

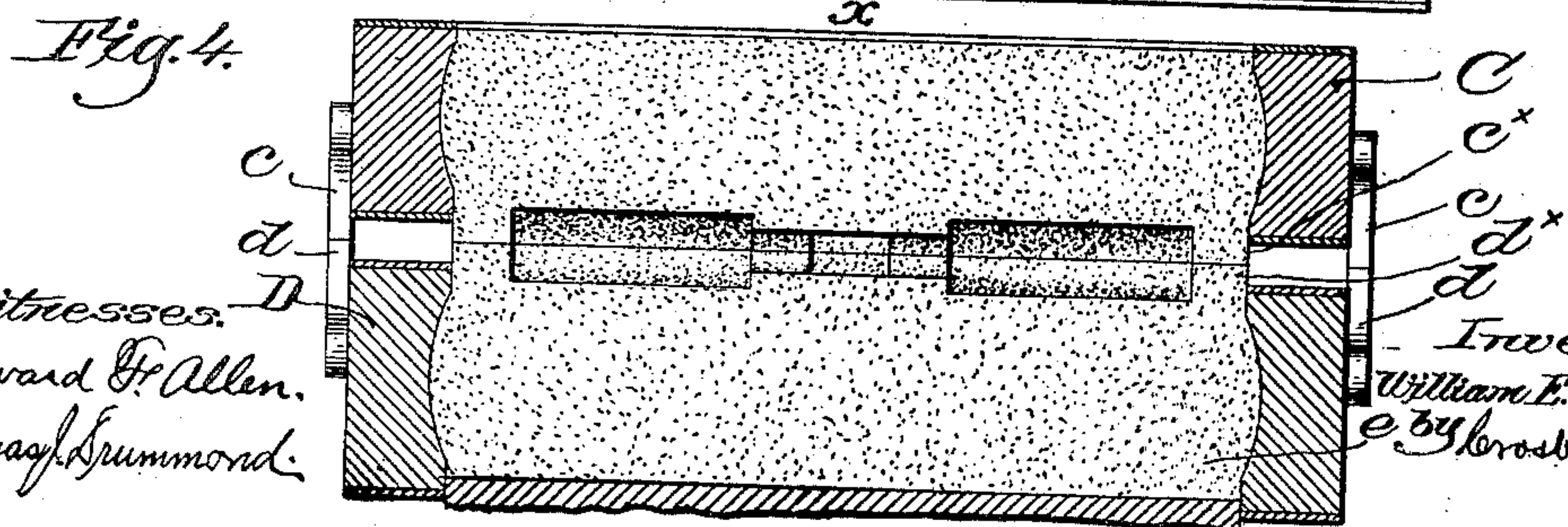
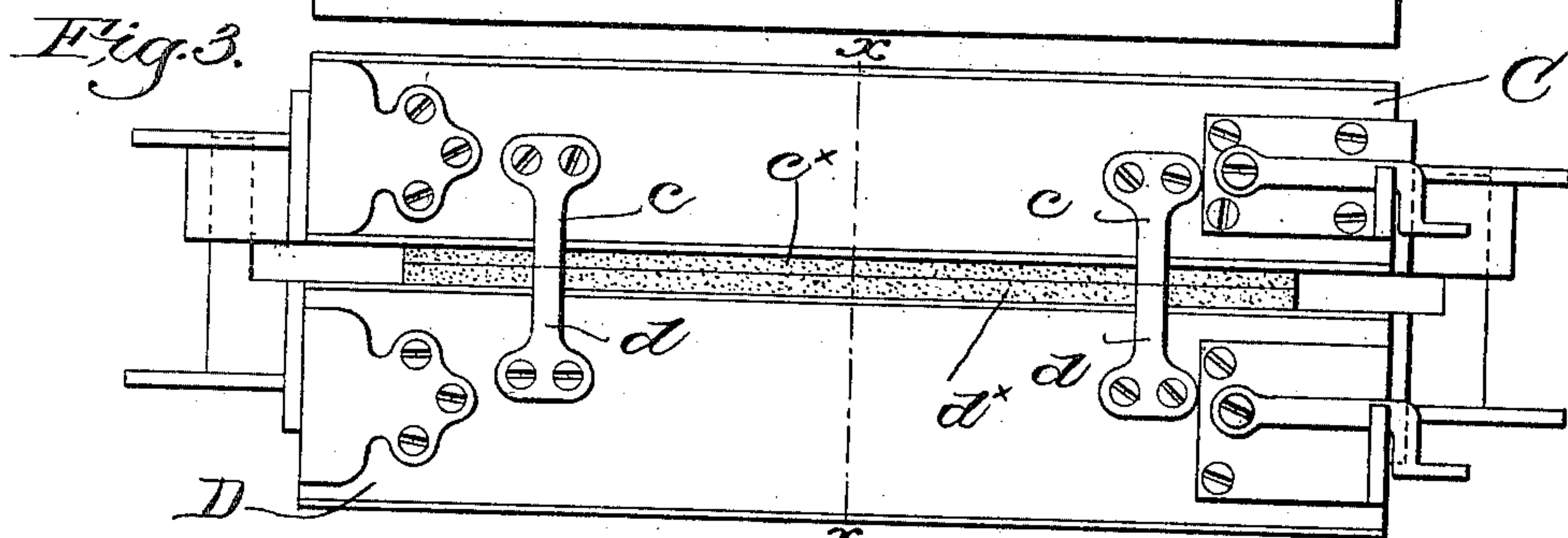
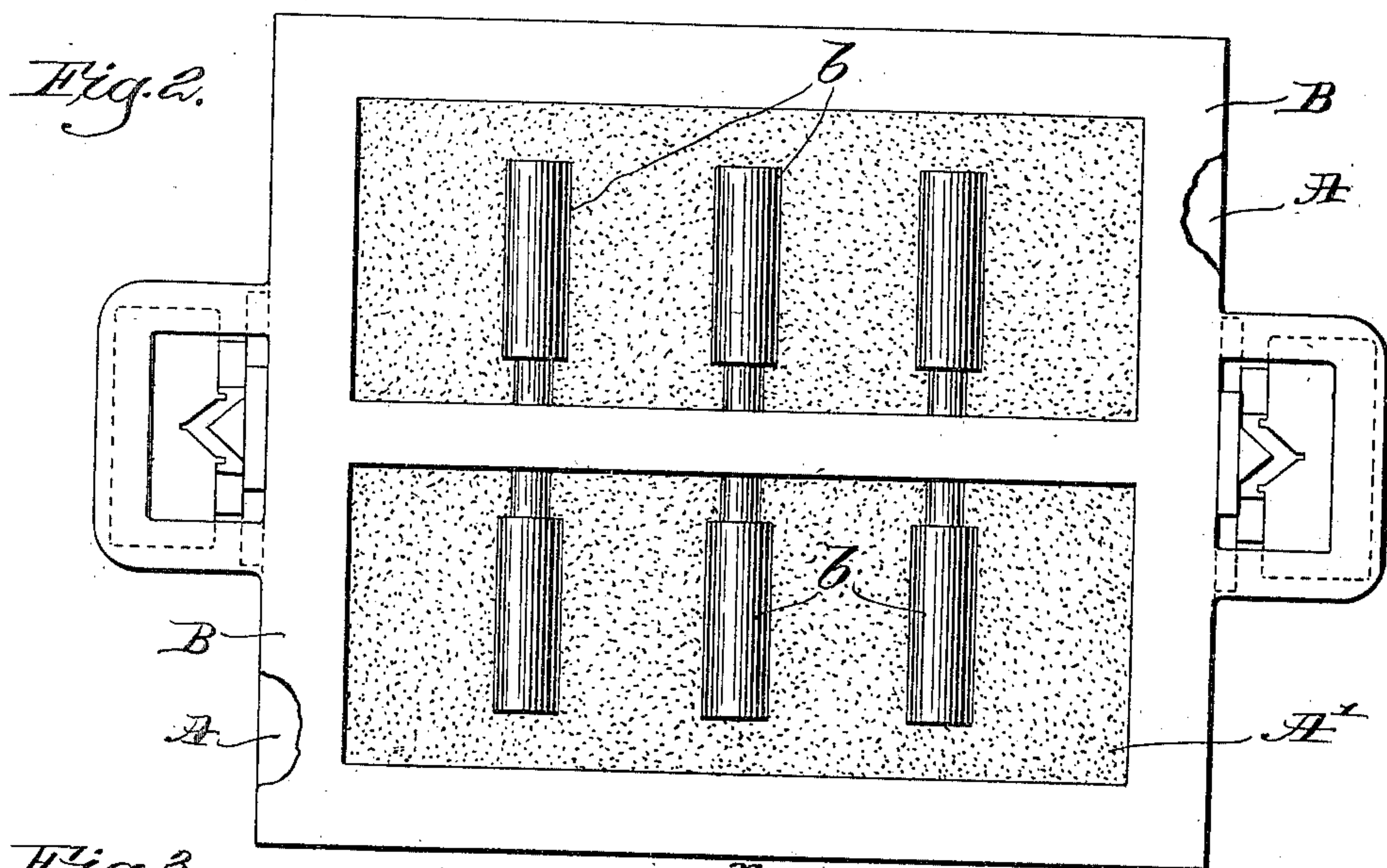
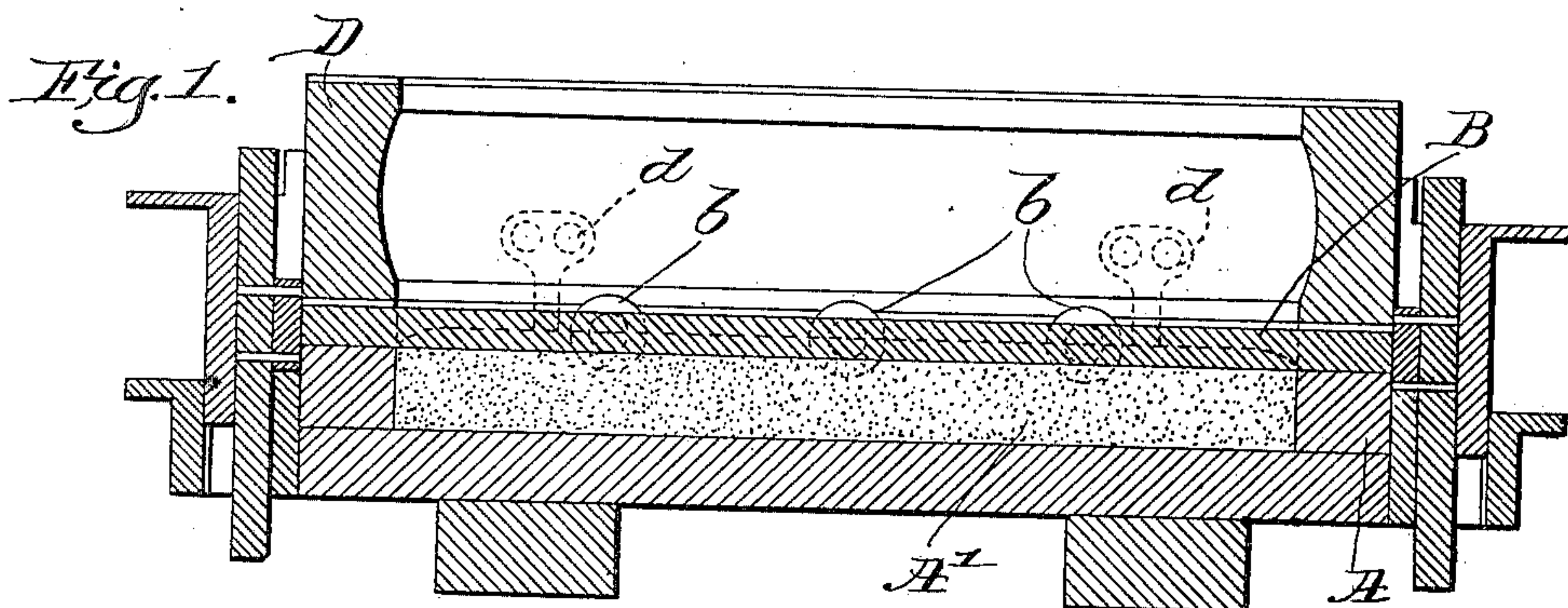
No. 697,948.

Patented Apr. 15, 1902.

W. E. McCLEARY.
MOLDING APPARATUS.

(Application filed Oct. 9, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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MOLDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 697,948, dated April 15, 1902.

Application filed October 9, 1901. Serial No. 78,048. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. McCLEARY, a citizen of the United States, residing at Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Molding Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 In certain types of molding apparatus the pattern is sustained by and within a frame, the perimeter of which substantially corre-
sponds with the match-frame and with the
15 drag and cope flasks, such pattern-frame being sustained by the drag-flask and support-
ing the cope-flask while the cope is being
constructed, so that when the said frame is
20 removed after the pattern is drawn the part-
ing faces of the cope and drag project beyond
the corresponding faces of their inclosing
flasks. When these two parts of the mold are
brought together, the parting face of the cope
25 must of course register accurately with the
opposed drag-face, and great care must be ex-
ercised to prevent uneven pressure upon the
parting faces, and frequently the molder will
press the cope down so hard that the parting
faces will be more or less crushed, resulting
in an imperfect casting.

30 My invention relates to molding apparatus
of the type referred to; and it has for its ob-
ject the production of means to positively con-
trol and regulate the pressure between the
parting faces when the cope is placed upon
35 the drag, the pressure being also maintained
uniform throughout. Improper contact of the
parting faces, and consequent injury thereto
by crushing or unequal pressure, is absolutely
prevented by my invention, and the assem-
40 bling of the drag and cope is also materially
facilitated.

In the present embodiment of my invention
I provide the drag and cope flasks with suit-
able stops, which coöperate when the two
45 parts of the mold are brought together after
removal of the pattern-frame, providing for
the relative positioning of the flasks exactly
as they were during the construction of the
cope.

50 Figure 1 is a longitudinal section showing
the match and its frame with a pattern-frame

in place, the drag-flask being applied ready
for the construction of the drag. Fig. 2 is a
top or plan view of the match and its frame
with the pattern-frame in position, the per- 55
imeter of the pattern-frame being broken
out in places to show the match-frame be-
neath it. Fig. 3 is a side elevation showing
the parts of the mold assembled after the com-
pletion of the cope and removal of the pat- 60
tern-frame, illustrating one embodiment of
my invention; and Fig. 4 is a transverse sec-
tion on the line *xx*, Fig. 3.

The match-frame A, containing the match
A', in which is formed the counterpart of the 65
pattern of whatever form, the pattern-frame
B, supporting the pattern *b*, Fig. 2, and hav-
ing its perimeter shaped to correspond with
the match-frame, and the drag and cope flasks
D and C, respectively, are and may be of 70
usual construction and arrangement, said
parts being substantially as shown in mold-
ing apparatus of the type referred to and now
extensively used. In such apparatus after
the drag and cope have been completed and 75
the pattern-frame removed the parting faces
of the mold project above the flasks, so that
when the said faces are brought together there
should be a clearance between the opposed
edges of the two flasks equal to the thickness 80
of the pattern-frame. Owing, however, to
careless or too rapid work by the molder, this
clearance is not maintained, and the cope
will be pressed down too hard or with un-
equal pressure upon the drag, and the part- 85
ing face of either or both faces will be
crushed and damaged. In the present em-
bodiment of my invention I have provided
stops which coact at such time to preserve
such clearance intact, and to consequently 90
maintain the separation of the drag and cope
flasks at exactly the same distance they were
previously separated by the interposed pat-
tern-frame, so that when the stops coact the
parting faces of the mold are just in contact 95
and with precisely the requisite pressure.
Herein the stops are shown as lugs or projec-
tions *c d*, rigidly attached, as by screws, to
the cope and drag flasks, respectively, and
extending beyond their opposed edges. 100

The pattern-frame B is shown in Figs. 1
and 2 as resting upon the match-frame A,

with the pattern *b* in the counterpart of the match *A'*, and the drag-flask *D* is in place resting on the pattern-frame ready to be rammed in usual manner with sand or other molding material. The drag having been rammed and completed, the match and drag are turned over, the bottom of the drag resting on a suitable squeezer-board *e*, partly shown in Fig. 4, and the match is removed, the pattern-frame then resting on the top of the drag-flask. The overturning of the drag places the stops *d* in their operative position and thereafter the cope-flask will be applied, and while the pattern-plate is interposed between the flasks the cope-flask will be filled with sand to cover the pattern and rammed. The ramming having been completed, the pattern-frame is rapped or vibrated slightly in usual manner to enable the cope to be lifted off, and the pattern-frame will thereafter be removed, all as now commonly practiced. When the cope is placed over the pattern-frame, however, the ends of the stops *c* and *d* will just touch each other, the stops on each flask projecting beyond the edge thereof a distance equal to substantially one-half the thickness of the pattern-frame. The use of a pattern-frame as described leaves the parting faces of the drag and cope projecting beyond the edges of the drag and cope flasks, as at *d'x c'*, Figs. 3 and 4. After removing the pattern-frame the cope is turned over and placed upon the drag, and at this time the stops *c* and *d* contact one with the other (see Figs. 3 and 4) just as the parting face of the cope meets the corresponding parting face of the drag, the contact of the stops insuring the gentle contact of the parting faces of the mold, positively controlling the pressure between them and obviating all liability of disturbance thereof by crushing or unequal pressure. In other words, the clearance between

the opposed edges of the drag and cope flasks is maintained by the stops at precisely the distance by which such edges were separated by the pattern-plate during the construction of the cope. When assembling cope and drag, all the molder has to do is to see that the usual flask-guides coöperate, and he then quickly lowers the cope until the stops *c* engage the stops *d* on the drag-flask, so that the rapidity of the work is increased and the effect of carelessness or lack of skill in properly bringing the parting faces of the mold together is reduced to a minimum.

I have herein shown well-known forms of snap-flasks held together by suitable catches when in use in usual manner, and after the drag and cope have been assembled, as described, said flasks may be unlocked and removed from the mold to be again used in the production of other molds.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In molding apparatus, drag and cope flasks, a pattern-frame to rest upon the drag-flask and sustain the cope-flask during the construction of the cope, and stops projecting beyond the opposed portions of the flasks and contacting with each other when the pattern-frame is interposed, said stops also coöperating with each other after removal of the said frame, to equalize and positively control the pressure between the parting faces of the mold.

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

WILLIAM E. McCLEARY.

Witnesses:

GEORGE OTIS DRAPER,
ERNEST W. WOOD.