

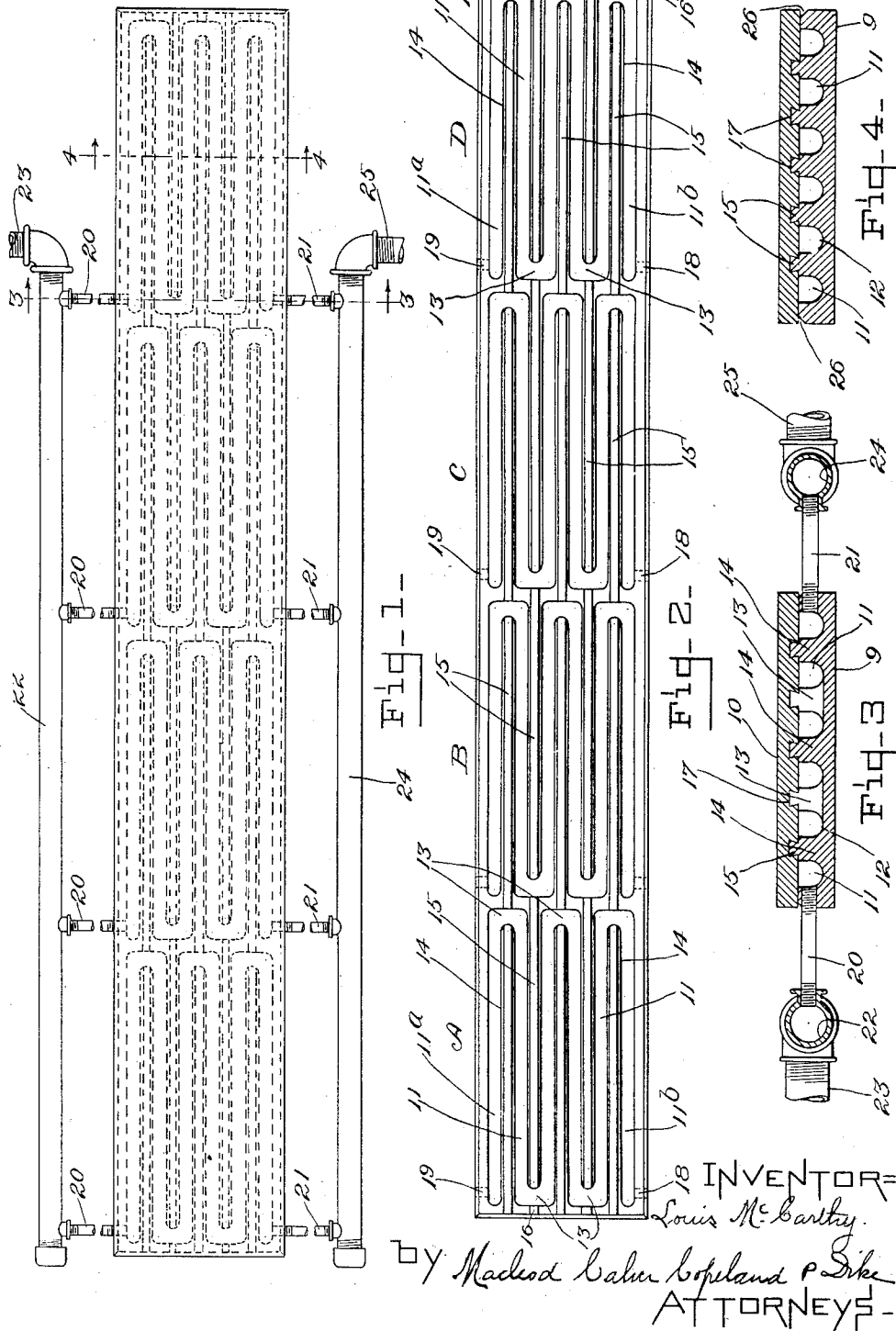
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L. McCARTHY

PRESS PLATEN

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PRESS PLATEN.

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This invention relates particularly to platens or analogous hollow metal plates adapted for use in hydraulic and similar presses, and wherein the platen or similar article is provided with interior passages for the circulation of a heating or cooling medium.

The present invention has for its principal object the provision of an improved multiple-unit platen formed from a pair of hollow plates, into which is introduced a circulating medium for heating or cooling the same, and wherein the working surfaces of the platen may be heated or cooled quickly and maintained from end to end at substantially an even and uniform temperature irrespective of the length or size of the platen.

Heretofore where the circulating medium was introduced into the platen at one point and returned therefrom at another point, it was found difficult to maintain a constant and even temperature since the temperature of the circulating fluid varied during its circulation.

Furthermore where, heretofore, platens were made of cast iron, cored out to form the fluid passages, or from sections riveted together face to face with the rivets extending all the way through both sections, such platens were short lived. The cast iron rendered the platen brittle and easily broken, permitted it to withstand only relatively low pressures, and the riveted plates when subjected to high internal pressure tended to separate due to the opening of the rivet joints and causing leakage. Also it was found in the case of platens formed from a pair of riveted sections that the rivets obstructed the flow of fluid through the interior passages and the rivet heads formed obstructions on the outer working faces of the platen. In addition to these disadvantages in prior constructions, the cast iron platens were relatively thick and heavy, were frequently uneven in construction, and on account of the relatively thick walls thereof required considerable time to heat or cool. The cast iron platens were also objectionable on account of their bulkiness and weight which rendered them inconvenient and difficult to handle.

A further object, therefore, of the present invention is to provide an improved platen wherein the foregoing disadvantages and objections are entirely eliminated. As a re-

sult of the present invention, the platen may be constructed of steel plates interlocked together interiorly thereof in an improved manner, and forming unobstructed outer working surfaces. The present improved construction renders the platen substantially indestructible, capable of withstanding high interior and exterior pressures, relatively light and easily handled. In addition the present platen may be quickly heated or cooled and at the same time maintaining during use a substantially even and uniform temperature.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views, and wherein:

Fig. 1 is a plan view illustrating an embodiment of my invention.

Fig. 2 is a plan view of the bottom plate of the platen.

Fig. 3 is a sectional view taken substantially on the line 3—3, Fig. 1 in the direction of the arrows.

Fig. 4 is a sectional view taken substantially on the line 4—4, Fig. 1 in the direction of the arrows.

Before explaining in detail the present improvement and mode of operation thereof, I desire to have it understood that the invention is not limited to the details of construction and arrangement of parts which are illustrated in the accompanying drawings, since the invention is capable of other embodiments, and that the phraseology which I employ is for the purpose of description and not of limitation.

The invention as herein illustrated in a present preferred form thereof is embodied in the type of platen illustrated in my prior application, Serial No. 735,201, filed August 30, 1924, and comprises a pair of sections or steel plates 9 and 10 superimposed one upon the other. Between the plates 9 and 10 are formed a series of cavities located end to end and generally indicated in Fig. 2 by the reference letters A, B, C and D. In the present construction each of these cavities is of substantially the same form and preferably identical and therefore a detailed description of one thereof will suffice for all. Each of the cavities between the lower or

supporting plate 9 and the top plate 10 comprises a continuous tortuous passage 11 formed by means of lengthwise extending grooves. These grooves may be formed in any suitable manner as by machining the plate 9. It will be noted that each of the cavities is in the form of a plurality of parallel longitudinal open passages alternately connected at the opposite ends thereof by short transverse passages 13.

Extending between the passages 11 and longitudinally of the platen are a plurality of partitions 14, and the top plate 10 is secured to the supporting plate 9 by means of interlocking connections carried by the partitions 14 and by the inner faces of the top plates 10. In the present instance these interlocking connections comprise lengthwise extending dovetails machined on the upper edges of the partitions 14 and adapted to fit into and mate with lengthwise extending dovetailed grooves 17 machined in the bottom face of the plate 10. It will be noted that the partitions 14 at each end of each section A, B, C, and D are interrupted by the transverse grooves or passages 13, and at the opposite ends of the platen a plurality of short partitions having dovetails 16 are provided between the passages or grooves 13 and the ends of the plate 9. At the same time the top plate 10 is provided with corresponding short dovetailed grooves mating with the parts 16.

Each of the cavities or passages denoted by the reference letters A, B, C and D is provided with an independent inlet and outlet. Thus a hole 18 is tapped into the side edge of the bottom plate 9 and communicates with the outer run 11^b of the passage 11, and in like manner a hole 19 is tapped into the plate 9 at the opposite side of the platen and communicates with the opposite outer run 11^a of the passage 11. A circulating fluid is supplied to each of the series of passages or cavities 11 by means of inlet pipes 20 screwed into the tapped holes 19 and connected to a header pipe 22 having a common inlet at 23. A separate outlet for each of the passages or cavities is provided by means of pipes 21 screwed into the tapped holes 18 and connected to a header 24 having a common outlet 25.

In the present instance the supporting plate 9 is chamfered along its upper edge at 26, and the joint between the top and bottom plates is closed around the side edges of the platen as by means of a strip welded into the chamfered groove 26.

It will be understood from the foregoing that the plates 9 and 10 may be readily assembled by fitting the dovetails 15 into the dovetailed grooves 17 of the upper plate, and sliding the plates together under pressure. In this manner the plates are firmly interlocked together and in use the joints

between the dovetail connections rust together so as to form sealed connections between the plates. It will also be seen that the platen may be constructed in any desired length, and by dividing the platen unit into a plurality of sections each section having a tortuous passage with an independent inlet and outlet, it is possible to heat or cool the platen in contiguous sections so that the temperature of the circulating medium will vary but slightly during its circulation thereby maintaining the temperature of the platen during use substantially constant and uniform. Furthermore the manner of interlocking and securing the steel plates together permits easy assembly and provides a structure of great strength and durability without any connecting rivets or other obstructions accessible or in any way interfering with the working faces of the platen.

It is to be understood that by describing in detail herein any particular form, structure, or arrangement, it is not intended to limit the invention beyond the terms of the several claims or the requirements of the prior art.

What I claim is:

1. A press platen or the like comprising a pair of plates superimposed one upon the other and having therebetween interior partitions forming a plurality of cavities each comprising a continuous tortuous passage, and means for independently supplying a circulating medium to each of said cavities.

2. A press platen comprising a pair of plates superimposed one upon the other, a plurality of longitudinally aligned partitions between said plates and forming a plurality of tortuous passages, means for separating said passages longitudinally of the platen, and means for interiorly interlocking the plates between said passages.

3. A press platen comprising a pair of plates superimposed one upon the other and having the joint therebetween at the edges of the platen closed by welding, a plurality of longitudinally aligned partitions between said plates and forming a plurality of tortuous passages, means for separating said passages longitudinally of the platen, means for interiorly interlocking the plates between said passages, and inlet and outlet conduits for each of said passages.

4. A press platen or the like comprising a pair of plates superimposed one upon the other and having therebetween interior partitions forming a plurality of cavities each comprising a continuous tortuous passage, means for independently supplying a circulating medium to each of said cavities, and interlocking means carried by said partitions and by one of said plates for securing the plates together.

5. A press platen or the like comprising a pair of plates superimposed one upon the

other and having therebetween interior partitions forming a plurality of cavities each comprising a continuous tortuous passage, means for independently supplying a circulating medium to each of said cavities, interlocking means carried by said partitions and by one of said plates for securing the plates together, and means for closing the joint between said plates at the edges of the platen between the top and bottom faces thereof. 10

In testimony whereof I affix my signature.

LOUIS McCARTHY.