

No. 735,729.

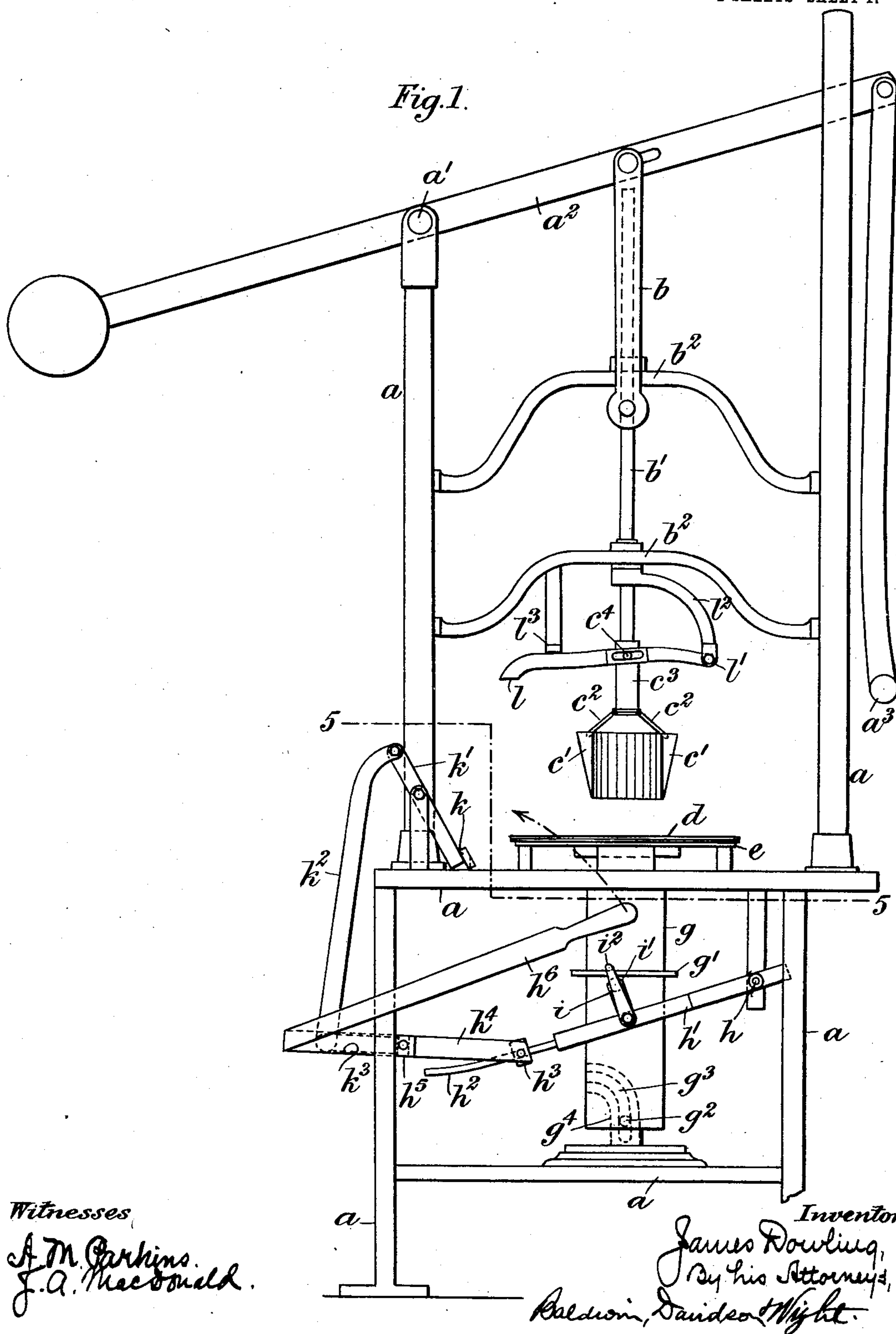
PATENTED AUG. 11, 1903.

J. DOWLING.
PAPER FOLDING OR PLAITING MACHINE.

APPLICATION FILED MAR. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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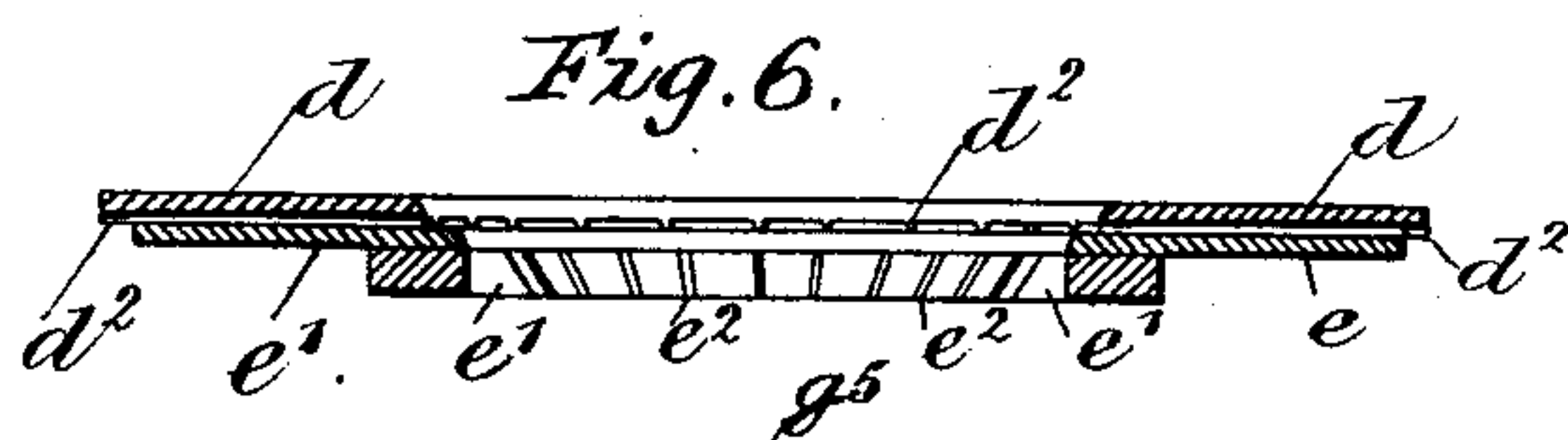
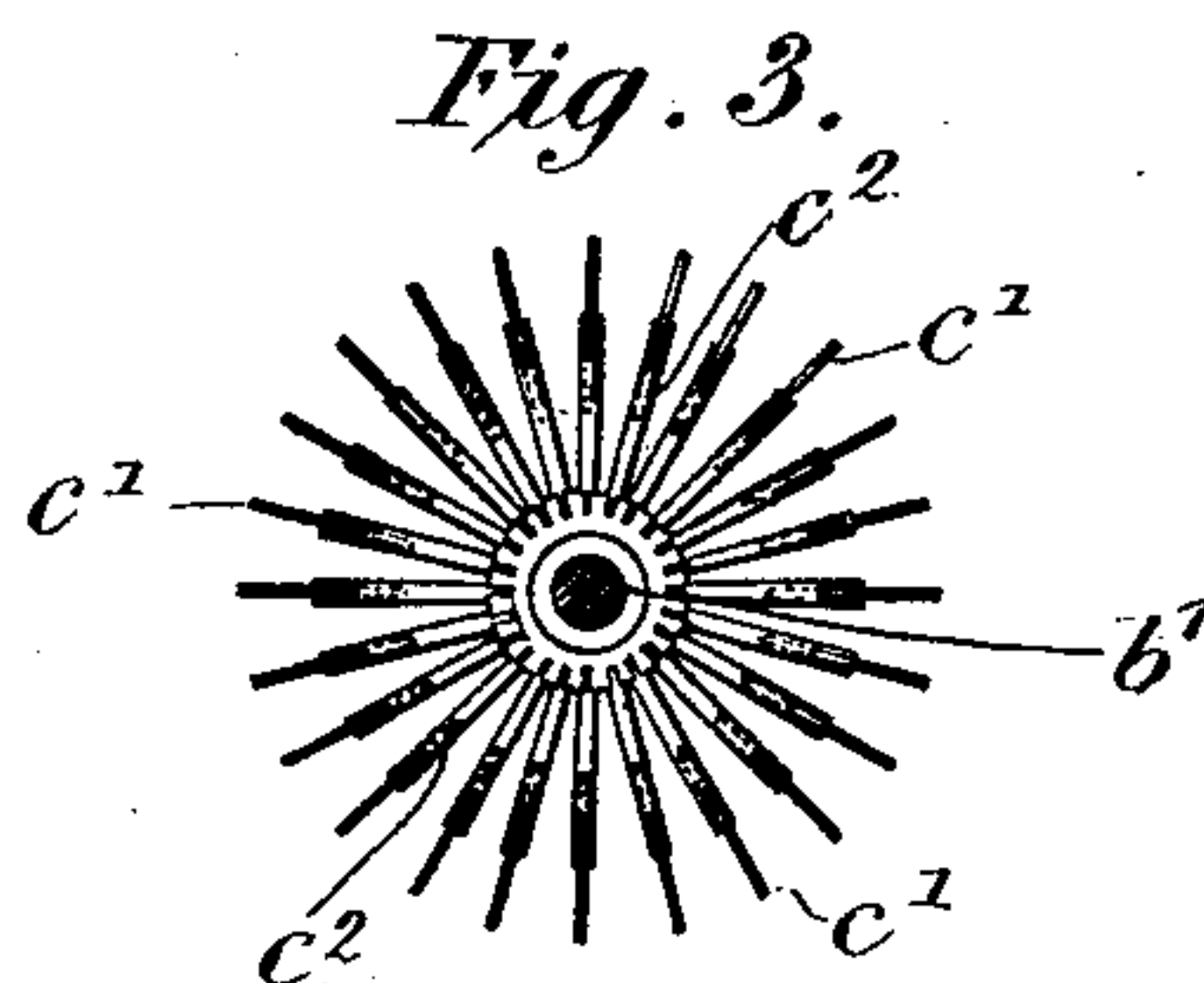
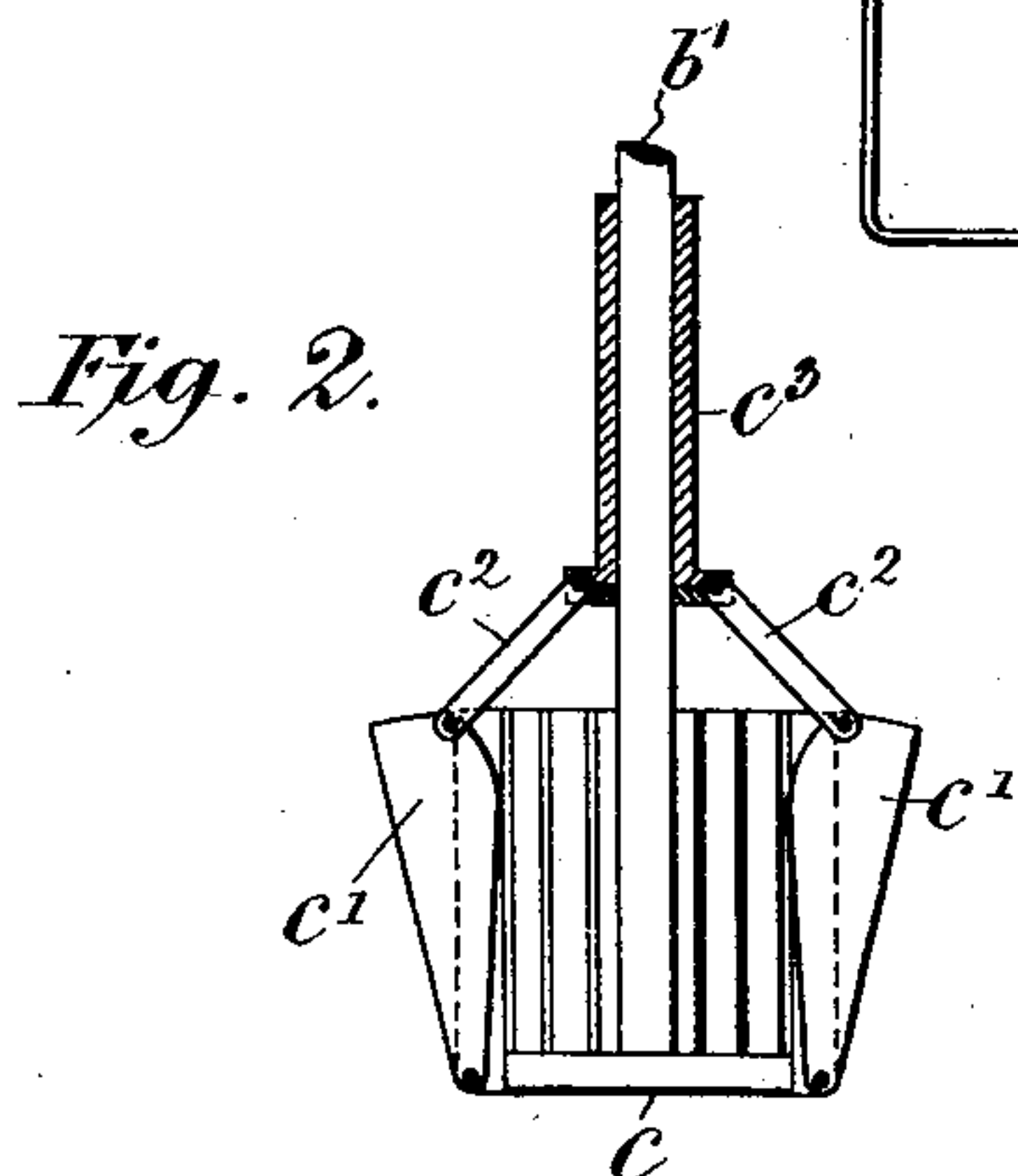
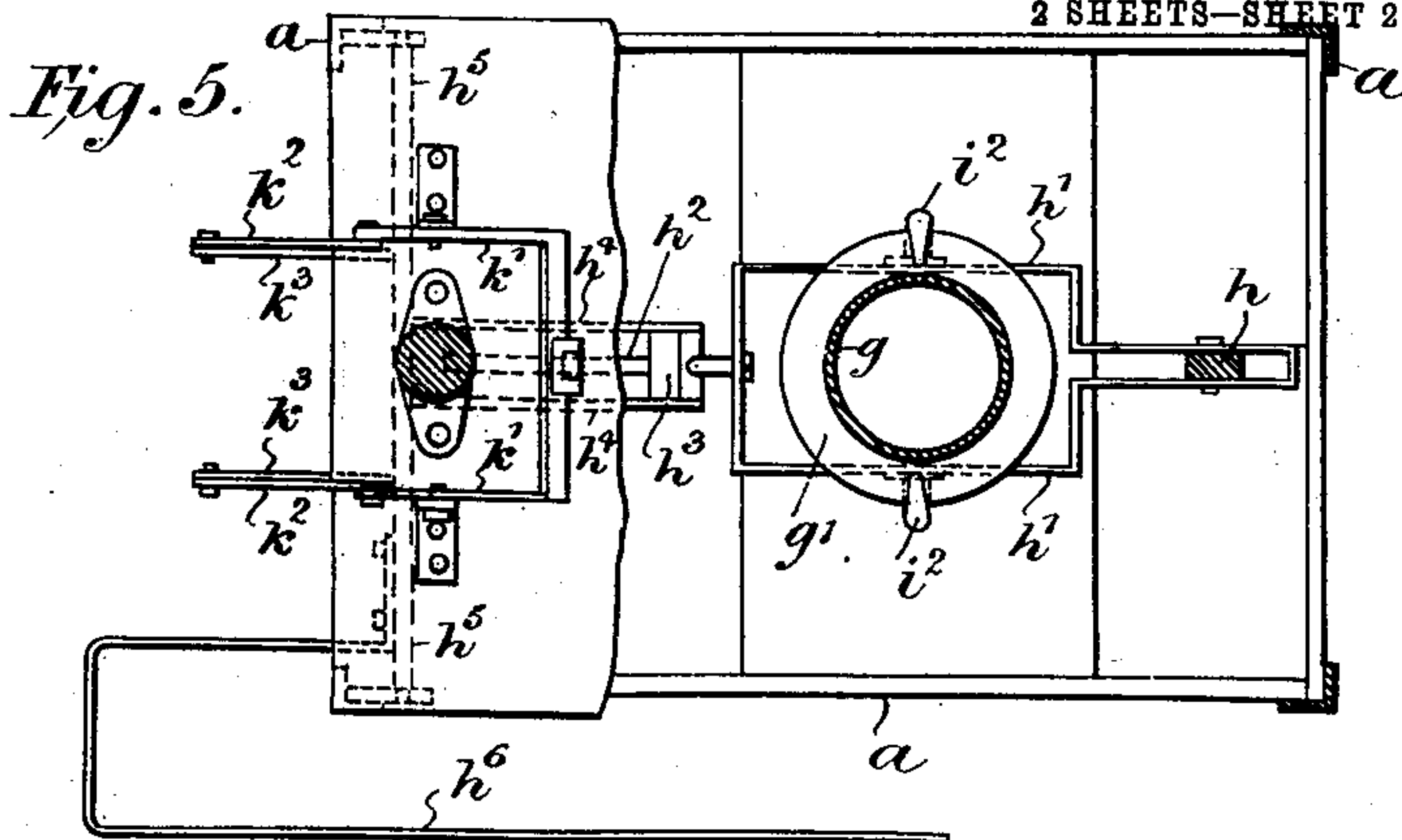
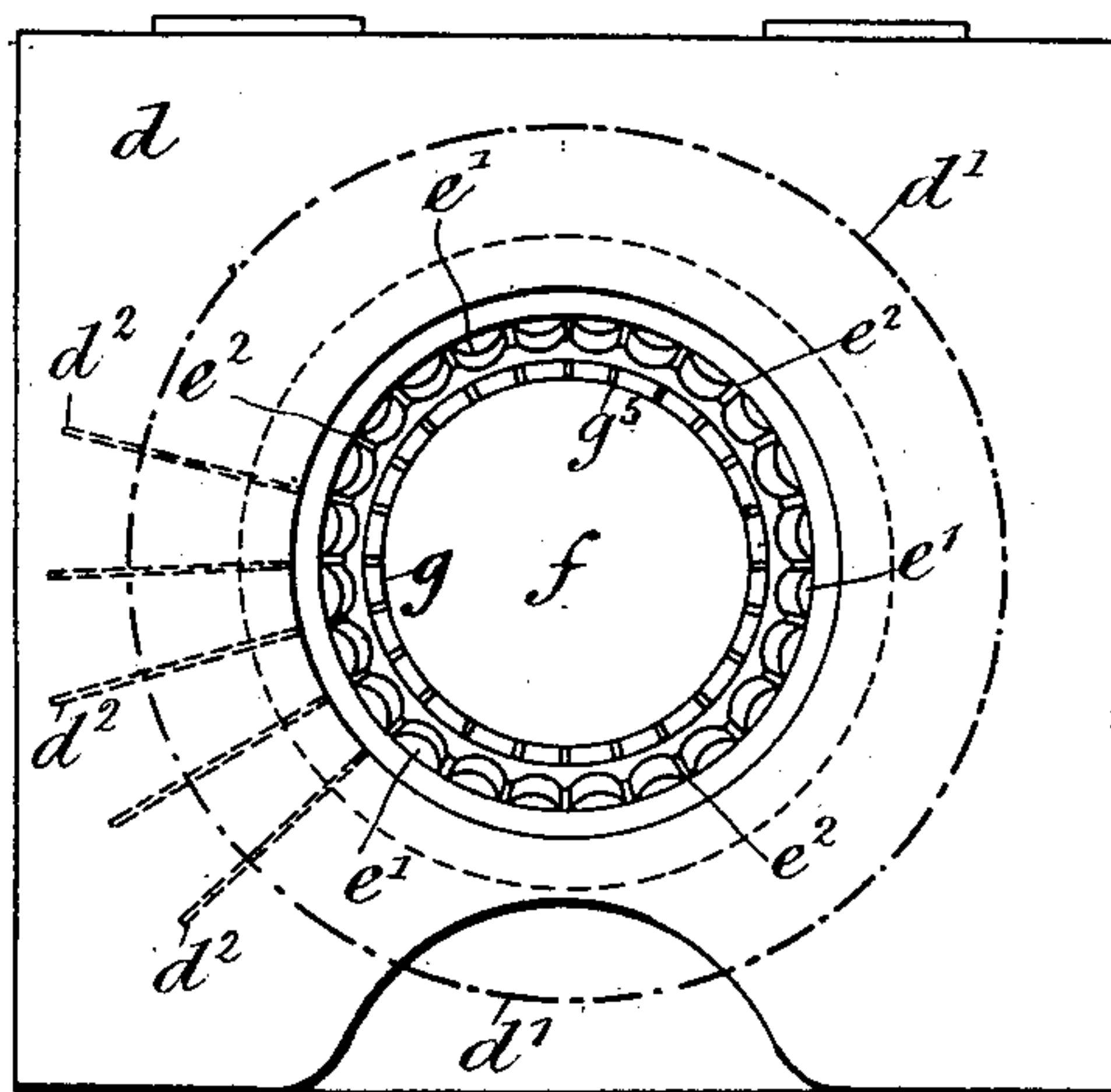
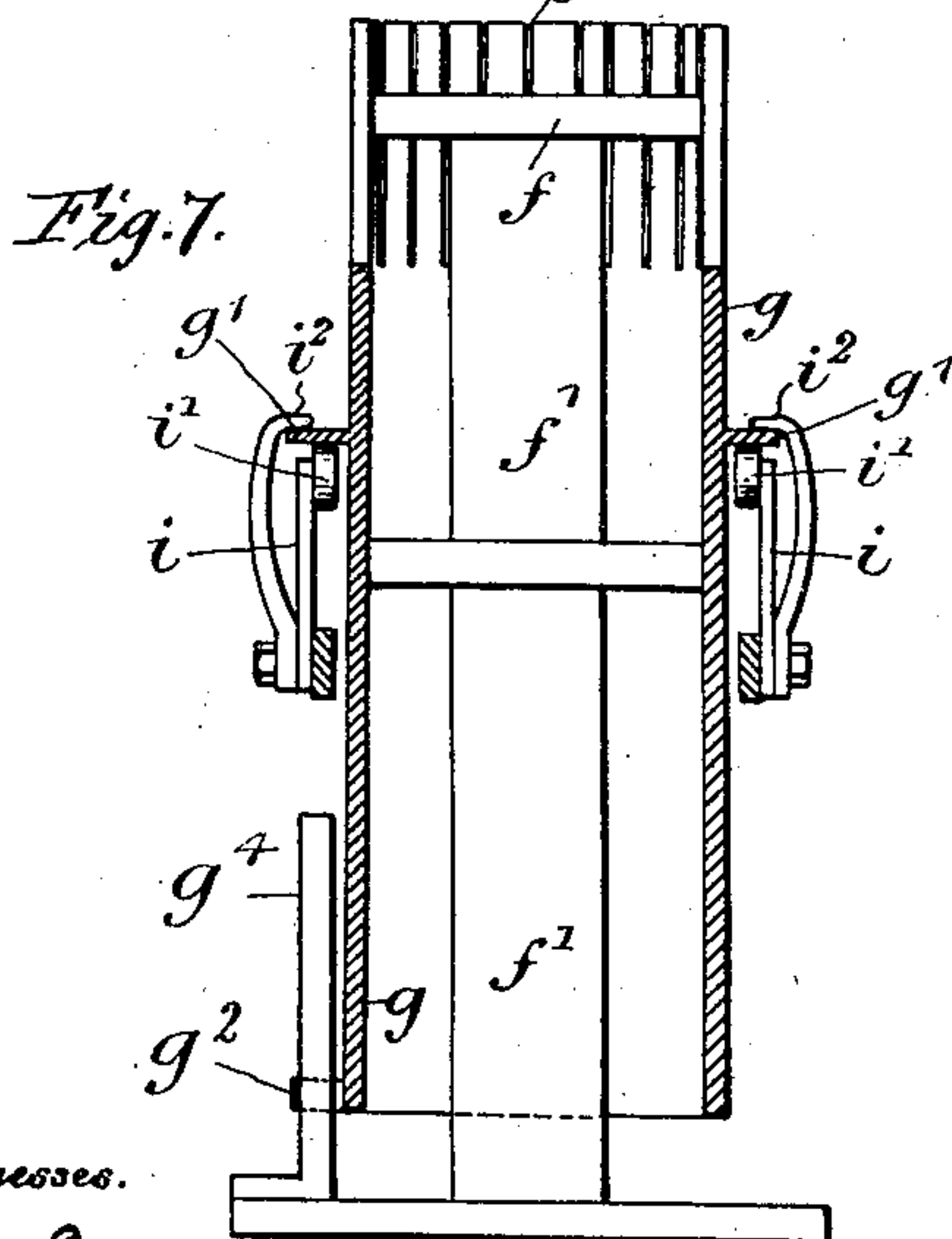


Fig. 4.



Witnesses.

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J. A. Macdonald.

Inventor.
James Dowling,
By his Attorney,
Baldwin Davidson & Wright.

UNITED STATES PATENT OFFICE.

JAMES DOWLING, OF LONDON, ENGLAND.

PAPER FOLDING OR PLAITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 735,729, dated August 11, 1903.

Application filed March 14, 1903. Serial No. 147,810. (No model.)

To all whom it may concern:

Be it known that I, JAMES DOWLING, engineer, a subject of the King of Great Britain, residing at 35 Jewin street and 40 Jewin Crescent, London, England, have invented a certain new and useful Paper Folding or Plaiting Machine, of which the following is a specification.

The object of this invention is to provide a machine for folding sheets of paper or parchment to form a lining for cylindrical tins in which meat, fish, and other goods are canned; but the machine may be used for folding or plaiting paper or the like for other purposes.

My machine comprises two plates each with a central hole, between which a circular sheet of paper can be laid, and a plunger consisting of a series of radial blades, which descending and pushing the paper through the hole in the lower plate force it into recesses around the circumference of this hole, after which a cylindrical folder rises and folds down the plaits so formed.

Figure 1 of the drawings is a front view of such a machine; Fig. 2, a central section, to a larger scale, of the plunger. Fig. 3 is a plan of the plunger, and Fig. 4 a plan of the plates and folder; Fig. 5, a horizontal section on the line 5 5, Fig. 1. Fig. 6 shows a vertical central section, on an enlarged scale, of the plates. Fig. 7 shows a vertical central section, on an enlarged scale, on the folder.

a is the framework of the machine, carrying on a pivot a' a counterbalanced lever a^2 , operated by a handle a^3 . The lever a^2 is slotted to receive the upper end of a link (or pair of links) b , whose lower end is pivoted to a rod b' , moving through guides b^2 , carried by the frame. The lower end of the rod b' carries a plunger consisting of a disk c and radial blades c' , pivoted to it, whose upper ends are linked by links c^2 to a sleeve c^3 , slidable on the rod b' , as hereinafter described. Only two of the links c^2 are shown in Figs. 1 and 2 for the sake of clearness.

d is the upper plate, hinged at its rear to the lower plate e , as seen in Fig. 4, so that it can be lifted by the attendant to admit of the insertion between the plates of a sheet of paper, whose position is indicated by the circle d' . In order that the plate d may not hold the paper too tightly, it is provided on its un-

der surface with a number of radial ribs d^2 . All around the hole in the plate e are a number of projections e' , between which are recesses e^2 , corresponding to the blades c' .

When the attendant after inserting a sheet of paper pulls the handle a^3 down, the plunger forces the paper down onto a table f , carried on a fixed standard f' , and into the top of the cylindrical folder g , which can be raised and rotated as follows: Pivoted at h to the frame a is a lever or preferably a pair of levers h' , carrying a stem h^2 , passing through a block h^3 , pivoted to arms h^4 on a rock-shaft h^5 , rocked by the bent handle h^6 . The lever or levers h' , carried by arms i' , rollers i'' , acting on the under side of a flange g' on the folder g to raise the folder, which is compelled to descend with the lever or levers h' by hooks i^2 , acting on the top of the flange g' .

The folder g has upon it a pin g^2 , working in a groove g^3 in a standard g^4 , which groove is of such a shape that after the folder has risen for part of its travel it is forced to rotate to fold down the plaits of the paper which have been caught in slots g^5 , provided for the purpose in the upper part of the cylinder.

In order that the blades c' may not be caught in the slots g^5 when the folder turns, they are withdrawn just before this movement takes place by a bar k , carried by a lever or pair of levers k' , rocked by a link or links k^2 from an arm or arms k^3 on the shaft h^5 . This bar k strikes a lever l , pivoted at l' to a bracket l^2 on the rod b' and slotted to embrace a pin c^4 on the sleeve c^3 , which is thus raised relatively to the rod b' , and in its rise it closes up the blades c' .

The operation of the machine is as follows: The attendant lifts the plate d , lays a sheet of paper on the plate e , and closes the plate d down onto it. Then with the right hand she pulls down handle a^3 . The plunger descends and pushes down the paper onto table f , the blades c' pushing it into the recesses e^2 . The attendant then with the left hand lifts the handle h^6 , which raises the folder. The bar k strikes the lever l to withdraw the blades, and the folder rotates, folding down the plaits of the paper. She then releases handle a^3 , which rises owing to the counterbalance-weight, and as the rod b' rises the blades c' open out again ready for the next operation by reason of le-

ver 7 coming against a fixed stop 7³. She then presses down handle h⁶ and removes the finished article.

What I claim is—

5 1. In a machine for folding or plaiting paper, the combination of a plate with a hole in it and having recesses around the edge of the hole, a collapsible plunger adapted to pass through the hole and to press the paper
10 into the recesses, means for reciprocating the plunger, a cylindrical folder below the plate into the interior of which the plunger carries the plaited paper, means for raising the folder up to the plate, means for then collapsing the
15 plunger and means for rotating the folder around the plunger while the latter is collapsed.

2. In a machine for folding or plaiting paper, the combination of a plate with a hole
20 in it and having recesses around the edge of the hole, a collapsible plunger adapted to pass through the hole and to press the paper into the recesses, means for reciprocating the plunger, a cylindrical folder below the plate
25 into the interior of which the plunger carries the plaited paper and which has open-ended slots at its upper end which receive the plaits, means for raising the folder up to the plate after the plunger has descended to its
30 full extent, means for then collapsing the plunger and means for rotating the folder around the plunger when the latter is collapsed.

3. In a machine for folding or plaiting paper,
35 per, the combination of a plate with a hole in it and having recesses around the edge of the hole, a collapsible plunger adapted to pass through the hole and to press the paper into the recesses, means for reciprocating the

plunger, a table below the plate onto which
40 the plunger forces the paper, a cylindrical folder surrounding the table, means for raising the folder up to the plate after the plunger has descended to its full extent, and means
45 for rotating the folder around the table and plunger while the latter is collapsed.

4. In a machine for folding or plaiting paper, the combination of a forming-plate, a reciprocating plunger adapted to pass through
50 said forming-plate, collapsible blades carried by said plunger, a folder below the forming-plate into which the folded paper is forced by the plunger, means for both reciprocating and rotating the folder, and devices for collapsing the blades before the folder rotates.
55

5. The combination of a plate with a hole in it and recesses around the edge of the hole a plunger adapted to pass through the hole,
60 means for reciprocating the plunger, a slotted cylindrical folder below the plate means for reciprocating the folder and means for collapsing the blades on the rise of the folder.

6. In a machine for folding paper, the combination of a pivoted lever acting upon the folder, a rod, a plunger on the rod a sleeve
65 loose on the rod, a series of blades pivoted to the plunger and the sleeve, a cylindrical folder, having slots in it corresponding to the blades mechanism for raising the folder means actuated by this mechanism for with-
70 drawing the blades from the slots and means for rotating the folder on its axis.

JAMES DOWLING.

Witnesses:

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PERCY E. MATTOCKS,
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S. M. ROWSELL.