

(No Model.)

F. STRATTNER.
PRESS.

No. 594,297.

Patented Nov. 23, 1897.

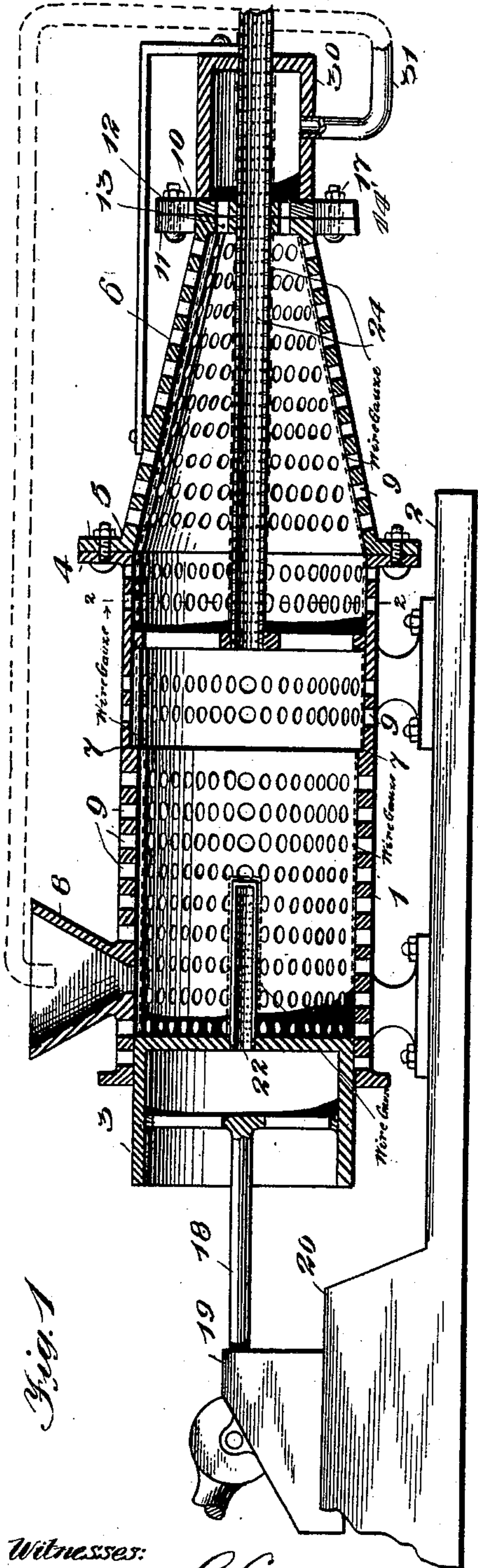


Fig. 1

Fig. 1.

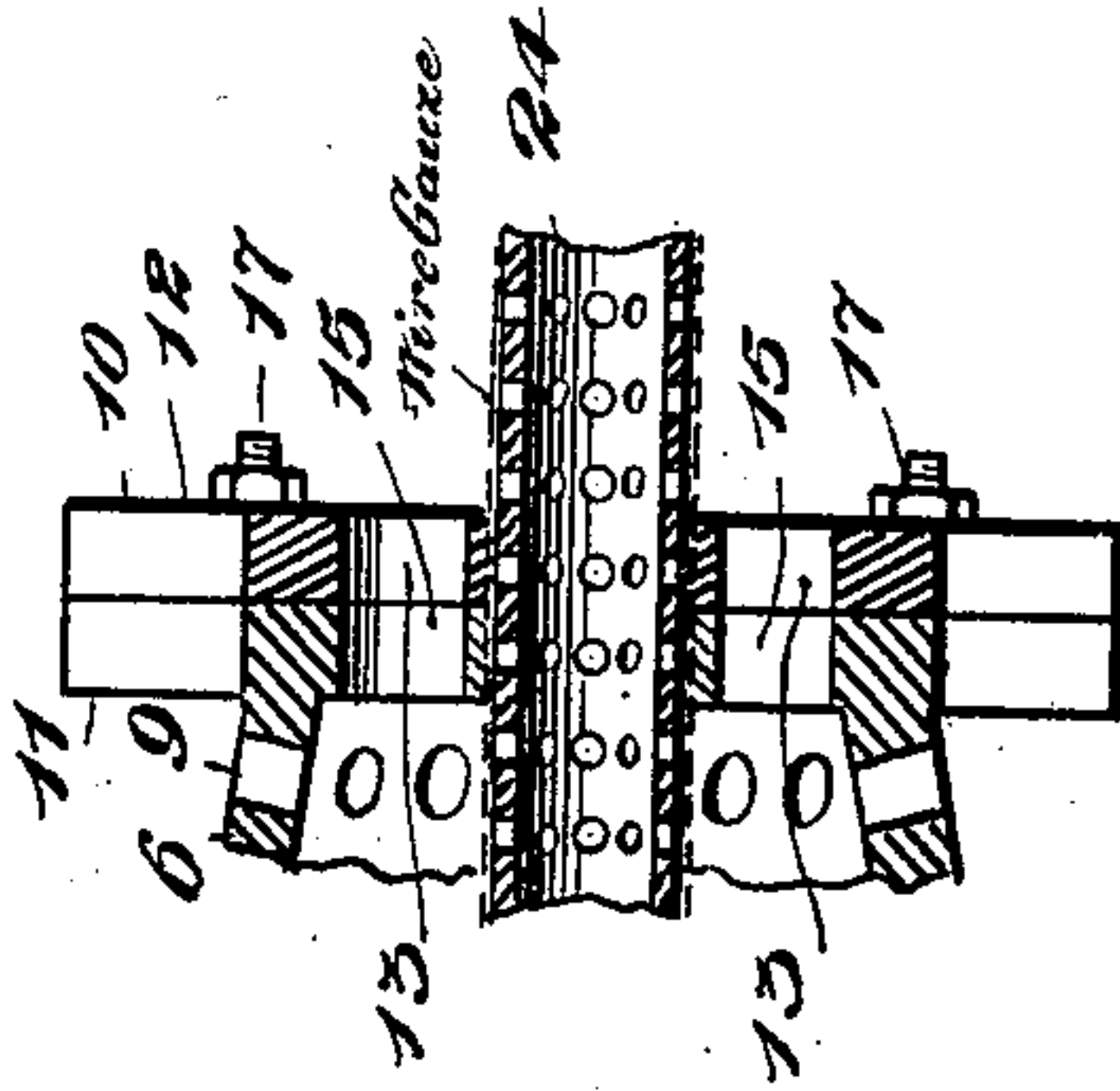


Fig. 2.

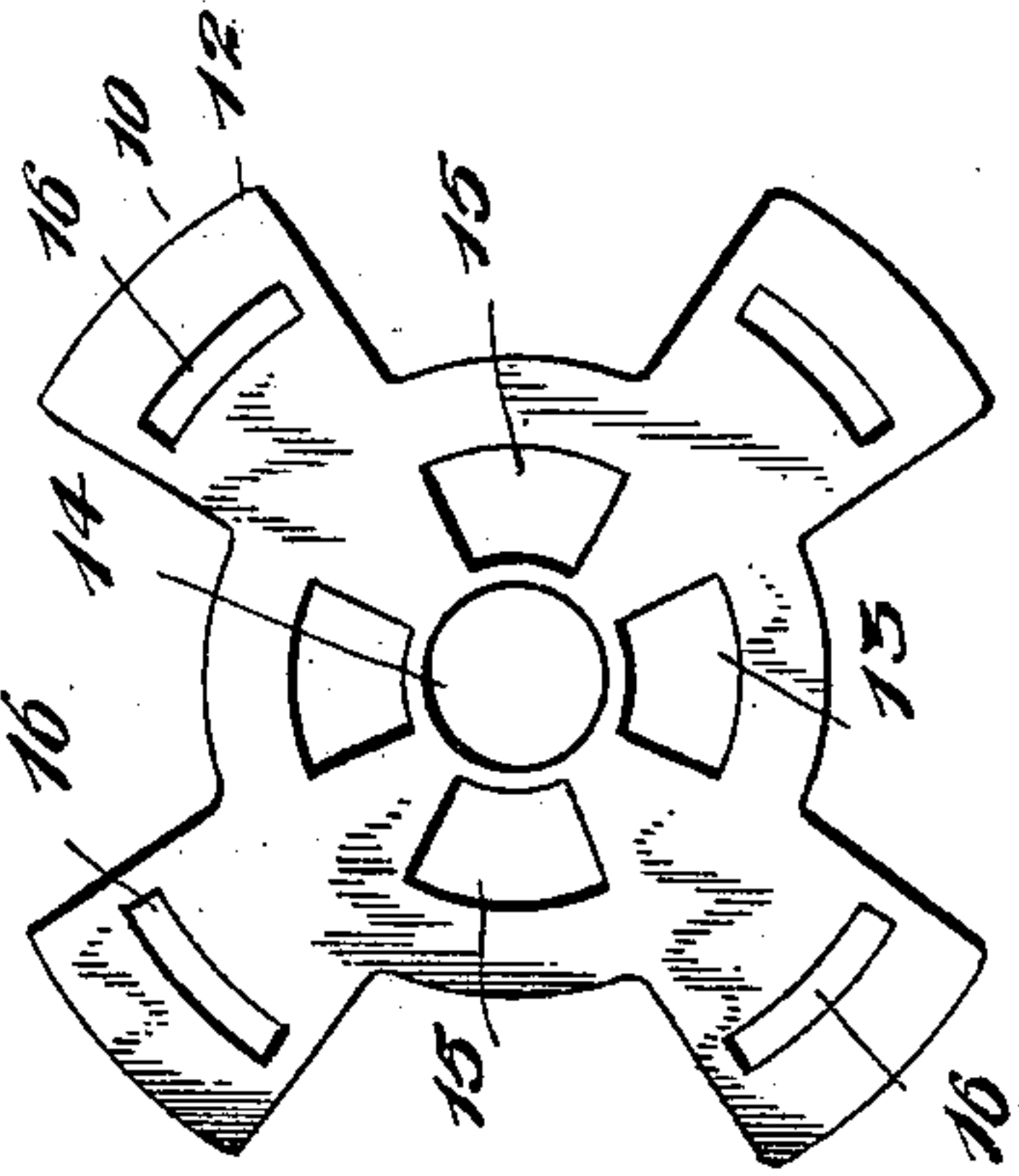
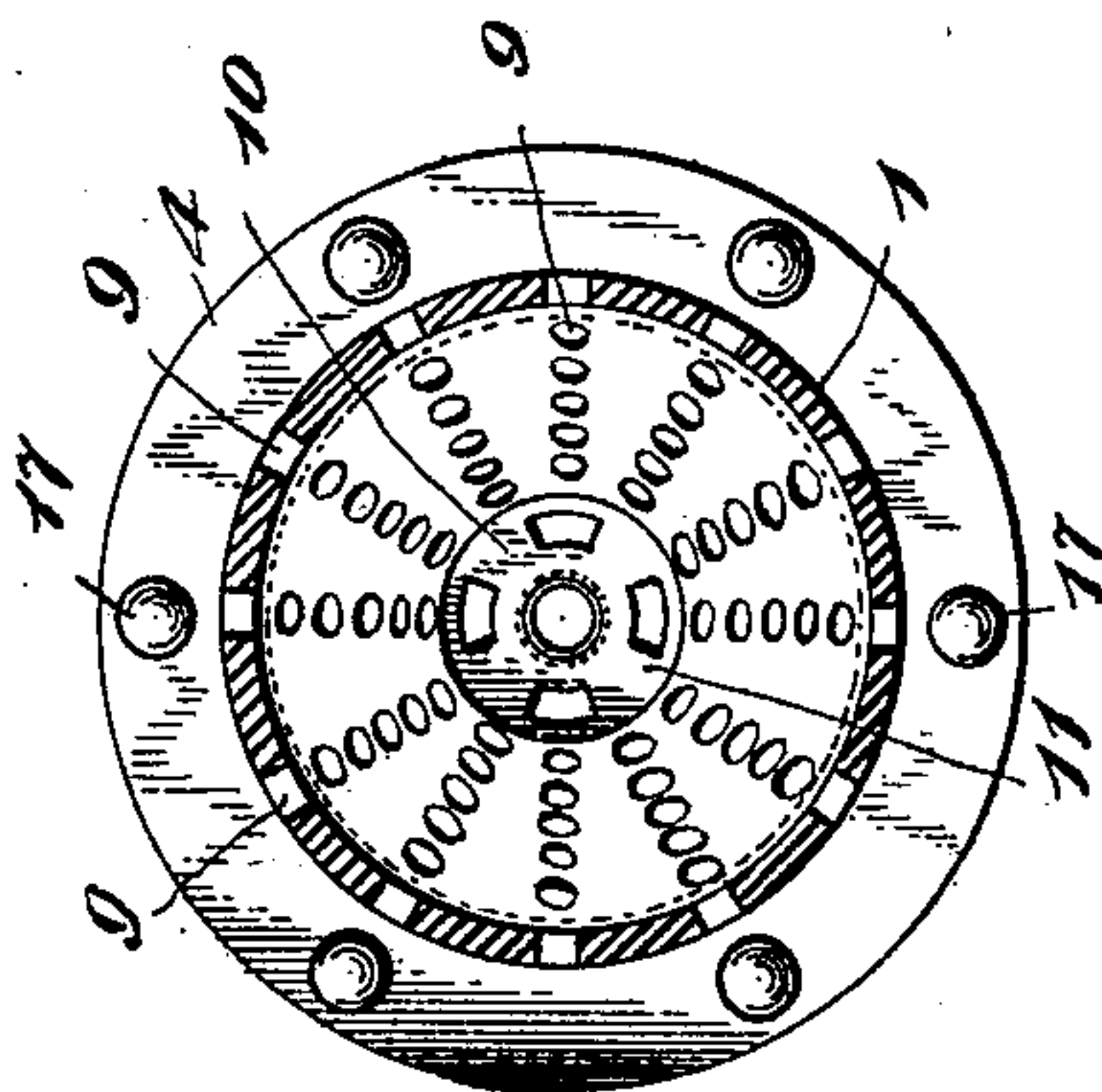


Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK STRATTNER, OF SALISBURY, MARYLAND.

PRESS.

SPECIFICATION forming part of Letters Patent No. 594,297, dated November 23, 1897.

Application filed February 5, 1897. Serial No. 622,171. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK STRATTNER, a citizen of the United States, residing at Salisbury, in the county of Wicomico and State of Maryland, have invented certain new and useful Improvements in Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in presses designed for operation by power for large presses and for operation by hand for small presses.

The present invention is intended particularly for service in expressing the oil, water, and other liquids from cooked fish and condensing the pumice into a compact dry mass when expelled from the machine.

It has been the common practice in preserving certain kinds of fish and preparing it for the market to cook it and afterward press it by hand, but the product is unsatisfactory and requires a large amount of labor. I aim to overcome these objections by the provision of a simple automatic press in which the substance is treated to expel the oil, water, and liquid, and deliver the pumice in a dry condition.

A further object of my invention is to so construct the press that the expressed liquid matters may escape freely and quickly, thus insuring thorough drainage of liquid matters from the press.

A further object of the invention is to provide means whereby the exit of the pumice may be regulated and the amount of pressure exerted by the plunger on the pumice may be varied according to the condition of the substance to be treated and the pressure it is desired to exert thereon.

To the accomplishment of these ends my invention consists of the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment of the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a vertical sectional elevation of

a press constructed in accordance with my invention. Fig. 2 is a vertical cross-sectional view on the plane indicated by the dotted line 2 2 of Fig. 1. Fig. 3 is an end view looking at the discharge end of the machine, showing the form of the regulator for the exit of the pressed dry pumice after treatment by the press. Fig. 4 is an enlarged detail sectional view through the reducing-cone and discharge-regulator of the press.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates the cylinder, mounted on a bed-plate 2 in any suitable manner. One end of this cylinder 1 is open to admit the piston or plunger 3, but the other end of the cylinder is flanged externally at 4 for the application of the flanged large end 5 of the reducing-cone 6, the abutting flanged ends of said cylinder and cone being united rigidly together by bolts which pass through said abutting flanges. At an intermediate point of its length this cylinder 1 is enlarged in diameter to provide an annular shoulder 7, which faces the reducing-cone 6 and which serves as a means for the lodgment of the pumice or substance in the cylinder on the back stroke or the out stroke of the plunger in a direction away from the reducing-cone, whereby the pumice is prevented in a large measure from following the plunger as it recedes from the discharge end of the cylinder. The upper side of the hopper, near its open end where the plunger plays therein, is provided with a hopper 8, through which the substance is fed into the cylinder in advance of the plunger or piston.

The reducing-cone is arranged in axial alignment with the cylinder, and both the cone and the cylinder are perforated with a multiplicity of holes or slots (indicated at 9) for the drainage of the liquid contents of the cylinder, said perforations or slots extending through the length and entirely around both the cylinder and cone, as shown by Fig. 1 of the drawings.

At the smaller delivery end of the reducing-cone 6 I provide the regulator 10 for the purpose of controlling the quantity of pumice that may be expelled from the machine at each forward stroke of the plunger, and also

for regulating the pressure which may be brought upon the pumice by the plunger when confined in and compacted by the reducing-cone. This regulator consists of a fixed member 11 and a movable member 12, coupled together by means which permits of the adjustment of a movable member in a plane transverse to the line of the plunger stroke. The fixed member is embodied as a part of the cone 6 by forming thereon or attaching thereto a disk-like part the diameter of which is greater than the small end of the cone, which member 11 has a series of transverse openings 13 and a series of bolt-holes 14'. The movable member 12 is of disk form, with a sleeve or tube 14, and the parts are assembled to enable the member 12 to be applied laterally against the fixed member 11 and the sleeve or tube 14 to lie in axial alinement with the cone and cylinder. This movable member 12 is provided with openings or slots 15, adapted to coincide with the openings 13 in the fixed member 11, and said movable member is joined to the fixed member by slot and bolt connections to permit the members to have the desired adjustment to vary the area of the passages or openings in the regulator, through which openings the pumice is to be expelled after it shall have been treated and its liquid contents expelled in the machine. I prefer to make arc-shaped slots 16 in the movable member and to provide adjustable coupling-bolts 17, which pass through the holes 14' and slots 15 in the fixed and movable regulator members, to couple the parts together, but any equivalent fastening means may be employed and still be within the scope of my invention.

The press as thus far described is capable of use as a hand-press or as a power-press, mechanism being provided for use in connection with the plunger according to the power. In case the machine is to be operated by hand-power a lever and suitable connections are provided for use in connection with the rod 18 of the plunger or piston 3; but for a power-machine the piston-rod extends back to and is pivoted on a reciprocating cross-head 19, which is slidably fitted to the guides 20. Power is applied to the cross-head 19 through the medium of a crank-shaft or a cam or through suitable gearing, but I have not deemed it necessary to particularly describe or illustrate such power mechanism, because it forms no part of the present invention and will readily suggest itself to a skilled mechanic.

In the embodiment of my invention in a power-press in which the substance is to be subjected to heavy pressure for the purpose of thoroughly expelling the liquid from the substance and ejecting the same in a dry condition the machine is equipped with central drainage appliances for the purpose of ejecting the liquid from the central part of the mass in the cylinder and the reducing-cone. These axial drainage appliances are shown in the drawings as embodied in the form of two

perforated tubes 22 24, both arranged horizontally and lying substantially in the axial line of the cylinder and the reducing-cone. One of said perforated drainage-tubes, the tube 22, is movable by attaching one end centrally to the other hollow piston or plunger 3 in a manner to cause the tube to open through the piston, whereby the tube 22 is adapted to play back and forth with the piston in the cylinder and the liquid matter in the central part of the mass or substance is free to enter the perforations in said drainage-tube 22 and to pass through the same into the hollow piston 3, from whence the liquid may escape through the open rear end of the piston or plunger, as is evident. The other drainage-tube, 24, lies within the cone 6 and partly in the cylinder 1, one end of said tube being fastened to and held in place by a spider 25, which is fixed in the cylinder in any suitable way. Said fixed drainage-tube 24 passes through the small end of the cone 6 and through alined openings provided in the fixed and movable members 11 12 of the discharge-regulator 10, so that the liquid matter which may enter the fixed drainage-tube is conducted from the press through the tube 24.

The operation may be described, briefly, as follows: The cooked substance or pumice is fed to the hopper and the piston is made to reciprocate in the cylinder to force the pumice into the reducing-cone, where it is compacted and pressed by the accumulation of the same under repeated strokes of the plunger and by the pressure of the plunger against the mass. The oil, water, and other liquid matter in the mass is expressed by the pressure of the reducing-cone and the plunger, and such liquid matters are free to escape through the perforations in the cylinder, the cone, and the central drainage-tubes, which provide for the free and expeditious exit of all liquid matters. The compressed pumice from which the liquid matter has been expressed is ejected in a dry condition from the press through the openings 13 and 14 in the members of the regulator 10.

It is evident that when the two members 11 12 of the regulator are adjusted to secure exact coincidence of the openings 13 14 with each other the full area of the discharge-exit is presented for the passage of the dry pressed pumice. To retard the exit of the pumice, so as to hold back the same in a measure from passing through the exit and consequently causing the pumice to "bank up" in the cone, so as to be subjected to increased pressure in the cone and by the plunger, the movable member 12 is adjusted or moved in a plane across the line of action of the plunger, in order to throw the openings 14 therein partially out of coincidence with the openings 13 in the regulator member 11, thus reducing the area of the discharge-openings in the regulator. Of course the bolts 17 should be loosened preliminary to adjusting the regulator member 12, and thereafter the bolts should

be tightened to hold the parts rigidly in place, the regulator member 12 being adjusted only when the discharge-exit is to be increased or decreased, according to the pressure to be exerted on the pumice in the press.

When the invention is embodied in a power-press, the substance is designed to be fed in quantities to the hopper and the piston is reciprocated continuously to render the machine a continuously-acting press.

I am aware that changes in the form and proportion of parts and in the details of construction herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

While I have described my press as especially designed for expressing liquid matters from fish and for pressing the same to a substantially dry condition prior to its expulsion from the press I would have it understood that my invention is not restricted to this specific use, but may be employed generally for pressing substances containing liquid or juicy matters.

In case the material is to be subjected to very heavy pressure it may be desirable to cover the drainage-tubes 22 24 with material, such as wire-gauze, through which the liquid matters may escape, and yet prevent the solid matters in the substance from passing into and through the drainage-tube.

It may also be necessary to line the walls of the perforated cylinder and the perforated cone, one or both, with fine wire-gauze or other analogous material when the press is employed for treating certain materials other than fish, which latter material being of a fibrous nature may not require to be confined within the cylinder and cone by the employment of gauze. In treating some substances, however, the use of the gauze lining or its equivalent is advantageous in preventing waste of the material through the cylinder and cone.

I desire it to be distinctly understood that I do not restrict myself to the employment of any particular power appliances in the press, as I may use screw, hydraulic, gear, or crank power mechanism for driving the plunger or piston.

I have also provided the press with means whereby the pressed substance or pumice may be delivered to a proper place of discharge. In the embodiment of this feature a receiving cap or receptacle 30 is applied to the discharge end of the press, and from said receptacle leads a pipe or conduit 31, through which the substance or pumice may be conveyed and discharged to a proper place. This cap or receptacle may be bolted or otherwise

attached over the regulator in position to receive the pressed substance as it is expelled from the condensing-cone. The pipe 31 may, as shown by dotted lines in Fig. 1, be arranged to conduct the substance back to the press-hopper for the purpose of re-pressing the substance in order to thoroughly treat the substance; but it is to be understood that the pipe 31 may be arranged in different ways to discharge the substance at any desired place without departing from my invention.

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

1. In a press, the combination with a cylinder, of an elongated, perforated, reducing-cone 6 rigid with said cylinder, a perforated drainage-tube extending longitudinally through said reducing-cone and protruding through the rear end thereof, a spider for supporting the inner end of said drainage-tube within the cylinder, and a piston fitted in the cylinder and provided with a drainage-tube 22 to permit of the drainage of liquid matter from the core of the mass of material in said cylinder, substantially as described.

2. In a press, the combination of a cylinder having a reducing-cone, a hollow plunger, a perforated drainage-tube attached to said plunger to be movable therewith and arranged in the line of the axis of the cylinder, another drainage-tube situated axially within the reducing-cone and extending through the discharge end thereof, and means for holding in place said last-mentioned drainage-tube, as and for the purposes described.

3. In a press, the combination with a cylinder, a reducing-cone, and a plunger, of a discharge-regulator fitted to the extremity of said reducing-cone and having two slotted members one of which is adjustable with relation to the other and both members provided with central openings, and a drainage-tube extending through said reducing-cone and the central openings in the members of said regulator, substantially as and for the purposes described.

4. In a press, the combination with a cylinder, and a reducing-cone rigid therewith, of the slotted regulator members 13, 15, one of which is rigidly connected to the extremity of the cone and the other member is adjustably clamped to the rigid member, a drainage-tube supported at its inner end in the cylinder and passing centrally through the regulator members, a receptacle 30 arranged to receive from the regulator, and a plunger having a drainage-tube, as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK STRATTNER.

Witnesses:

JEROME TUBBS,
SAML. A. GRAHAM.