

Feb. 16, 1926.

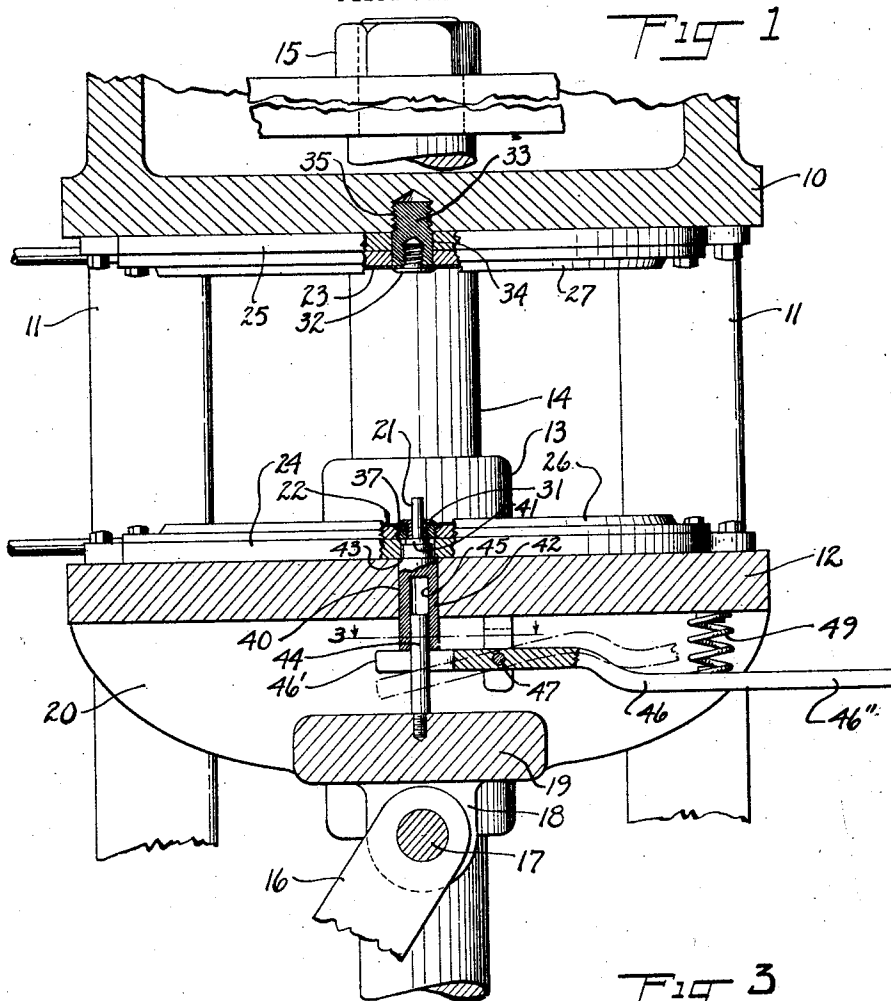
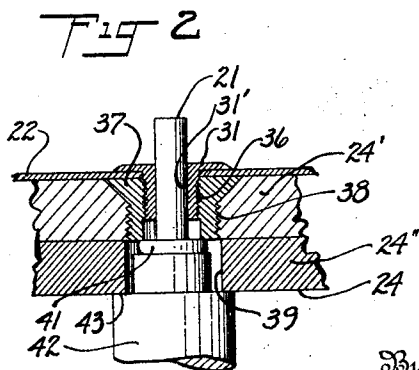
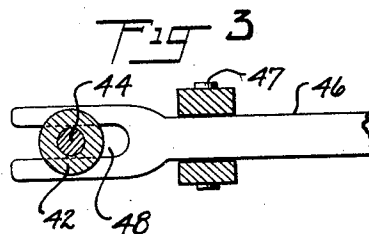
1,573,769

J. FLETCHER

PRESS

Filed June 22, 1921

2 Sheets-Sheet 1



Inventor
John Fletcher
By His Attorneys H. H. Dyke

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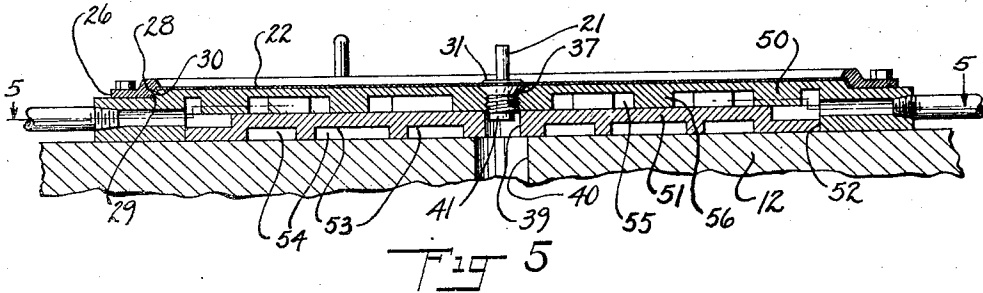
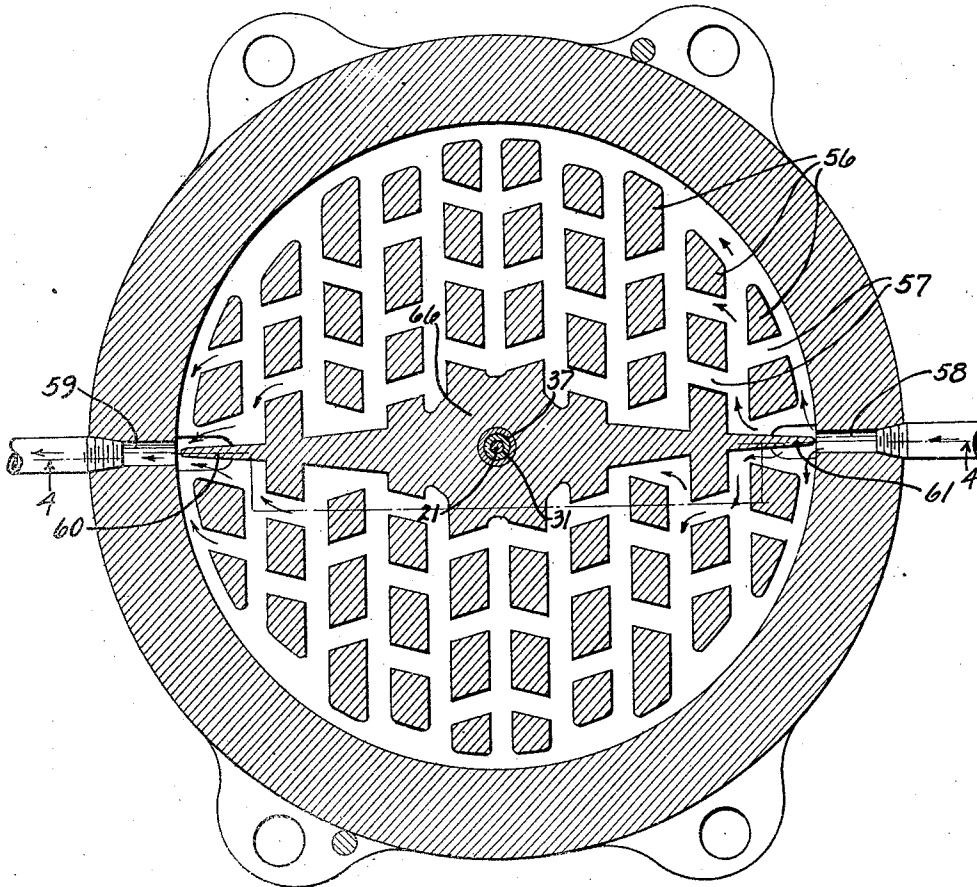
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2 Sheets-Sheet 2

Fig 4



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UNITED STATES PATENT OFFICE.

JOHN FLETCHER, OF NEW YORK, N. Y.

PRESS.

Application filed June 22, 1921. Serial No. 479,639.

To all whom it may concern:

Be it known that I, JOHN FLETCHER, a citizen of the United States, and residing and having a post-office address at 301 West 57th Street, in the borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Presses; of which the following is a specification.

My invention relates to presses, and while the invention is capable of broad application, an embodiment thereof is disclosed herein adapted for use in the manufacture of disc phonograph records.

Among the objects of my invention are the provision of an improved heating and cooling die adapted for rapid, uniform and efficient application of heating and cooling media, such as steam and cold water, close to the surface of a thin unbacked matrix, whereby the same may be readily heated up for use in pressing a record, and quickly cooled to permit the removal of the record.

Another object of the invention consists in making provision for ready access to and for mechanical manipulation of the retreating pin, provided in disc record presses, for example, for centering the record labels and forming the central opening in the record. Other objects of the invention will appear in connection with the following description.

In the drawings Fig. 1 is a vertical, sectional, fragmentary view of a press embodying one form of my invention. Fig. 2 is an enlarged detail sectional view of the retreating pin and the parts adjacent thereto. Fig. 3 is a horizontal section taken on the line 3—3, Fig. 1. Fig. 4 is a vertical sectional view of the press die taken substantially on the broken line 4—4, Fig. 5, and Fig. 5 is a horizontal sectional view of the die taken substantially on the broken line 5—5, Fig. 4.

Reference numeral 10 is applied to the fixed press member, here shown as a press head located at the top or upper end of a vertical press. Press head 10 is supported upon the corner columns 11. The movable press member 12 has the slides 13 rigidly fixed thereto and adapted to slide up and down on posts 14 mounted on the base (not shown) and secured at their upper end to the press head 10, as by means of nuts 15.

Any means may be resorted to for imparting movement to the reciprocable press mem-

ber 12. In the form shown mechanical means are indicated for this purpose comprising a toggle lever 16 pivoted at 17 on lugs 18 projecting downwardly from the crossbar 19 of the press member 12. The crossbar 19 is joined to the body of press member 12 by ribs 20 which are spaced apart, leaving an open space at the center where the centering pin 21 is located.

The thin unbacked matrices 22, 23 are secured in place upon the press dies 24, 25 by means of rings 26, 27, which may be bolted or otherwise secured to the dies. These rings have undercut beveled portions 28, as shown in Fig. 4, and are adapted to hold the thin matrices in place by clamping the beveled peripheral flanged portion 29 of the matrices over the similarly beveled portion 30 of the press die.

The matrices are held in place at their centers by flat headed screws 31, 32. For the stationary die 25, screw 32 is screwed into a socket piece 33, which in turn passes through an opening 34 in the die and is screw threaded into a socket 35 in the press member 10.

For the movable die 24, the flat headed screw 31, which has a central bore 31' for the passage of pin 21, is screwed into a threaded opening 36 in a screw 37, which in turn is screwed into the threaded opening 38 of the upper member 24' of the two part die 24. The remaining member 24'' of the die 24 has a hole 39 therein in axial alignment with the pin 21 and bore 31', and the press member 12 is provided with a hole 40 of somewhat greater diameter than hole 39 and arranged upon the same axis.

Pin 21 having an enlarged base 41 (see Fig. 4) rests on a slide 42 which works in the hole 40 in the press member 12 and is provided with a shoulder 43 which serves as a stop by coming into contact with the back of die 24. Slide 42 is guided on a guide pin 44 which is secured to the crossbar 19 and works in a socket hole 45 in the slide member 42.

A lever 46 is pivoted in the press member 12 at 47 and has a slot 48 formed therein which straddles the guide pin 44. The inner end 46' of lever 46 is pressed upwardly by spring 49 which acts directly upon the lever 46 and indirectly upon the slide member 42. The outer end 46'' of lever 46 projects outwardly beyond press member 12 where it can be readily grasped by the oper-

ator. Spring 49 keeps pin 21 normally projecting to the position shown in full lines in Fig. 1, but as the press is closed and pin 21 comes into contact with press head 10 and screw 32 therein, it retreats and the lever 46 is turned to the dotted line position of Fig. 1. When the press is opened the pin 21 should be projected by spring 49, but if by reason of the pin getting stuck or for any other cause the pin 21 does not project or does not project to the necessary extent, it can be pushed out by the operator by exerting downward pressure upon the arm 46'' of the lever 46.

The press die is made in two parts 50 and 51. Part 50 includes the face of the die, and has a recess 52 in its back in which part 51 is received and secured in place by a tight joint, made, for example, by electric welding. The part 51 is preferably cut away on its back, as shown at 53, so as to reduce the amount of metal to be heated and cooled, so far as is consistent with strength, and to provide non-conducting air spaces 54. The low, flat chamber 55 between the parts 50 and 51 is subdivided extensively as by part 50 being provided with integral irregularly formed baffle members 56, extending across the chamber 55 from top to bottom thereof, and providing irregular passages 57 between them, which passages extend in a more or less irregular fashion from the inlet 58 to the outlet 59. The relatively sharp edged baffles 60, 61 are preferably placed adjacent to the inlet and outlet pipes and if desired the central baffle 66 may join the baffles 60, 61 and may extend across the central part of the die chamber 55, serving to separate the circulating fluids into two approximately equal parts, as they pass through the irregular passages 57 provided for this purpose. This central baffle need not be continuous, but may be subdivided and formed with cross passages, if preferred.

It is desirable, however, to make the baffles somewhat more massive in the region situated directly between the inlet and outlet, as otherwise these parts of the die might heat and cool more readily than the outer parts, to which the flow of fluid is relatively somewhat retarded. It will be seen that substantially uniform quick heating and cooling of the thin matrix can be obtained in this way, enabling the rapid production of records of good quality.

It is to be understood that the apparatus shown is intended only to afford an understanding of the invention and not for its limitation, and that changes and modifications may be resorted to within the scope of my claims, without departing from the principle or spirit of the invention.

I claim:

1. In a press, a die, a pin adapted to project from or retreat into an opening in the die, a slide behind the pin, a guide for said slide, and a lever for actuating said slide, said lever being slotted to straddle said guide.

2. In a press for making phonograph records, a die having inlet and outlet openings at substantially opposite sides and having a substantially low flat fluid passage chamber therebetween provided with two sets of irregularly criss-crossed fluid passages serving to permit passage of fluid without restriction to a defined path or paths of travel, and massive baffles between the inlet and outlet openings and adapted to divide the fluid in its passage into substantially equal parts, whereby all the parts of the die may be substantially uniformly heated and cooled.

3. In a press, a press member, a die having a central hole therein and provided with means for distributing heating and cooling fluid substantially uniformly throughout the interior of the die, a stud on the press member adapted to extend through the hole in the die and to center the die on the press member, and means for securing a thin unbacked matrix to the die, including a screw adapted to be screwed into a threaded hole provided in the stud.

4. A press die for making disk phonograph records, comprising a flat die member provided with means for detachably securing a thin unbacked matrix thereto, and having an annular recess in its back and provided with a plurality of integral pins of substantially uniform size and shape extending across the recess, and a closure plate for the recess in the die abutting against the ends of the pins, said closure plate likewise having a plurality of studs on its back and adapted to rest on a press member with the last named studs in contact therewith.

In testimony that I claim the foregoing, I have signed my name hereto.

JOHN FLETCHER.