

No. 701,772.

Patented June 3, 1902.

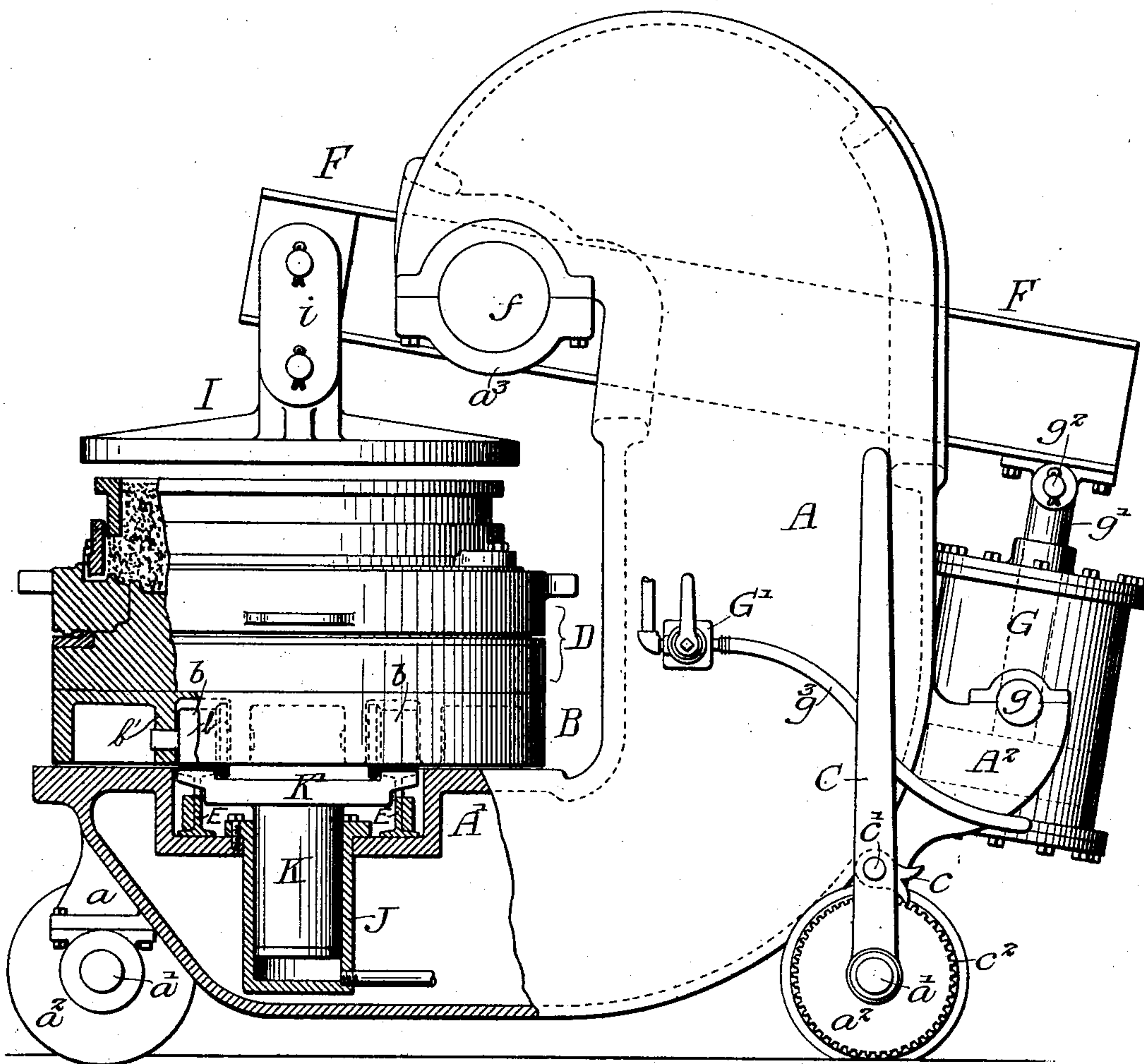
J. STUART.
MOLDING MACHINE.

(Application filed June 26, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses:-

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Inventor:-

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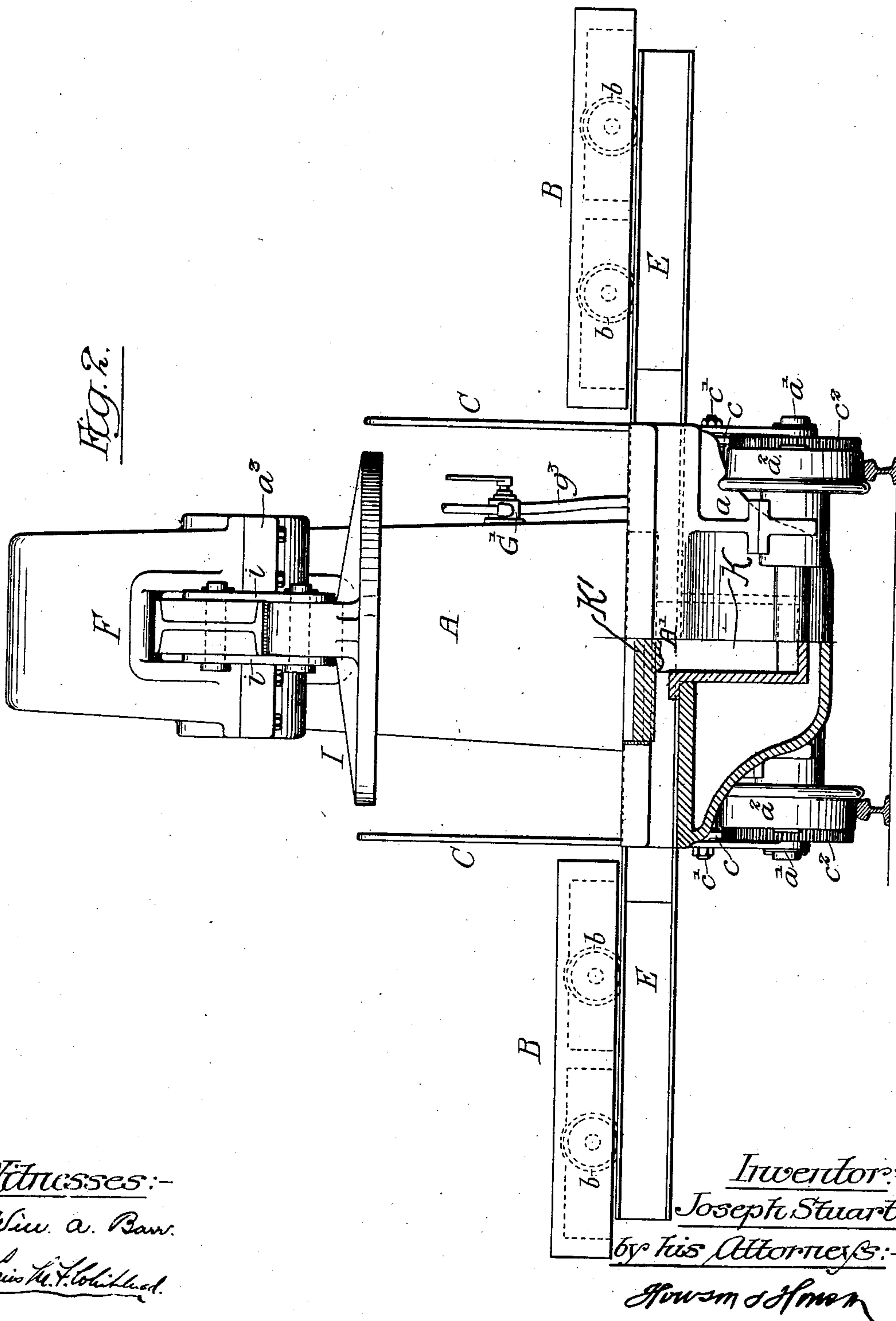
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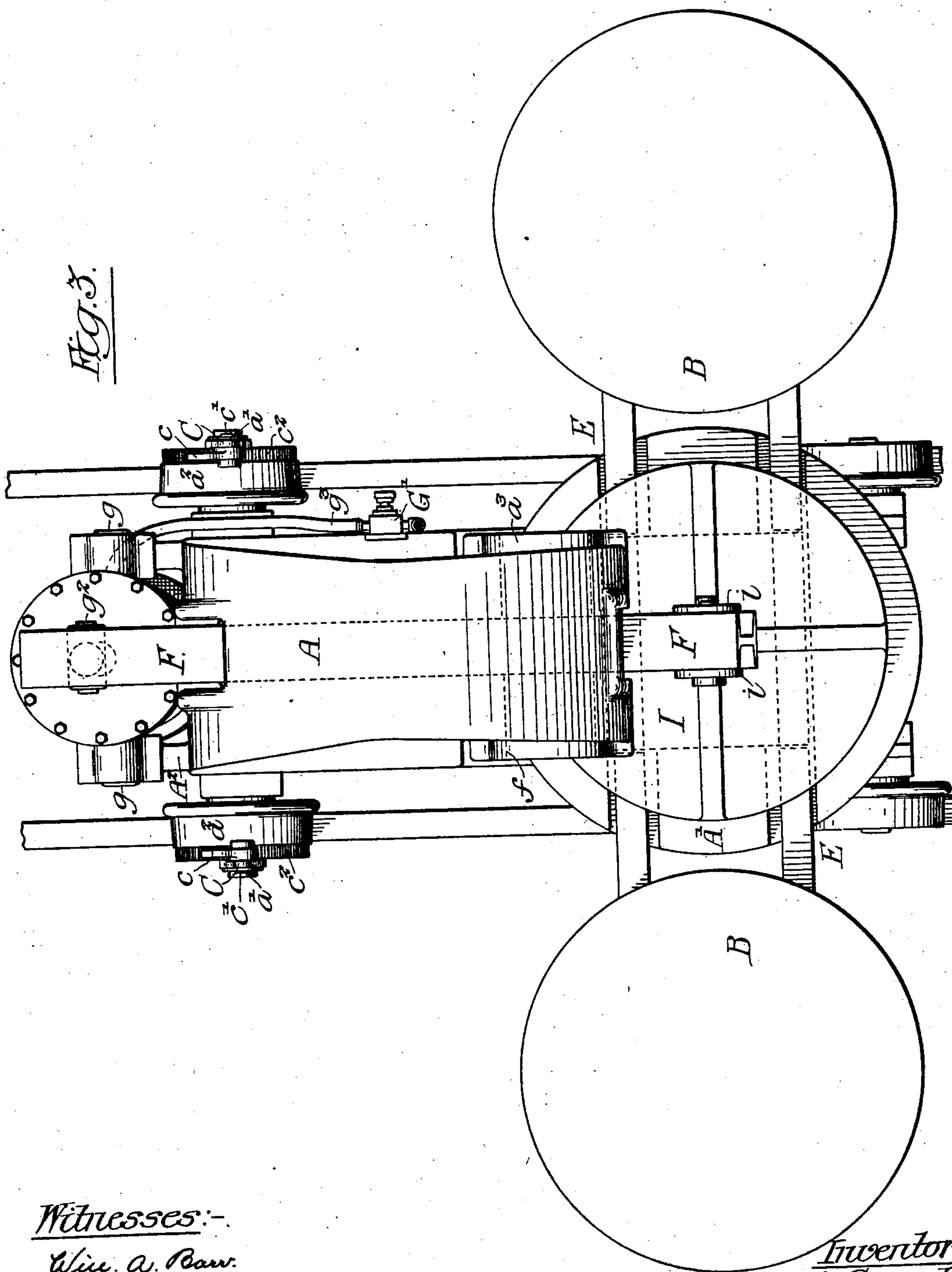
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3 Sheets—Sheet 3.

(No Model.)

Fig. 3.



Witnesses:-

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UNITED STATES PATENT OFFICE.

JOSEPH STUART, OF WILMINGTON, DELAWARE, ASSIGNOR TO LOBDELL
CAR WHEEL COMPANY, OF WILMINGTON, DELAWARE, A CORPORA-
TION OF DELAWARE.

MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 701,772, dated June 3, 1902.

Application filed June 26, 1901. Serial No. 66,132. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH STUART, a citizen of the United States, and a resident of Wilmington, Delaware, have invented certain Improvements in Molding-Machines, of which the following is a specification.

My invention relates to certain improvements in machines for pressing molds used in the process of casting.

10 The main object of my invention is to so construct a press that the proper pressure can be applied to the mold.

A further object of the invention is to so construct the machine that the molds can be readily placed in position to be pressed; and a still further object of the invention is to make the machine portable, so that it can be used on any part of the molding-floor.

20 In the accompanying drawings, Figure 1 is a side view of my improved molding-press. Fig. 2 is a front view, partly in section; and Fig. 3 is a plan view.

A is the frame of the machine, having bearings a for the axles a' , on which are the supporting-wheels a^2 . These wheels are arranged to travel on a track; but the track may be dispensed with in some instances.

30 One or more levers C may be provided for moving the machine from one part of a building to another. This lever in the present instance has a pawl c , pivoted at c' , engaging ratchet-teeth c^2 of one of the wheels a^2 . The lever C is pivoted to one of the axles a' . By shifting the pawl the machine can be moved either forward or backward.

A' is a table for the carriage B, which carries the flask D of the mold when pressure is applied to the mold.

40 Extending from each side of the table A' are beams E E, forming rails upon which the carriage B travels. The carriage is provided with wheels b , Fig. 1, and has a deep flange b' , as shown, so that when pressure is applied the flange will rest upon the table A' and the wheels and their axles will be relieved from pressure.

50 In the present instance I have shown two carriages B B, one for the cope and the other for the drag of the mold, so that while one part of the mold is being pressed the other

part can be prepared ready to be placed in position to be pressed as soon as the other part is removed, although in some instances the beams may extend only on one side of the machine, in which case only one carriage will be used.

Pivoted to the upper portion of the frame A at f is a lever F. The trunnion of this lever is of such a size as to withstand the strain to which the machine is subjected. The lever in the present instance is made in the form of an I-beam, and the frame A is recessed, so that the beam will pass through the frame and its trunnions $f f$ will be mounted in suitable bearings a^3 on each side.

65 Pivoted at g to a bracket A^2 , projecting from the rear of the frame A, is a cylinder G, in which travels a piston connected to a rod g' , which is pivoted at g^2 to the long arm of the lever F. The valve G' is arranged in the supply-pipe g^3 and controls the admission to and exhaust from the cylinder of fluid under pressure.

75 I is a presser-plate of sufficient size to cover the mold, and this plate is hung from the short arm of the lever F by links i , so that when fluid under pressure is admitted to the cylinder G the long arm of the lever F will be raised and the short arm and its presser-plate I will be lowered in contact with the portion of the mold D, and the presser-plate will compress the sand or other material within the mold. In order to relieve the wheels from the extreme pressure necessary to compress the sand within the mold, I provide a cylinder J, preferably directly under the center of the table A', and within this cylinder J is a plunger K, having at its upper end a flanged frame K', the flanges of which align with the beams E, so that when the carriage B is moved to a point directly above the table A' the wheels b of the carriage will rest upon the flanges of the frame K'. Fluid from a source of supply and under sufficient pressure is admitted to the under side of the plunger K in the cylinder J to support the carriage and the mold under normal conditions; but as soon as the fluid under pressure is admitted to the cylinder G, causing the presser-plate I to press the mold, then

this additional pressure upon the plunger K will cause the same, as well as its connected parts, to be lowered, and the flange *b'* of the carriage B will then rest directly upon the table A', relieving the wheels and their axles from the pressure, so that the mold can be compressed between the table A' and the presser-plate I. The mold I prefer to use is one in which the upper portion is movable, so that when the pressure is applied the sand within the mold is not only condensed, but the movable portion is pressed into the fixed portion of the mold. By this means the mold can be filled very quickly with sand to the upper surface of the movable portion of the mold and when placed in the machine it can be pressed so that the sand will be of the density required.

The above-described mold forms the subject of a separate application for patent filed by Robert C. Tolmie, of even date herewith, and therefore need not be further described in this specification, as it forms no part of this present invention.

I claim as my invention—

1. The combination in a machine for pressing molds, of a main casting forming an integral frame, a carriage for a mold and a support for the same carried by said frame, a lever pivoted to the frame and extending through an upwardly-projecting portion of the main casting constituting the same, a presser-plate connected to the lever, a cylinder carried by the frame, and a piston in the cylinder connected to the lever with means for supplying fluid under pressure to the cylinder, substantially as described.

2. The combination of a frame having a table, a yielding support carried by said table, laterally-extending rails in line with said support, a carriage mounted on the rails and arranged to be moved onto the yielding support, and means for pressing the mold carried by the carriage, a portion of said carriage being over the table and constructed to engage a fixed portion of said table when pressure is applied to a mold, substantially as described.

3. The combination of a frame, a table, beams extending from said table, a carriage, wheels on said carriage arranged to travel on the beams, means for pressing the mold mounted on the frame, a cylinder under the

table, a plunger in said cylinder, a frame carried by said plunger and arranged to support the wheels of the carriage, with means for supplying fluid to the cylinder, the fluid in said cylinder being under such pressure that during the process of pressing the mold the carriage will rest directly upon the table and relieve the wheels from pressure, substantially as described.

4. The combination of a frame, a table, beams extending on each side of the table, one or more carriages mounted on the beams, a cylinder pivoted to the frame, a lever also pivoted to the frame, a piston mounted within said cylinder and connected to the long arm of the lever, a presser-plate hung from the short arm of said lever, means for admitting fluid under pressure to the cylinder, said carriages having portions placed to rest upon the table independently of the supporting-frame when the machine is operated, substantially as described.

5. The combination of a frame, a table, beams carried by said table and extending from each side thereof and forming rails, one or more carriages mounted on said rails and arranged to receive the mold to be pressed, a cylinder below the table, a plunger in said cylinder, a frame carried by said plunger and having flanges in line with the beams so that the carriage can be transferred from the beams onto the flanged frame, a lever pivoted to the upper end of the main frame of the machine, a presser-plate connected to the lever and mounted directly above the table, and means for operating the lever, substantially as described.

6. The combination of a frame, a table, a carriage, a support therefor yieldingly mounted on the table, means on the frame for pressing the mold on said carriage, the latter having portions placed to rest upon the table whereby it is carried independently of the support when the pressing means is operated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH STUART.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.