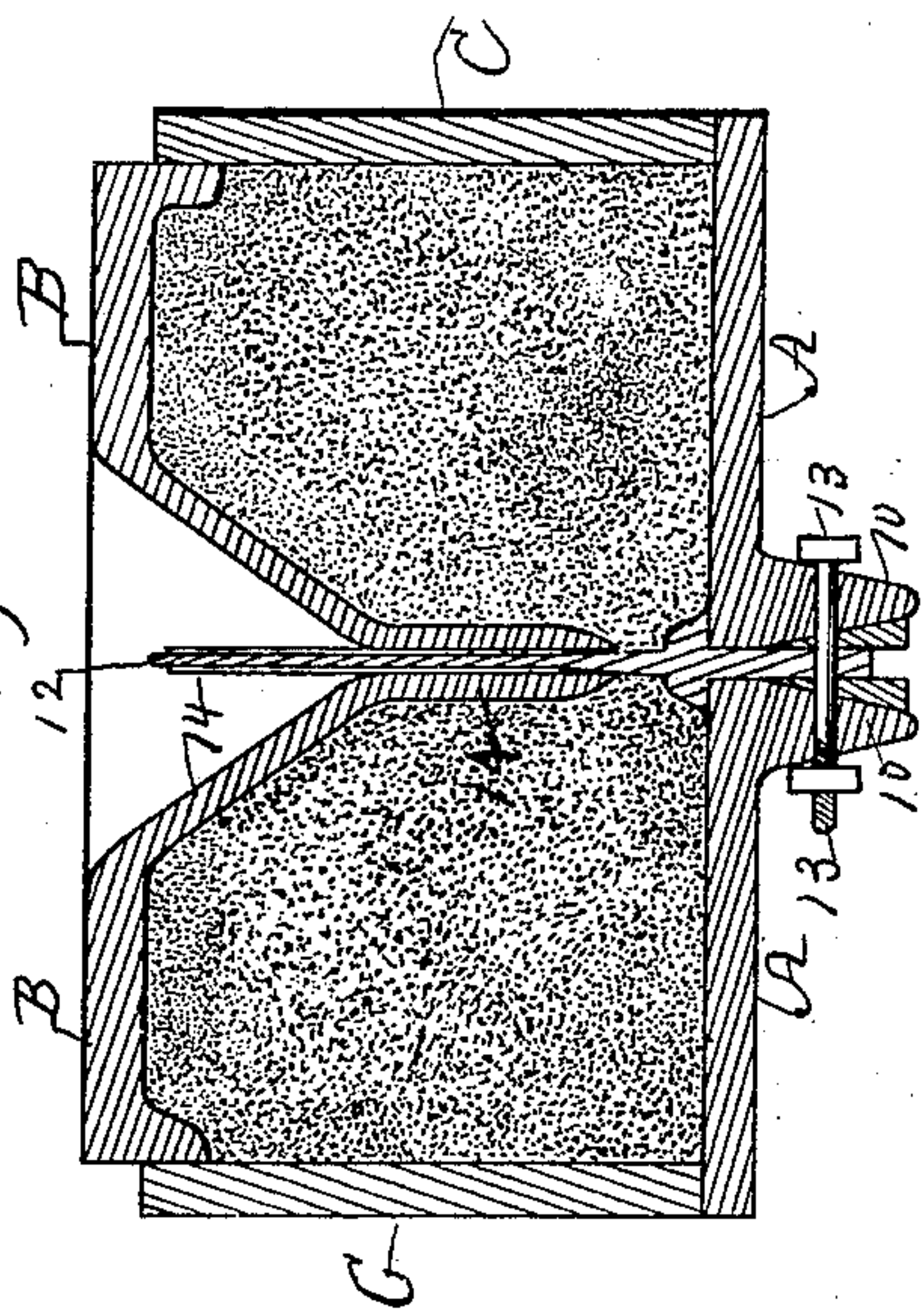
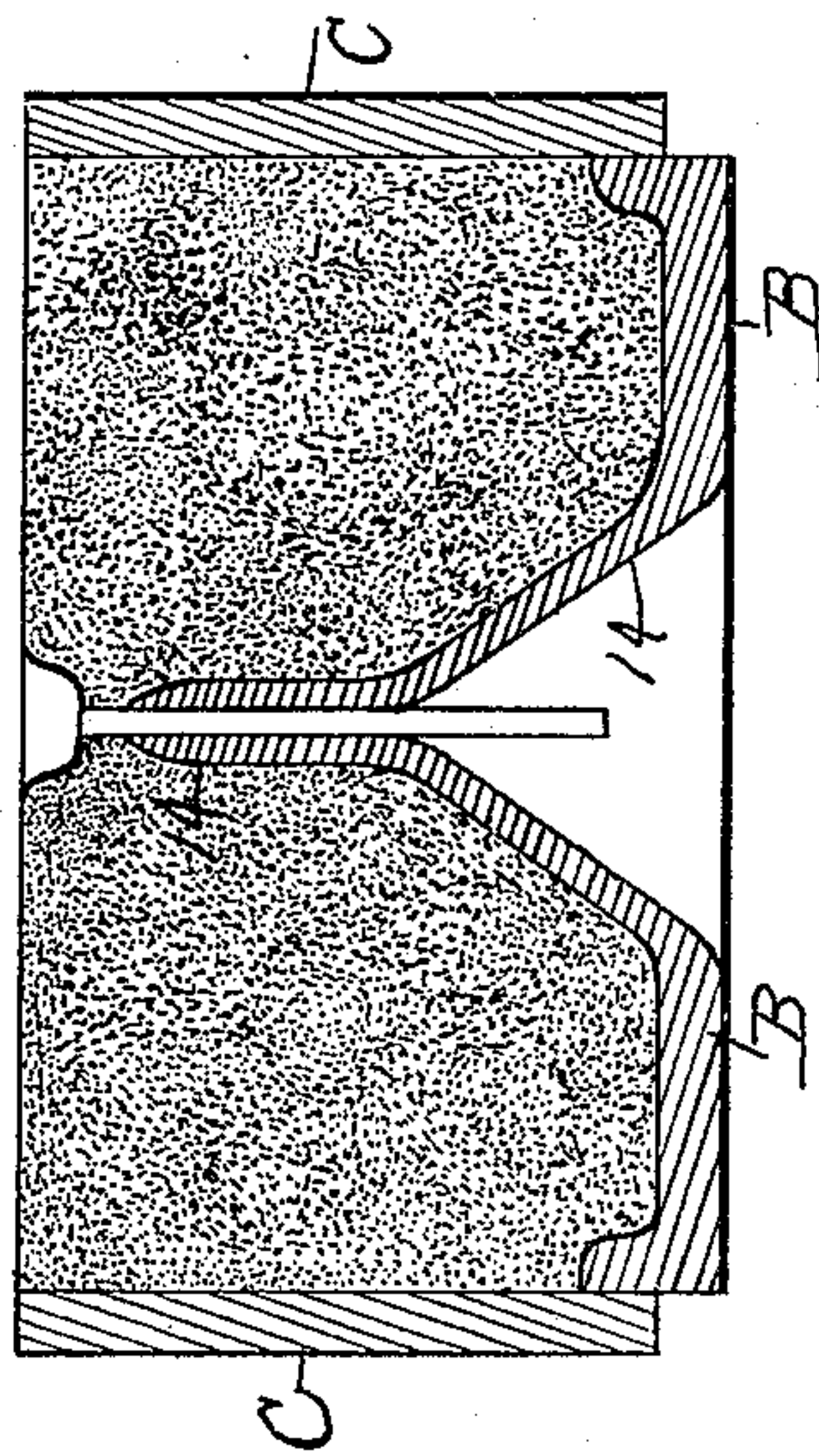


Fig. 7



Witnesses:

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Inventor: Frank E. Smith,

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UNITED STATES PATENT OFFICE.

FRANK E. SMITH, OF MARSHALLTOWN, IOWA, ASSIGNOR OF ONE-HALF TO EMMA C. BRADFORD, OF MARSHALLTOWN, IOWA.

FLAT GATE FOR MOLDING-MACHINES.

No. 917,371.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed September 8, 1908. Serial No. 452,520.

To all whom it may concern:

Be it known that I, FRANK E. SMITH, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a new and useful Flat Gate for Molding-Machines, of which the following is a specification.

The purpose of my invention is first, to reduce the time and labor and cost required for producing castings; second, to provide forms to facilitate the operation of producing a mold or matrix in sand and a flat ingate to intersect the matrix for advantageously pouring in molten metal; third, to permanently connect the forms with interchangeable flat covers for two mating parts of a flask as required to produce flat ingates without using any separate extraneous devices.

My invention consists in making and combining molders' sprues with movable covers and placing them in flasks to produce a mold or matrix by patterns and sand as hereinafter set forth, pointed out in my claims and illustrated in the accompanying drawings in which:

Figure 1 is a side view and Fig. 2 a transverse section of one of the flat flask covers having a solid and flat molder's sprue fixed thereto. Fig. 3 is a side view of a second cover preferably a casting and Fig. 4 a transverse section thereof having a conoidal hollow sprue adapted to admit the solid sprue. Fig. 5 is a transverse sectional view that shows one of the mating parts of a flask on top of the cover having the fixed solid sprue extended through the sand in the flask as required to aid in producing ingates through the sand. Fig. 6 is a transverse sectional view of the cover having a solid sprue in the sand in the second mating part of the flask and the covers having sprues combined with each other as required to complete a flat ingate through the sand. Fig. 7 shows Fig. 6 in an inverted position. Fig. 8 shows the two mating parts of the flask combined and the matrix in the sand in the lower one and the ingate in the upper one as required for pouring molten metal through the ingate into the mold or matrix.

The letter A designates a flat cover that can be interchangeably used on top or under the mating parts of the flask. On its under side as shown in Figs. 1 and 2 are tapering flanges 10 on the opposite sides of a slot in which is detachably fixed a flat and solid

sprue 12 by means of bolts 13 as clearly shown in Fig. 2, or in any suitable way as required to hold the parts together securely so they can be jointly and advantageously handled and separated when desired. On the second cover or casting B having a flange at its edge is formed integrally or fixed thereto a pyramidal hollow sprue 14 that terminates in a flat hollow extension as shown in Fig. 4.

In the practical use of my invention thus constructed the part C of the flask is first placed on the cover A as shown in Fig. 5 and sand tamped therein around the sprue 12 to produce the lower part of the ingate required. Next the cover or casting B is placed in position as shown in Fig. 6 by pressing the sprue 14 down over the sprue 12 and in so doing packing the sand more closely and solidly to produce a complete flat ingate upon withdrawing the sprues and then placing the part C of the flask upon the part D as shown in Fig. 8 in such a manner that the flat ingate will communicate with the mold or matrix previously made by inserting the part D and then placing the part C on top of it and clamping them together in a common way.

It is obvious various forms and sizes of pattern may be used to produce molds and castings advantageously by means of my coacting sprues.

Having thus set forth the purposes of my invention and its construction and manner of use the practical operation and utility thereof will be obvious.

What I claim as new and desire to secure by Letters-Patent, is:

1. In a two-part flask, the combination of a flat flask cover having a fixed flat and solid sprue and a casting having an integral pyramidal hollow sprue terminating in a flat tubular end as set forth for producing an ingate in the sand in the flask.

2. In the art of molding, a flask composed of two mating parts, a flat cover, a solid flat sprue connected with the cover, a flat casting fitted to enter the flask and a hollow sprue fixed to said casting to admit the solid sprue on the cover in the manner set forth for the purposes stated.

FRANK E. SMITH.

Witnesses:

ROBT. E. JOHNSON,
W. J. VAN DERVEER.