

(No Model.)

S. B. DOVER.

APPARATUS FOR EXTRACTING OIL FROM OLEAGINOUS SEEDS, &c.  
No. 270,291.

Patented Jan. 9, 1883.

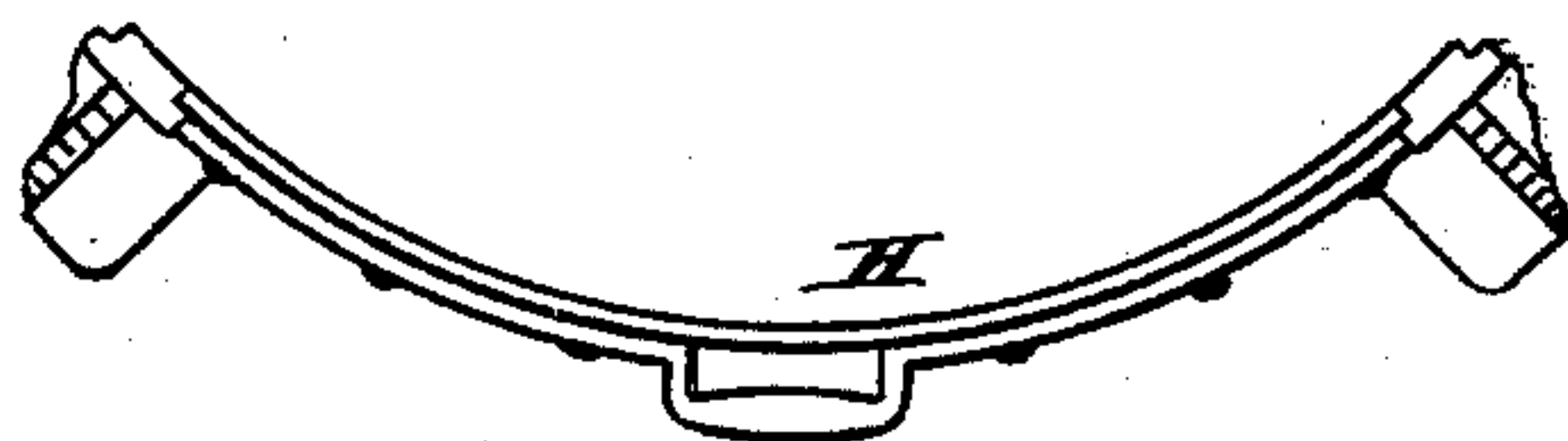
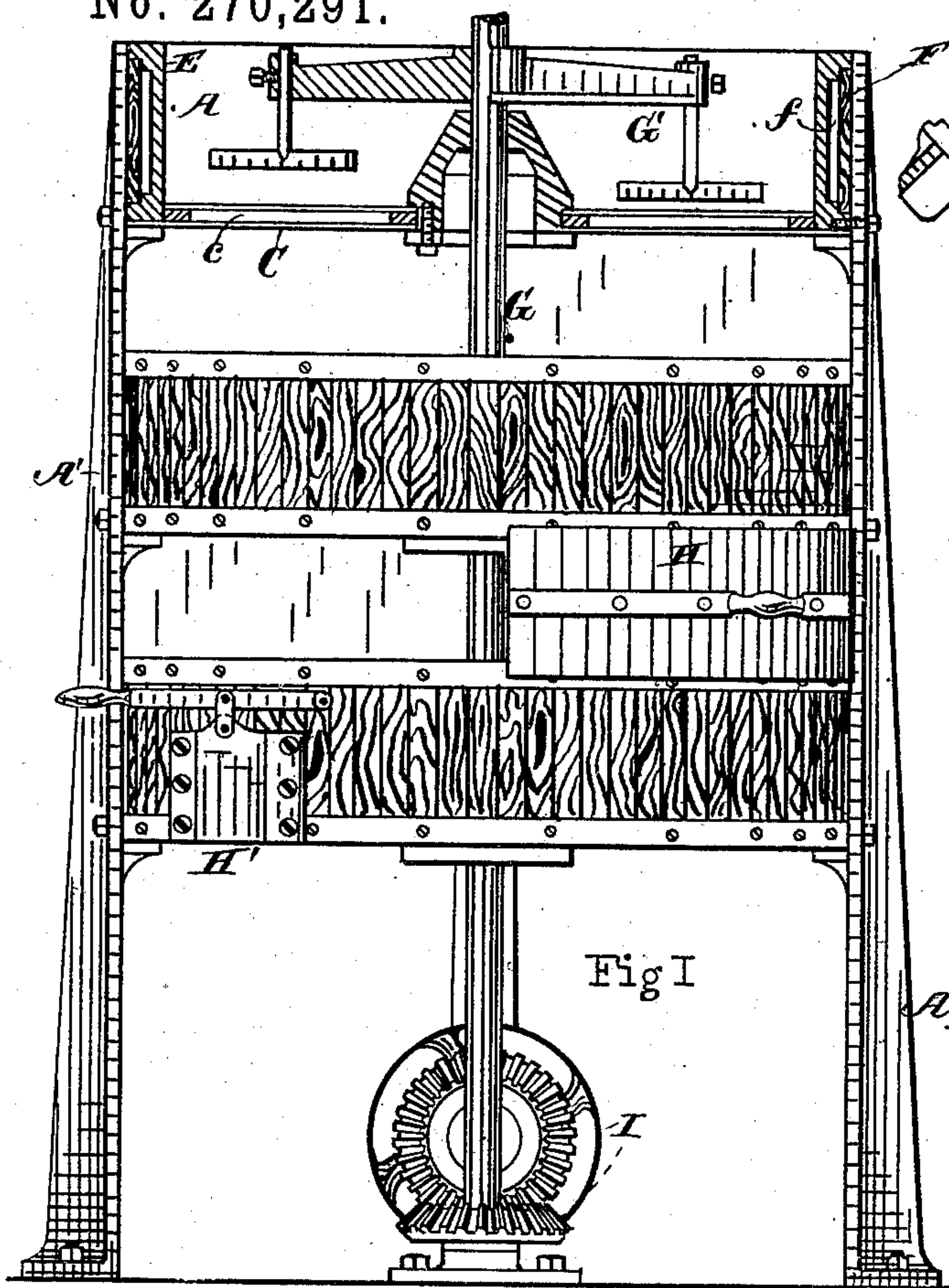


Fig III

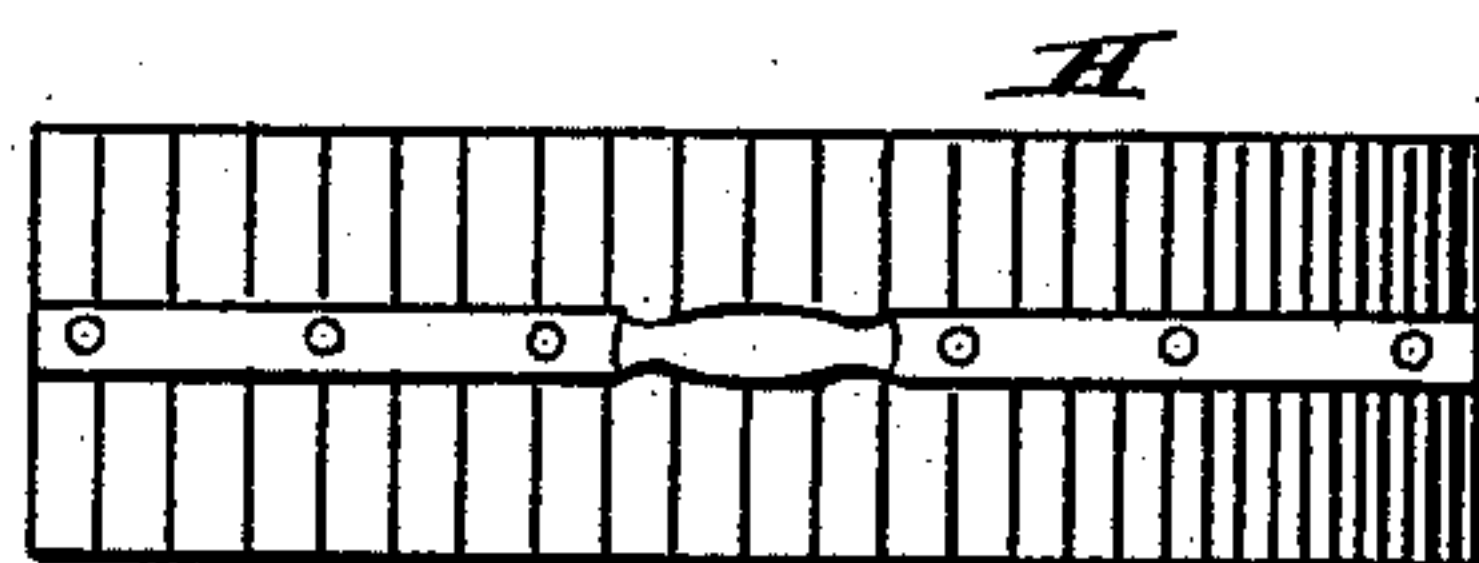


Fig IV

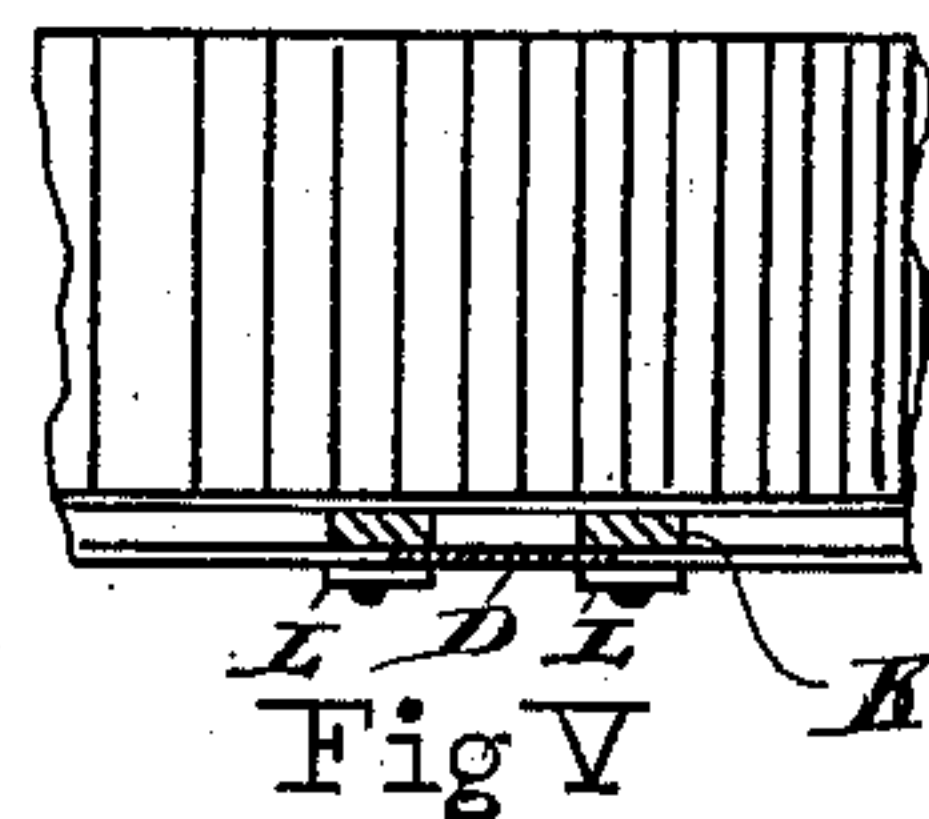


Fig V

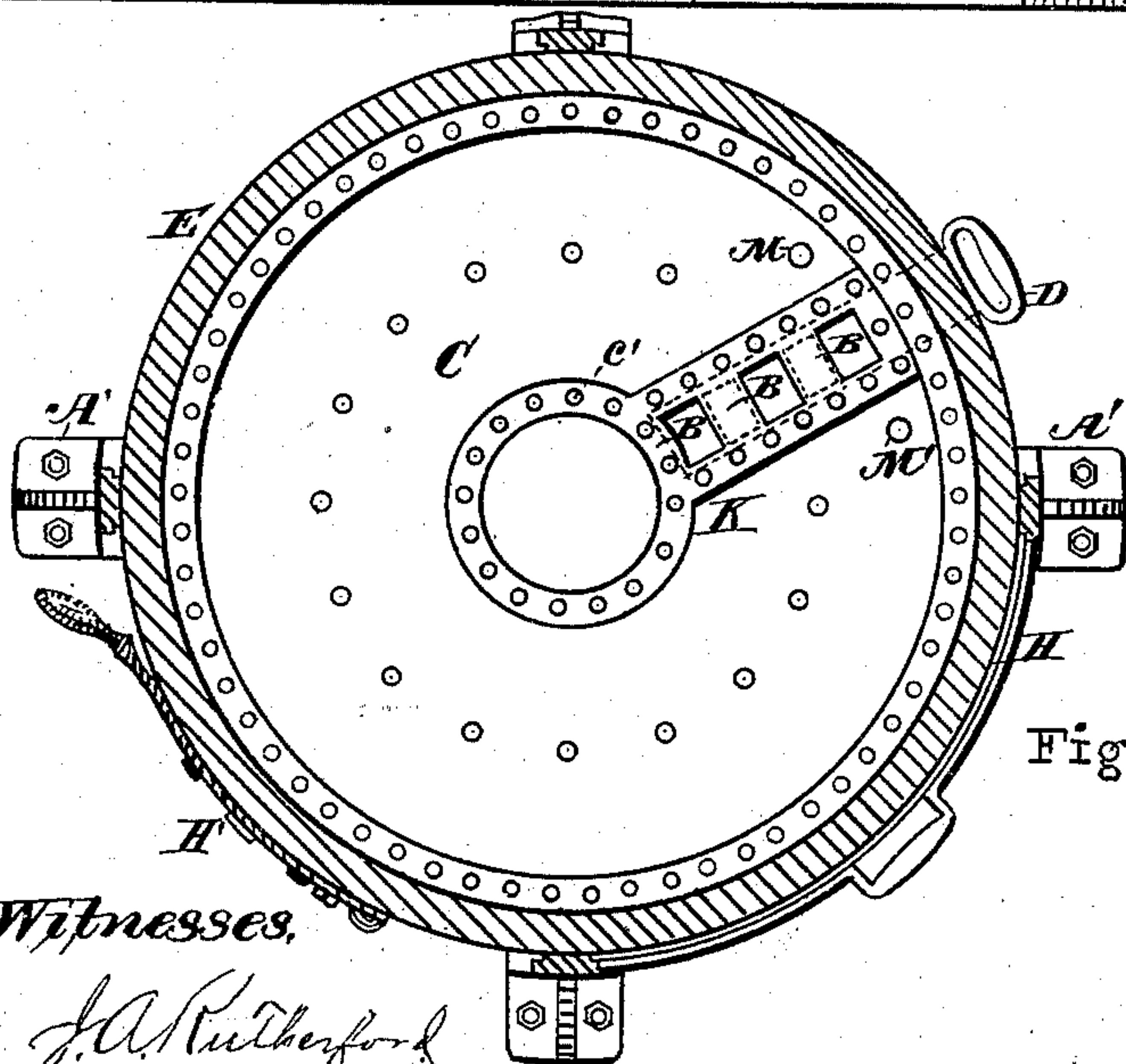


Fig II

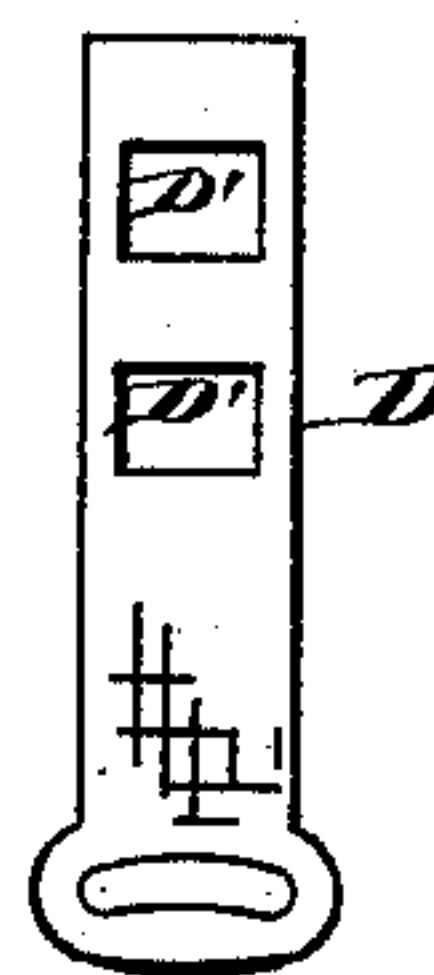


Fig VI

Witnesses,

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# UNITED STATES PATENT OFFICE.

SAMUEL B. DOVER, OF DAYTON, OHIO, ASSIGNOR TO THE BUCKEYE IRON AND BRASS WORKS, OF SAME PLACE.

APPARATUS FOR EXTRACTING OIL FROM OLEAGINOUS SEEDS, &c.

SPECIFICATION forming part of Letters Patent No. 270,291, dated January 9, 1883.

Application filed November 25, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL B. DOVER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented new and useful Improvements in Apparatus for Extracting Oil from Oleaginous Seeds, &c., of which the following is a specification.

This invention relates to that class of apparatus which is employed for the extraction of oil from oleaginous seeds, and is designed to improve the construction of the heater or kettle in which the ground seed or meal is cooked preparatory to placing it in the press for the expression of its oil.

My invention consists in a kettle divided into hollow compartments, combined with slide-doors for closing the spaces between the compartments and forming continuations of the walls of the latter.

The invention also consists in a kettle divided into two or more compartments having their walls jacketed with wood, paper, or other material, so as to create an air-space around the compartments.

The invention also consists in the combination, with the communicating compartments having steam or hot-air spaces in their bottoms, of slide-doors for closing the passages between said compartments.

The invention embraces other features, all of which will be fully hereinafter explained in detail.

In the accompanying drawings, illustrating my invention, Figure I is a part vertical section and part elevation of the apparatus, the upper portion and the heater being shown in section. In this figure the sectional covers or sides for the spaces between the several divisions or compartments are all detached but one. The front standard is also not shown in this figure. Fig. II is a top or plan view with a part shown in horizontal section. Fig. III is a top edge view of one of the detachable side covers for the spaces between the compartments. Fig. IV is a side view of the said cover. Fig. V is a sectional detail of a sliding trap-door, which is adapted to be opened so as to allow the passage of meal from one compartment to the other. Fig. VI is a plan view of one of the sliding trap-doors.

My improved heater consists of a cylindrical shell or case, which is divided into two or more chambers or compartments by means of horizontal partitions, in which latter steam is introduced, so as to heat the material contained in the compartments. In order to allow access to be had to any one of the compartments, the shell is composed of a series of annular walls secured to vertical standards, and detachable doors or sides which are located between the fixed annular side walls. In effect the fixed walls constitute the sides of receptacles for containing the seed, and the removable walls or sides constitute doors for the spaces between the top of one receptacle and the bottom of the next upper receptacle, whereby the kettle composed of the fixed and detachable sides contains all of the compartments.

A A refer to the compartments of the cylindrical kettle, the walls and bottoms of which said compartments are supported by standards A'. These compartments communicate with each other through openings B, formed in the horizontal partitions C, which constitute their bottoms, whereby the meal from one compartment can be passed into the next lower compartment. Sliding doors D are provided for opening or closing the passages through the bottoms of the compartments, each door being formed with two or more openings, D', which can be brought to register with the openings in the partitions C, constituting the bottoms of the compartments, said openings being arranged in a line radiating from the center of the compartment, so that the door composed of an oblong plate can be slid through an opening at the side of the compartment and moved over the passages B, so as to open or close the same. The wall of each compartment consists of an inner metal band or cylinder, E, one of which is shown in Fig. 1. These metal walls are seated upon the bottoms of the compartments in which they are located, and are each provided on its outer side with marginal ribs, to which is fastened a band, F, of wood, paper, or other material, so as to form an annular air-space, F. The construction and material of these jackets can be varied, and can be secured by metal hoops or in any other convenient way. The standards fit against the outer sides of the jackets F, which consti-



tute the fixed portions of the walls of the kettle, and are secured by bolts or other suitable means to the metal bands or rings E. The bottoms C of the compartments are chambered, as indicated at c; and to such end said portions can each be composed of an inner and outer ring, with metal plates secured to their upper and lower sides, provided with central bearings for a vertical shaft, G, upon which the agitators G' are mounted. The spaces between the compartments are closed by sectional detachable sides or jackets H, one or all of which can be removed to admit of the contents of the compartments being inspected. These detachable sides are preferably adapted to slide in grooves formed in the standards, although, if desired, they can be hinged to the standards like ordinary doors; or the sides or cover for each space can be made in one piece. By such arrangement the walls of the compartments and the sides H constitute in effect a single cylindrical casing, divided by a series of partitions into communicating compartments, whereby the heat radiated from the bottom of one compartment will be utilized in warming the contents of the next lower compartment. H' indicates a sliding door for discharging the meal from the lowest compartments, and I denotes gear-wheels for operating the shaft carrying the agitators. These agitators in revolving around the shaft stir the meal, and also sweep the same over the opening in the bottom of the compartments. The construction of the door D can be varied, that shown, however, being both simple and convenient.

K, Figs. 2 and 5, is a metal plate, provided with openings registering with the openings in bottom C, and secured by rivets c' between the two top and bottom portions of the said bottoms C. The door D, as shown in Fig. 5 and dotted lines Fig. 2, slides under said plate and is supported by cleats L, secured to the bottom C.

In using this apparatus raw meal is admitted into the upper compartment by suitable means—such, for example, as a spout which will discharge the meal in a continuous stream into said compartment, in which the meal is then heated. The meal can then be emptied into the next lower compartment by opening the passages between the two, in which lower compartment the heating and tempering process is continued for a certain length of

time, after which the meal can be emptied into the next lower compartment, and finally carried off to charge the press. As no fresh meal will have been added to the charge after leaving the first compartment, the meal will be thoroughly and equally tempered. Steam is admitted into the chambered bottoms or partitions through openings M, and discharged through openings M' by means of any suitable pipe-connection.

A kettle for extracting oil has heretofore been provided with a jacket and a hollow bottom to form a steam-space, said kettle containing a revolving stirrer, and having its bottom provided with an opening controlled by a pivoted gate, so that the material treated in the kettle can be discharged into a similarly-constructed kettle located beneath the same. Such, however, is not my invention.

Having thus described my invention, what I claim is—

1. In a heater for preparing meal from oleaginous seeds for the extraction of oil, a kettle divided into compartments, substantially as described, with the slide-doors D for closing the spaces between the compartments and forming continuations of the walls of the latter, as set forth.

2. In an apparatus for preparing meal from oleaginous seeds for the extraction of oil, a kettle divided into two or more compartments having their walls jacketed with wood, paper, or other material, so as to leave air-spaces around the compartments, for the purpose set forth.

3. In an apparatus for preparing meal from oleaginous seeds for extracting oil, the combination of the walls E F and removable sides H with the horizontal partitions having valved openings, substantially as described.

4. The combination, with the herein-described communicating compartments having steam or hot-air spaces in their bottoms, of the slide-doors for closing the passages between said compartments, and the rotary agitators, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

SAML. B. DOVER.

Witnesses:

W. B. ANDERSON,  
FRANK S. BREENE.