

No. 709,768.

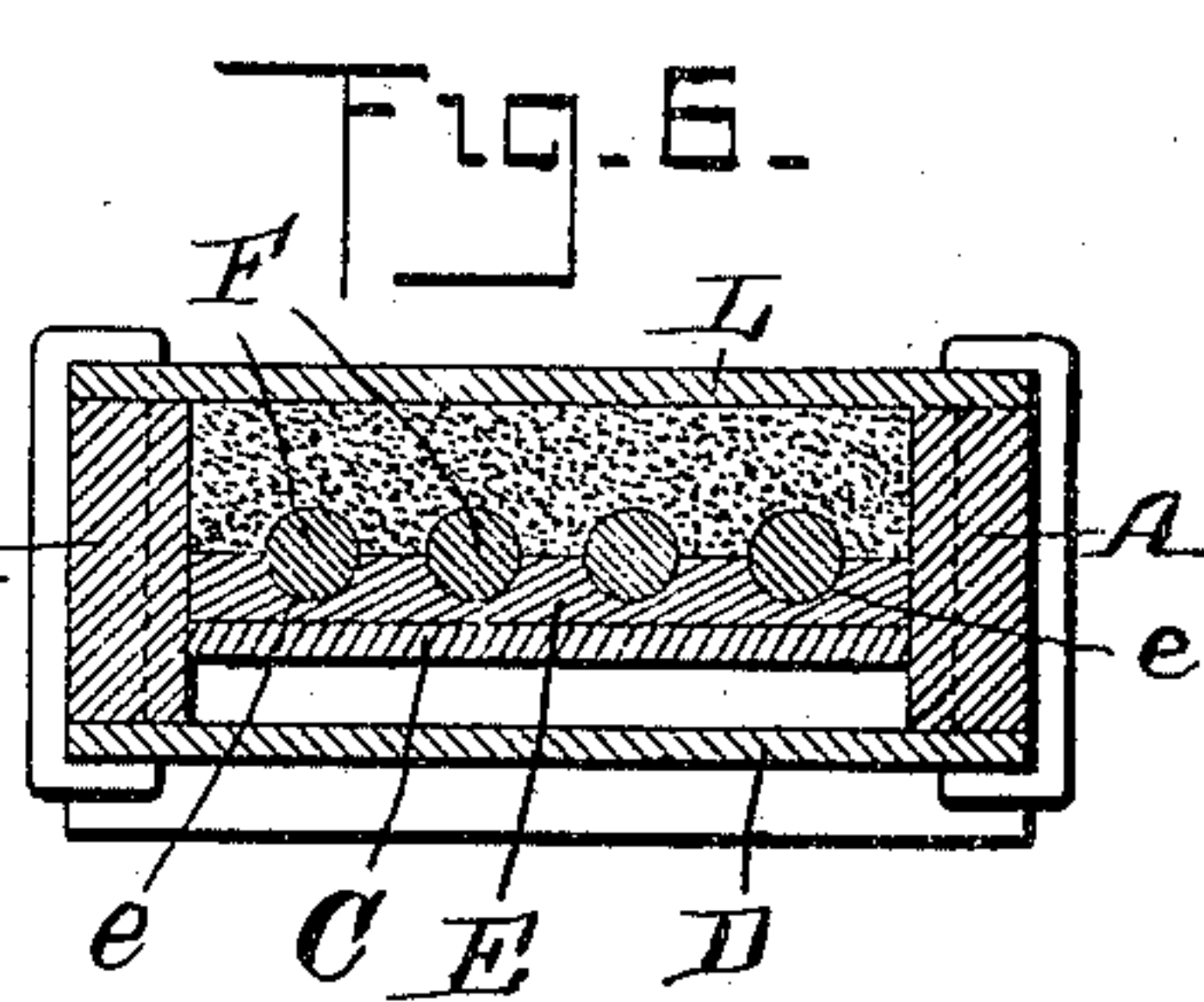
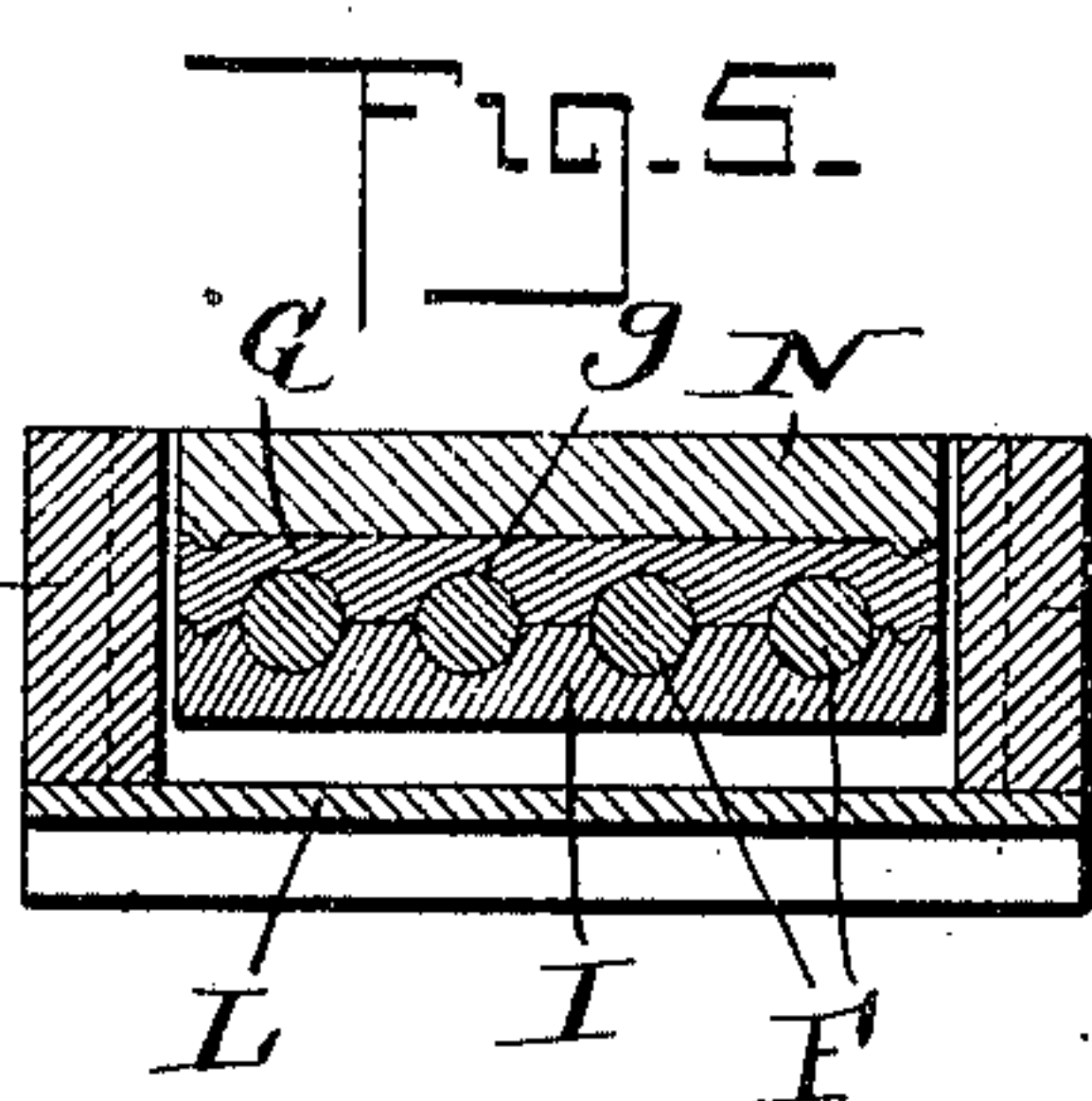
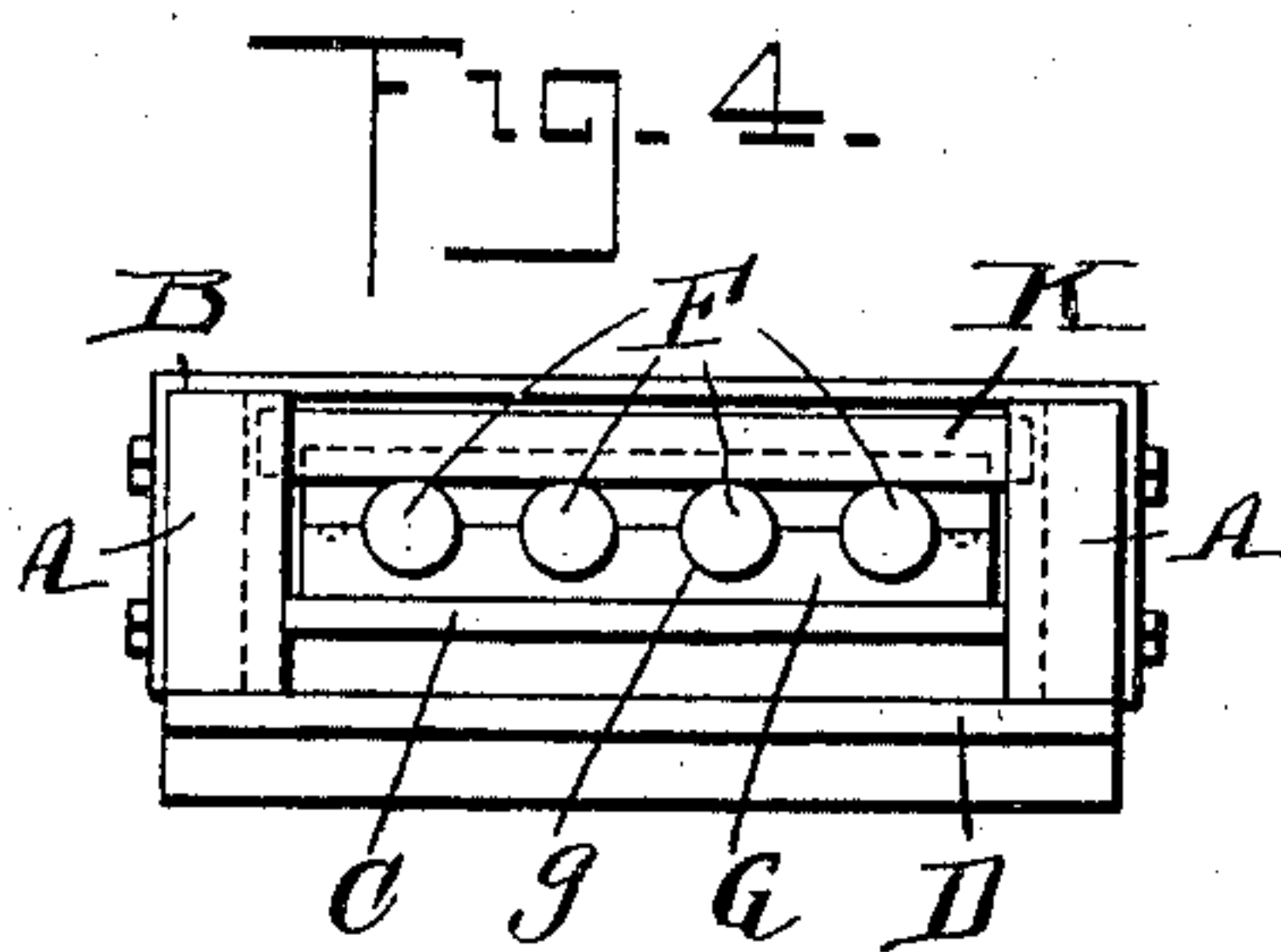
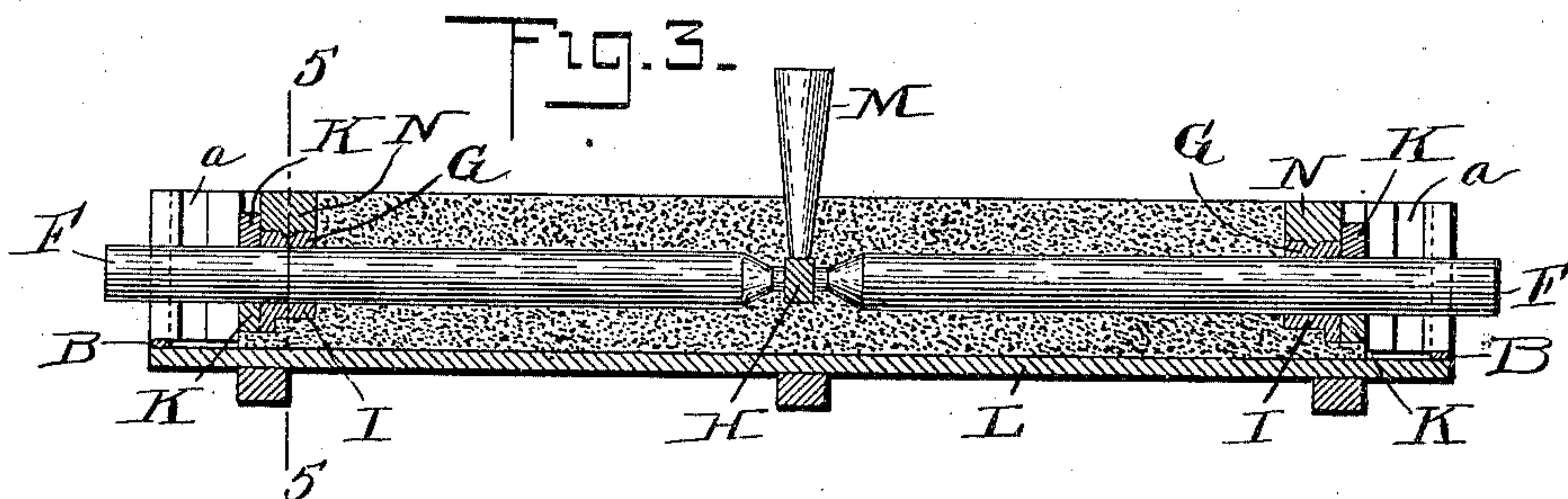
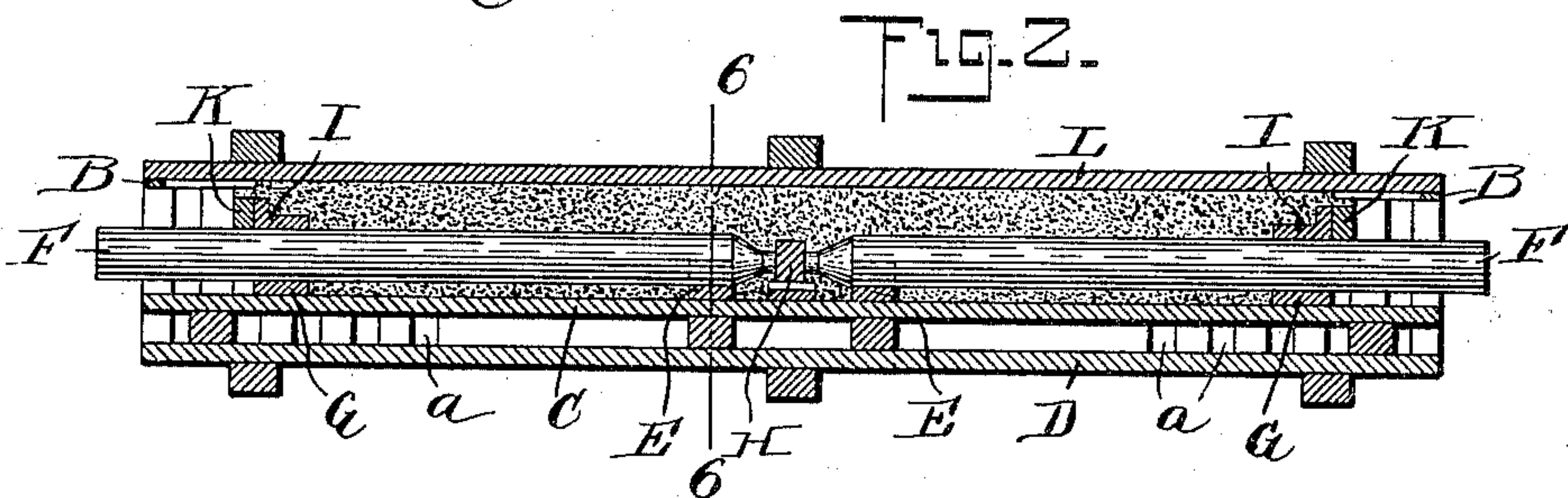
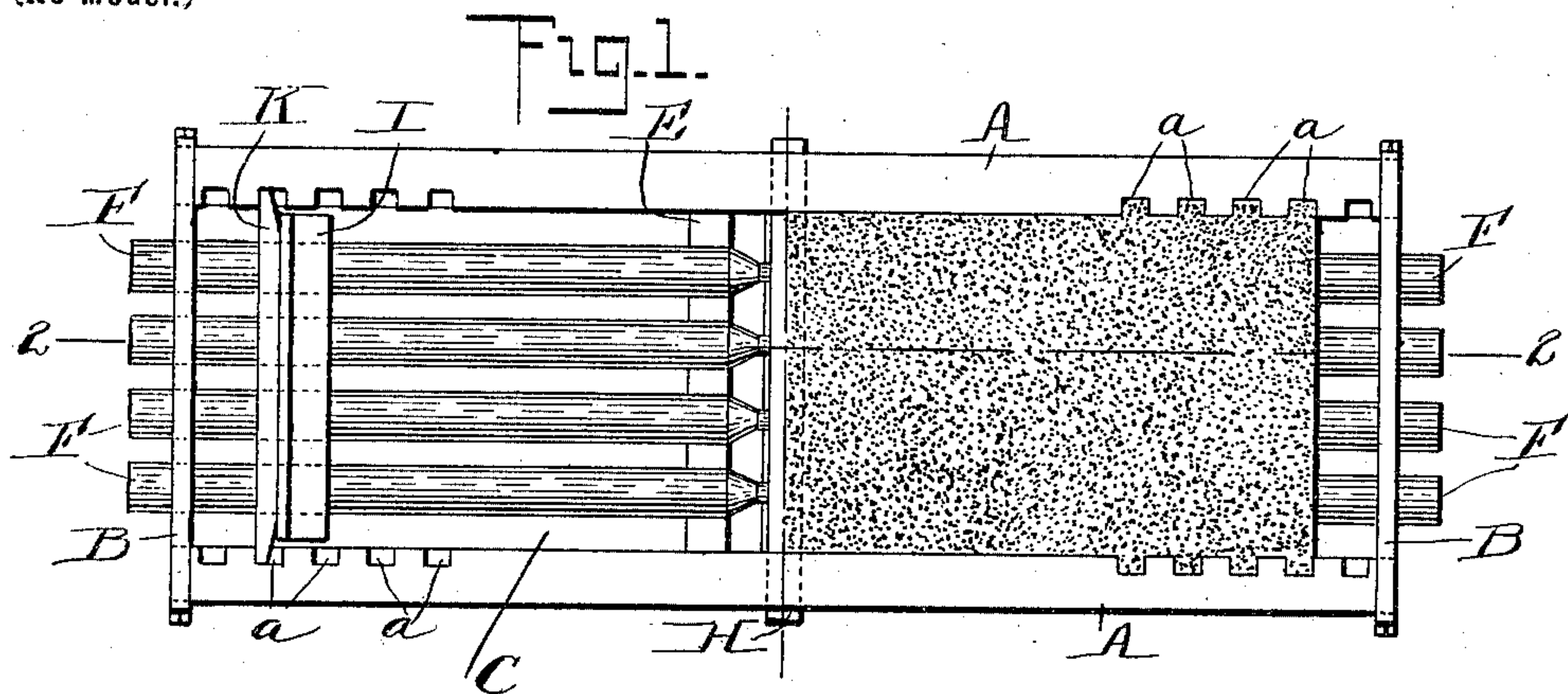
Patented Sept. 23, 1902.

A. S. HODGES.

FLASK FOR MAKING SEAMLESS SASH WEIGHTS.

(Application filed Aug. 16, 1900.)

(No Model.)



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ADDISON S. HODGES, OF EVERETT, MASSACHUSETTS.

FLASK FOR MAKING SEAMLESS SASH-WEIGHTS.

SPECIFICATION forming part of Letters Patent No. 709,768, dated September 23, 1902.

Application filed August 16, 1900. Serial No. 27,107. (No model.)

To all whom it may concern:

Be it known that I, ADDISON S. HODGES, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Flasks for Making Seamless Sash-Weights, of which the following is a specification.

This invention relates to improvements on patent granted me November 12, 1889, No. 414,838, for flasks for molding and casting seamless sash-weights, and it is described as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view of the improved flask with the bottom board removed, showing, first, the sides A A, joined by the metal end bars B B, also the sash-weight patterns F F, adjustable core-prints I, and stop-bar K, all in position on the false moldboard C preparatory to ramming the sand, and, second, showing the sand rammed in a portion of said flask. Fig. 2 represents longitudinal section on line 2 2 in Fig. 1, showing in elevation the sash-weight patterns F F lying upon the stationary pattern supports E E and adjustable pattern-supports G G, which are in position on the false moldboard C, also showing the false moldboard C extending up within the flask close to and under the sash-weight patterns F F and supported by the moldboard-support D, which forms the bottom of the flask, and showing the sand rammed from above, around, and between the sash-weight patterns F, down onto the false moldboard C, and the bottom board L placed in position preparatory to clamping and turning the flask over for second molding or ramming operation. Fig. 3 represents longitudinal section of the flask and contents resting upon and supported by the bottom board L after they have been turned upside down, showing the device with the moldboard-support D and the false moldboard C removed, the stop-bars K in place, and the adjustable pattern-supports G G built up by having the supplementary bars N N placed upon them, also showing the gate H and the sprue-pattern M in place and the sand rammed in the space between the pattern-supports G G up even with the upper edges of the supplementary bars N N. Fig. 4 represents end view of Fig. 1,

showing the stop-bar K in place and the sash-weight patterns F lying in the semicylindrical recesses *g* of the adjustable pattern-support G, which is in place upon the false moldboard C, also showing the false moldboard C inside the flask close up under the sash-weight patterns F and the flask and its contents resting on and supported by the moldboard-support D. Fig. 5 represents cross-section of Fig. 3 on line 5 5, showing the sash-weight patterns F lying in the semicylindrical recesses *g* between the core-print I and the adjustable pattern-supports G, also showing the adjustable pattern-supports G built up even with the upper edges of the sides A A by means of the supplementary bar N and the flask and contents resting upon and supported by the bottom board L. Fig. 6 represents cross-section of Fig. 2 on line 6 6, showing the stationary pattern-supports E in place on false moldboard C, with the sash-weight patterns F lying in the semicylindrical recesses *e*, also showing the sand rammed around the sash-weight patterns F up even with the upper edges of the sides A A, the flask and its contents supported by the moldboard-support D, also showing the bottom board L in place securely clamped to the moldboard-support D preparatory to turning the flask upside down for the second molding or ramming operation.

The improvements in this construction are as follows:

First, the new and additional end bars B B, which, firmly secured to the sides A A, hold them together the proper distance apart and with them form a rigid non-divided flask. These end bars B B are made of metal of the required length and strength and have arms at their ends which extend at right angles thereto. At the ends of the flask the arms on the ends of the bars B are firmly secured to the outside of the sides A A in such a manner that the horizontal part of each bar B connects the sides A A together across their tops, all as shown in Figs. 4 and 1. This construction is new and is adapted to admit the false moldboard C up inside the flask between its sides A A and to allow it to be removed after the flask is turned upside down preparatory to the second molding operation without disturbing contents of flask, all of which is of great advantage, as will be shown.

Further, this construction does not interfere with the withdrawing of the sash-weight patterns F from the sand after it is rammed around them or the placing of the head-molding device in position.

The second improvement is the new and additional false moldboard C, which is detachable and made equal in length to the length of the flask and in width adapted to just fit up into the flask between and within its sides A A. In height it is so constructed that when in position, with the sash-weight patterns F F and the pattern-supports E E and G G in place upon it, the sash-weight patterns F F will lie centrally in the flask, all as shown in Figs. 2 and 6. It rests during the first molding operation on moldboard-support D, as shown in Fig. 2, and is adapted after the flask is turned over preparatory to the second molding operation to lift out of the flask without disturbing its contents. To the upper surface of the false moldboard C are secured near its central portion the stationary pattern-supports E E. The upper surface of the false moldboard C, except where the pattern-supports E E are attached, is plain and allows the adjustable pattern-supports G G to be moved back and forth on it, according to the desired length to be given to the sash-weights.

The third improvement is the new pattern-supports E E and G G, made alike in every respect and equal in width to the width of the flask and the moldboard C. The supports E E are secured to the false moldboard C on its upper surface near its central portion, whereas the supports G G are loose upon the false moldboard C and adjustable back and forth on it. The supports E E and G G have in their upper sides semicylindrical recesses *e e* and *g g*, adapted to receive the sash-weight patterns F F, as shown in Figs. 6, 4, and 5. Together the supports E E and G G sustain the sash-weight patterns F F horizontally and at equal distances apart just above the false moldboard C, the same being so reduced in height as to admit the false moldboard C close up under the sash-weight patterns F F, all as shown in Figs. 1, 2, 4, and 5.

The fourth improvement is the new and additional bars N N, which are supplementary to the pattern-supports G G and are used to build the adjustable pattern-supports G G up flush with the edges of the flask sides A A after the flask is turned over and the moldboard-support D and the false moldboard C have been removed preparatory to second molding operation, as shown in Fig. 5. They will be hereinafter alluded to as "supplementary bars" N N. Together with the adjustable pattern-supports G G and the stop-bars K they form the ends of the space of which the sides A A form the sides, in which the sand is rammed during the second molding operation, and prevent the sand from moving outward when it is rammed in the flask, as shown in Fig. 3.

To better set forth the nature and importance of these improvements, the following descriptions and explanations are made:

H is the gate, inserted centrally through perforations in the flask sides A A previous to placing the patterns F in position in the flask.

K K are stop-bars made to extend across the flask, their ends being beveled, so as to be received in any of the notches *a a* in the sides A A. These stop-bars prevent the adjustable pattern-supports G G, the supplementary bars N N, and the adjustable core-prints I I from moving outward during the ramming or molding operation.

I I are adjustable core-prints made equal in length to the length of the adjustable pattern-supports G G and having on their undersides similar semicylindrical recesses adapted to receive one-half of the circumference of the sash-weight patterns F F.

L represents the bottom board, which after the first molding operation is placed on top of the flask, as shown in Figs. 2 and 6, and clamped to moldboard-support D, as shown in Fig. 6, and serves to hold the contents of the flask in place while said flask is turned over preparatory to the second molding operation. After the flask is turned over it is underneath said flask and serves as support for contents of the flask during the second ramming operation and casting of the metal.

D represents the moldboard-support, made in length and width equal to the outside dimensions of the flask. The same is detachable and serves as a support for the false moldboard C and the flask and its contents during the first molding operation. It further serves when clamped to the bottom board L, as shown in Fig. 6, as a bottom to the flask to prevent the contents of the flask from dropping out when the flask is turned over after the first molding operation. It is removed after the flask is turned over preparatory to the second molding operation, as shown in Fig. 3.

For convenience I divide the molding of the body of the sash-weight into two operations—namely, the first molding or ramming operation and the second molding or ramming—and proceed as follows: With the moldboard-support D upon a bench or other suitable device I place upon it the false moldboard C and the flask, the false moldboard C being within the flask. Then after inserting the gate H and placing the adjustable pattern-supports G G in position on the false moldboard C, according to the length of the sash-weights to be cast, I place upon them and the stationary pattern-supports E E in the recesses *g g* and *e e* the sash-weight patterns F F. Upon the sash-weight patterns F F, above the adjustable pattern-supports G G, I place the adjustable core-prints I I, which I hold in position and prevent from moving outward by inserting the stop-bars K K directly behind them, their ends received in the notches *a a*

on the interior of the flask sides A A, all as shown in Figs. 1, 2, 4, and 6. I then ram the sand into the flask between and around the sash-weight patterns F F, down onto the false moldboard C, and up even with the upper edges of the sides A A and strike it off. This is my first molding or ramming operation. Next the bottom board L is placed on top of the flask, as shown in Fig. 2, and suitably clamped to the flask and moldboard-support D, as shown in Fig. 6, after which the flask is reversed in position. The clamps are then removed, the moldboard-support D is taken off, and the false moldboard C is lifted out of the flask and placed to one side. Then upon the pattern-supports G G are placed the supplementary bars N N, and behind them a second set of stop-bars K, and the sprue-pattern M is placed in position upon the gate H, all as shown in Fig. 3. The sand is then rammed into the flask up even with the upper edges of the sides A A and the supplementary bars N N and struck off. This completes my second ramming or molding operation. The sash-weight patterns are then withdrawn, after which the supplementary bars N N the adjustable pattern-supports G G, and the adjustable core-prints I I are removed preparatory to placing in the space vacated by said parts the head-molding device for molding the perforated and lettered heads of the sash-weights. The gate H is then withdrawn and the perforations in the flask sides A A stopped with sand, and through the sprue-pattern hole, made by withdrawing the sprue-pattern M, the molten metal is afterward poured, as is common in the art of molding.

By securing the sides A A together at their ends by means of the metal end bars B B in the manner described above and shown in Figs. 1 and 4 I am enabled to dispense with the midway cross or binder bars that hold the sides of my flask together, as in my former patent, No. 414,838, and am enabled to produce the following new results:

First. I can maintain and keep my flask in repair at a greatly-reduced expense, as the wooden midway cross or binder bars that hold the sides of the flask together according to my former patent, No. 414,838, frequently burn out and often have to be renewed and repaired at constant expense and labor.

Second. By this construction the aforesaid cross or binder bars that hold together the sides of the flask, as described in my former patent, No. 414,838, being done away with, instead of having to construct especially different-sized flasks for making weights of different diameters I am enabled to make all diameters of regular-sized and special sash-weights in common use in the same flask, which is a great advantage and saving in making both regular-sized and special sash-weights and could not be done in the flask described in my former patent, No. 414,838.

Third. By this construction I am enabled

to place the false moldboard C within the flask close up to and under the sash-weight patterns F F, and as said false moldboard C supports the fixed pattern-supports E and adjustable pattern-supports G, I can make a greater variety of lengths of sash-weights than was possible in the flask described in my former patent, No. 414,838, by simply moving the adjustable pattern-supports G G back and forth on the upper surface of the false moldboard C, all of which is a great advantage and saving in making sash-weights of regular and special lengths and could not be done in the flask described in my former patent, No. 414,838.

Fourth. By this construction, used in combination with the new false moldboard C and with the new pattern-supports E E and G G, in my first molding operation instead of ramming the sand between the sash-weight patterns down to the moldboard, as was necessary with the construction of flask described in my former patent, No. 414,838, and which requires a great deal of time and skilled workmen, I am enabled to place the false moldboard C close up under the sash-weight patterns F F, and in my first ramming operation the sand is rammed between the sash-weight patterns F F down onto the false moldboard C only, so simple an operation that it can be done by an ordinary apprentice and in much less time than by the old method, and the sand can be rammed much more thoroughly, compactly, and solidly than in the old way; also, one-third less sand is used, which gives me a much lighter flask to handle when turning it over preparatory to the second molding operation. Furthermore, by this construction after the flask is turned over and the moldboard-support D is removed preparatory to the second molding operation instead of carefully tucking and ramming the sand back and forth across the flask under the four midway cross or binder bars, as is necessary with the construction of flask described in my former patent, No. 414,838, which is a difficult operation, taking a great deal of time and requiring skilled labor, I lift out the false moldboard C, build the adjustable pattern-supports G G up even with the sides A A by means of the new supplementary bars N N, place the sprue-pattern M in position on the gate H, and have a free and clear space in which to ram and strike off the sand, which is so simple an operation that it can be done in much less time than by the old method by ordinary workmen, and the sand can be rammed much more thoroughly, compactly, and solidly than was possible in the old way. Therefore because the sand can be rammed much more thoroughly, compactly, and solidly in both molding operations and also because using one-third less sand in the first molding operation there is a much lighter flask to handle when turning it over between the two molding operations, which greatly lessens the danger of disturb-

ing the contents of the flask. Further, I am enabled to greatly reduce the number of imperfect castings in the course of molding sash-weights; also, by saving time and skilled labor in both molding operations, because they are so much simpler, I am enabled to greatly reduce the cost of molding sash-weights. All of the above results are a great advantage and saving over my former method and could not be obtained in the process of molding sash-weights used when employing the flasks described in my former patent, No. 414,838.

Having thus fully described my invention, what I claim is—

In a flask for making seamless sash-weights, the combination of the parallel sides A, A, the metal end bars B, B, connecting said sides,

the bottom board L, removably secured to said sides, the core-prints I, extending transversely of the flask between said sides, the adjustable pattern-supports G opposite said core-prints, the supplementary bars N, extending transversely of the flask and in contact with said pattern-supports, and the stop-bars K extending transversely of and adjustably secured to said sides behind said core-prints and supports, as and for the purpose set forth.

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

ADDISON S. HODGES.

Witnesses:

ALBAN ANDRÉN,
ERNEST W. EMERY.