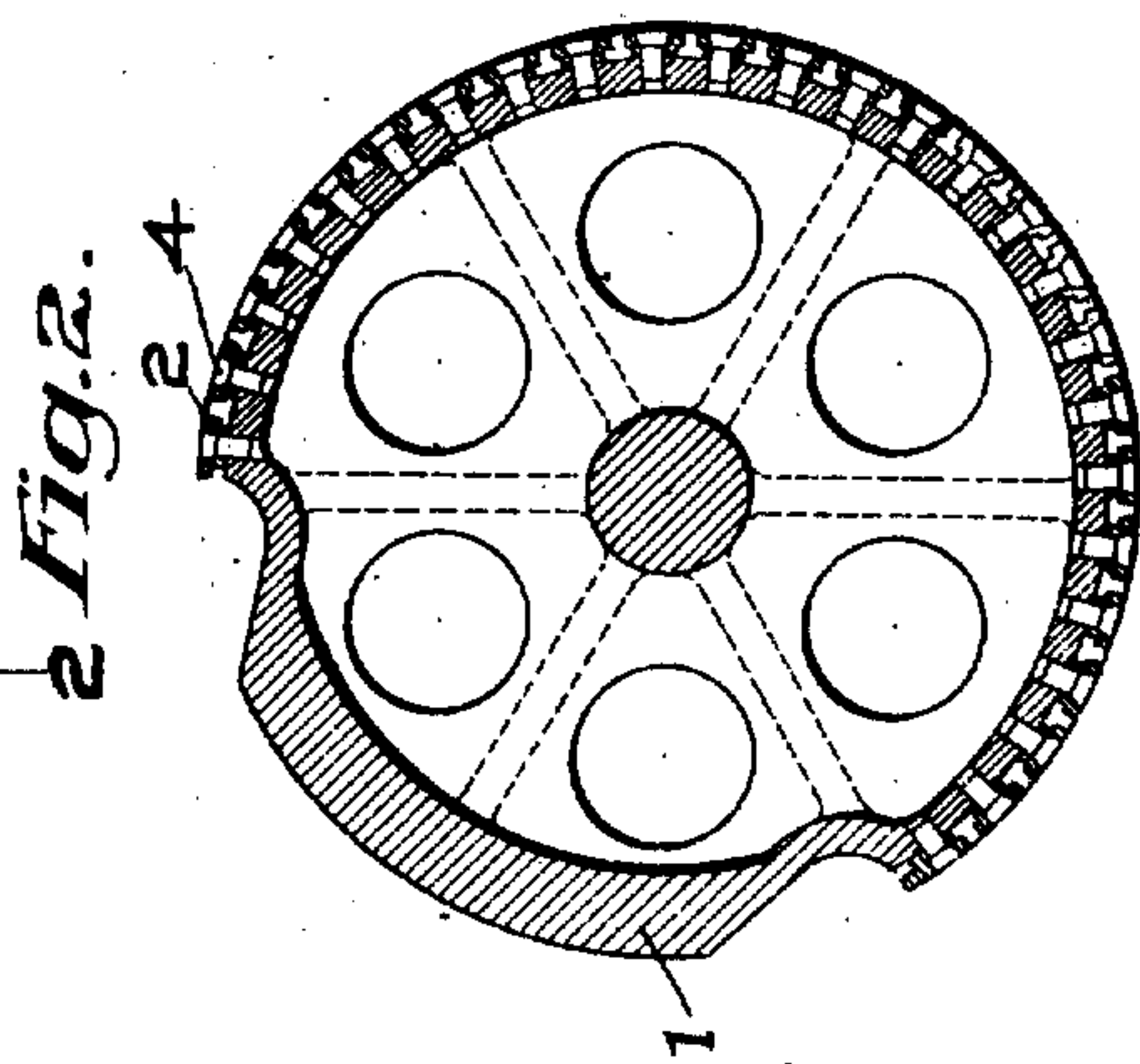
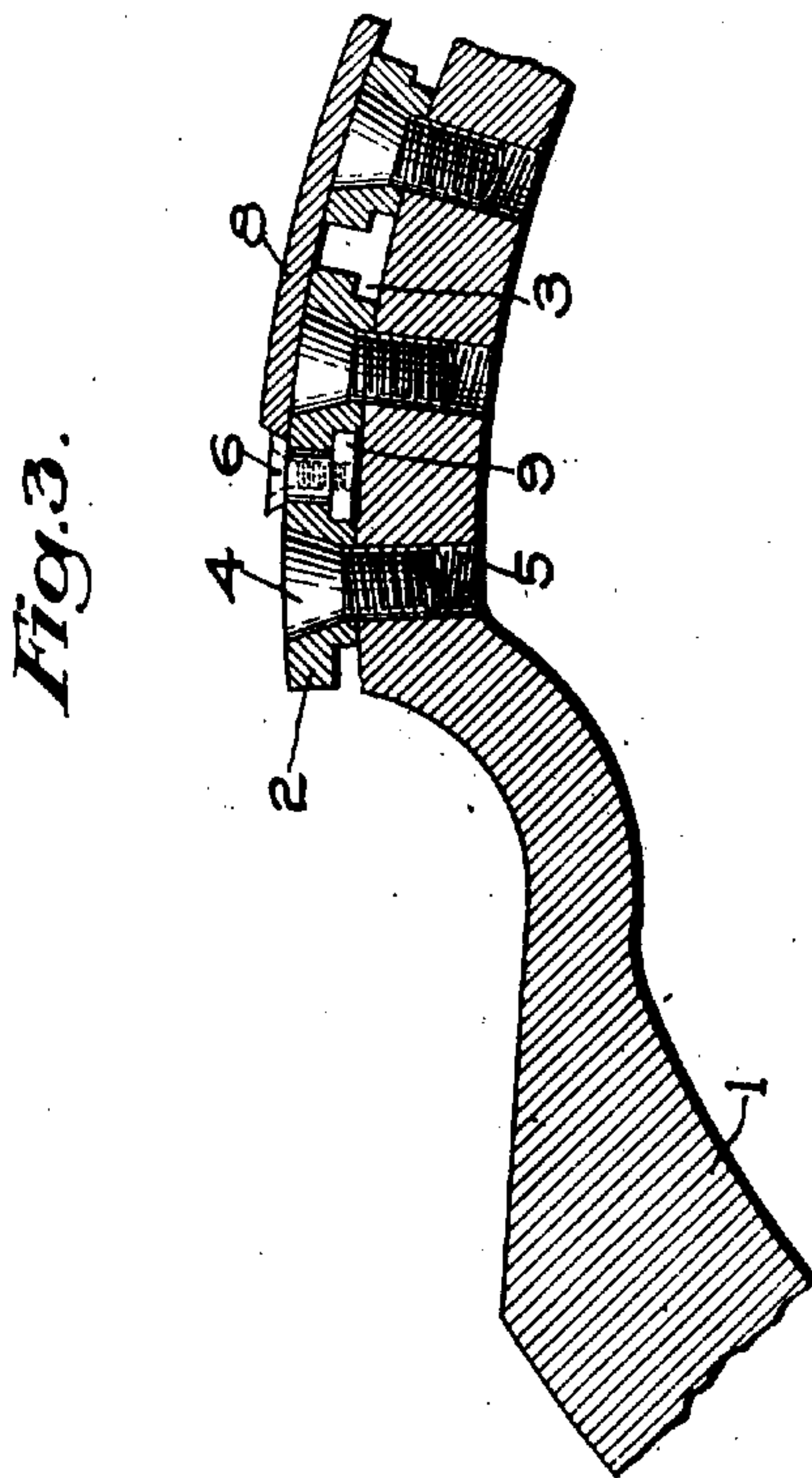
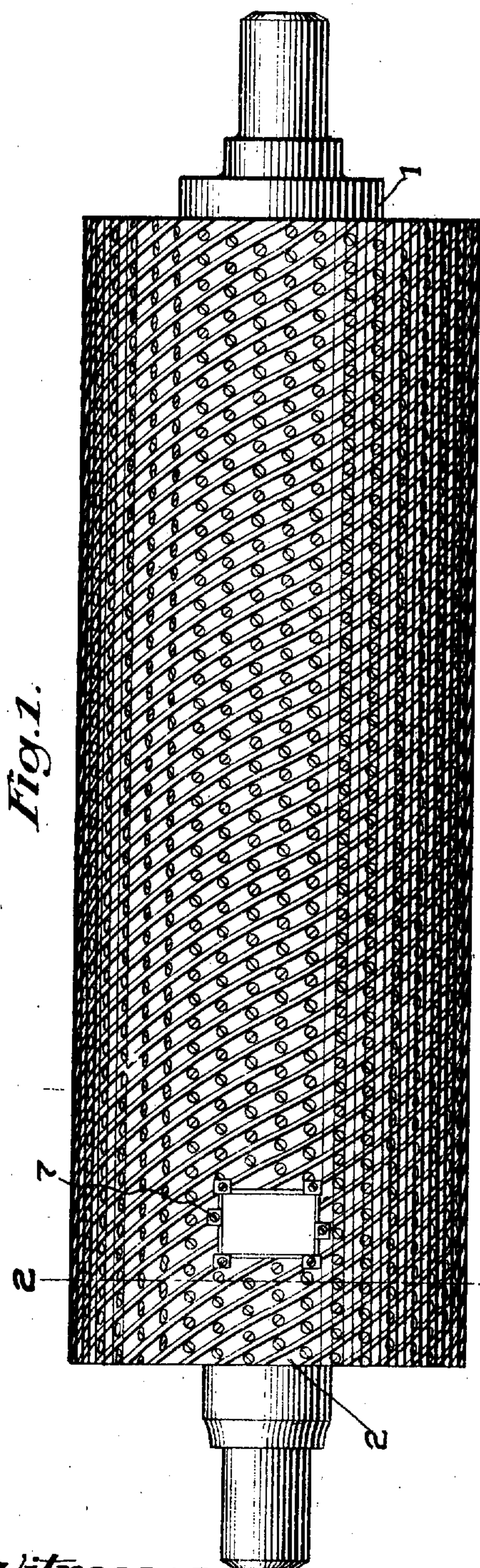


W. K. HODGMAN.
 PRINTING OR PLATE CYLINDER FOR ROTARY PRINTING PRESSES.
 APPLICATION FILED APR. 18, 1907.

901,295.

Patented Oct. 13, 1908.



Witnesses
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UNITED STATES PATENT OFFICE.

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PRINTING OR PLATE CYLINDER FOR ROTARY PRINTING-PRESSES.

No. 901,295.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed April 18, 1907. Serial No. 368,810.

To all whom it may concern:

Be it known that I, WILLIS K. HODGMAN, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Printing or Plate Cylinders for Rotary Printing-Presses, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to printing or plate cylinders, and particularly to provisions for securing stereotype, electrotype or other printing plates thereto.

In order that the principles of my invention may be readily understood, I have disclosed a single type or embodiment thereof in the accompanying drawings.

In the drawings: Figure 1 is a side elevation of a printing or plate cylinder having my invention applied thereto; Fig. 2 is a vertical transverse section as on line 2—2, Fig. 1; and Fig. 3 is an enlarged, sectional, detail view, clearly showing the manner of application of the stereotype or other printing plate to the cylinder.

Stereotype, electrotype and other printing plates have been secured to printing or plate cylinders in different ways, but mainly by providing a large number of holes in the cylinder to receive screws or bolts having means to engage the edges of the plates, or by providing parallel grooves in the surface of the cylinder, usually parallel or at right angles to the axis thereof, such grooves usually being undercut to receive therein nuts and screws adapted to engage directly or otherwise the edges of the plate. The provision of such grooves permits the positioning of the securing screws or means at certain points, but is far less effective than if such grooves were diagonally disposed upon the surface of the cylinder, for such diagonally disposed grooves would permit the positioning of the securing screws or means at any desired points dependent upon the size and position of the plate engaged thereby. Great expense is involved, however, in forming diagonal grooves in the surface of a cylinder, so that such method of procedure is substantially prohibited. By my invention, it is made possible to provide the superior and far more effective diagonal grooves without increased expense and in reality at less expense than if grooves were

formed in the surface of the cylinder parallel or at right angles with the axis thereof. That is to say, by my invention, a grooved printing or plate cylinder having parallel grooves running in any direction, that is, parallel with the axis thereof, normal to the axis or inclined thereto can be made at less cost than would be the case were the grooves formed in the surface of the cylinder itself in any direction.

It has been necessary to make cylinders, that are to have grooves cut therein, of unusually strong material, such as steel castings, to provide a proper strength of parts after the weakening necessarily occasioned by the grooves, and it has been necessary that such castings be perfect, as any defect in the surface grooved, condemned the whole cylinder.

By my invention I am enabled to make printing or plate cylinders of cast iron if desired, and it is immaterial, as regards the securing of the plates to the cylinder, whether or not the surface of the cylinder be free from defects incident to casting. By employing securing means, as will be more fully described, of better material than cast iron, or even than steel casting if desired, I am enabled to produce a better article at less cost than any of which I am aware.

Referring more specifically to the drawings and to the single type or embodiment of the invention therein represented, a printing or plate cylinder of any usual construction and preferably of cast iron, which in the practice of my invention, I am enabled to employ, is represented at 1. Heretofore it has been common to groove the surface thereof, to receive securing means for the printing or other plates.

In accordance with my invention, I provide metallic strips 2 of any suitable width and length, and preferably formed as upon the under surface thereof, to receive securing means for the printing plates. While I may employ any suitable material, and form or shape the strips in any suitable way into the desired shape, as by casting or otherwise, I prefer to use a material which may readily be bent into the desired shape. It is apparent that such strips may be straight in form so as to be secured to the cylinder parallel to the axis thereof, and preferably from end to end of the cylinder, or that they may be bent to encircle more or less of the circumference of

the cylinder in a plane normal to the axis of the cylinder, or at any desired angle thereto, that is, they may be spirally or helically disposed, the latter form being preferable and herein indicated. Herein I have represented the strips 2 as so bent as to be applied to the cylinder and to be secured thereon, at an angle of about 45° to the axis of the cylinder. Dependent upon the type of cylinder employed, the whole or only a portion of the cylinder surface may have strips applied thereto. In the form of cylinder shown in Figs. 2 and 3, a portion of the cylinder is left free of such strips, and herein and if desired, the strips may be of varying length certain of them extending from end to end of the cylinder and encompassing a large proportion of the circumference thereof, others being of gradually decreasing length. It is apparent that the length of the strips, the form or curvature thereof, as well as the material employed, may be varied as desired.

While I may employ any suitable material, preferably and if the strips are to encompass more or less of the surface of the cylinder, either normal to the axis thereof or at an inclination thereto, preferably I employ a material adapted to be readily bent into form, as for example, the so called yellow metal, composed of copper, tin etc., which is of a very ductile nature, or soft steel, it being understood that any suitable material may be employed.

If the strips are to be disposed as indicated in Fig. 1, they are bent into proper form by any suitable device or mechanism forming no part of this invention, the strips being preferably peened or hammered during the bending process, as I find that in certain cases this step aids in securing them in shape. While the strips may be shaped or constructed in any suitable manner, to receive and hold the plate securing means, such as bolts or screws, preferably I dovetail the strips upon opposite sides thereof as indicated at 3 in Fig. 3, though they may be beveled, undercut or otherwise fashioned to receive and hold securing means. Preferably the strips are suitably shaped to this end, before bending. In the present type of the invention, the strips, so bent, are attached in any suitable way to the surface of the cylinder as by screws 4 engaging screw threaded holes 5 in the cylinder, said strips being secured to the cylinder at their end portions and also intermediate such portions. Any suitable means may however be employed to fasten the strips to the cylinder. If the strip is to be bent, preferably the holes for the screws 4 are not formed therein until after the strip has been bent, as such bending tends to somewhat deform the holes. The strips are attached to the cylinder at any desired distance apart, thus providing between them holding grooves which are preferably of a larger di-

ameter at or near the bottom than at the top, to receive any suitable plate securing means, herein shown as screws 6 passing through clamps 7 whose edges engage the edges of the printing or other plate 8, the threaded portions of the screws receiving nuts or the like 8 adapted to the widened portion of the groove. It is clearly to be understood, however, that any suitable plate securing means may be employed, forming a part of or separate from the said plates, my invention being in no way restricted to any particular type or form thereof.

Having thus described one type or embodiment of my invention, I desire it to be understood that although I have employed specific terms they are used in a generic or descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. A printing or plate cylinder for rotary printing presses having a series of parallel, arcuate, metallic strips secured thereto at their end portions and intermediate such portions, said strips being disposed non-parallel to the axis of the cylinder and conforming in curvature to that portion of the cylindrical surface to which they are applied and spaced apart to provide holding grooves adapted to receive therein securing means for printing or other plates to be fastened to the surface of the said strips.
2. A printing or plate cylinder for rotary printing presses having a series of parallel, metallic strips fixedly secured to the surface of said cylinder at their end portions and also intermediate such portions, said strips conforming in shape to that portion of the cylinder to which they are applied and spaced apart to provide holding grooves adapted to receive therein securing means for printing or other plates to be fastened to the surface of said strips.
3. A printing or plate cylinder for rotary printing presses having a series of parallel, metallic, strips fixedly positioned upon said cylinder, said strips conforming in curvature to and contacting throughout their length with that portion of the curved surface of the cylinder to which they are applied, said strips being secured to such surface at their ends and at intermediate points in their length, and spaced apart to provide holding grooves, the edges of said strips being shaped to receive and retain from outward movement securing means for printing or other plates to be fastened to the surface of the said strips.
4. A printing or plate cylinder for rotary printing presses having a series of parallel, metallic strips fixedly secured thereto, said strips being spaced slightly apart to provide holding grooves, each strip conforming in curvature to and contacting at its ends and at one or more intermediate points with the

curved surface of the cylinder and provided with means to secure it to the cylinder at its ends and at such intermediate point or points, and of reduced dimension in cross section at or toward its lower face, whereby said
5 grooves are enlarged toward their bases and are adapted to receive for longitudinal movement therein but to retain from outward movement securing means for printing
10 or other plates to be fastened to the surface of the said strips.

5. A printing or plate cylinder for rotary printing presses having elongated, metallic, helically shaped strips secured thereto and
15 spaced apart to provide grooves disposed non-parallel to the axis of the cylinder, said grooves being adapted to receive therein securing means for printing or other plates to be secured to the surface of the strips.

20 6. A printing or plate cylinder for rotating printing presses having elongated, ductile, metallic, helically shaped strips secured to the surface thereof and spaced apart to provide grooves disposed non-parallel to the
25 axis of the cylinder, said grooves being adapted to receive therein securing means for printing or other plates to be secured to the surface of the strips.

7. A printing or plate cylinder for rotary printing presses having elongated, helically
30 disposed, metallic strips of different material from that of the cylinder, secured thereto and spaced apart to provide grooves disposed non-parallel to the axis of the cylinder, said grooves being adapted to receive therein se-
35 curing means for printing or other plates to be secured to the surface of the strips.

8. A printing or plate cylinder for rotary printing presses having a series of helically
40 disposed, metallic strips secured to said cylinder, said strips being of reduced diameter in cross section at or toward the surface of the strip, that is applied to the cylinder, said strips being positioned slightly apart to provide a holding groove adapted to receive
45 therein for longitudinal movement but to retain from outward movement securing means for printing or other plates to be fastened to the surface of the said strips.

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

WILLIS K. HODGMAN.

Witnesses:

BICKNELL HALL,
FREDERICK M. ATWOOD.