No. 696,506.

Patented Apr. 1, 1902.

J. C. W. STANLEY.

RENDERING APPARATUS.

(Application filed June 12, 1901.)

(No Model.)

2 Sheets—Sheet 1.

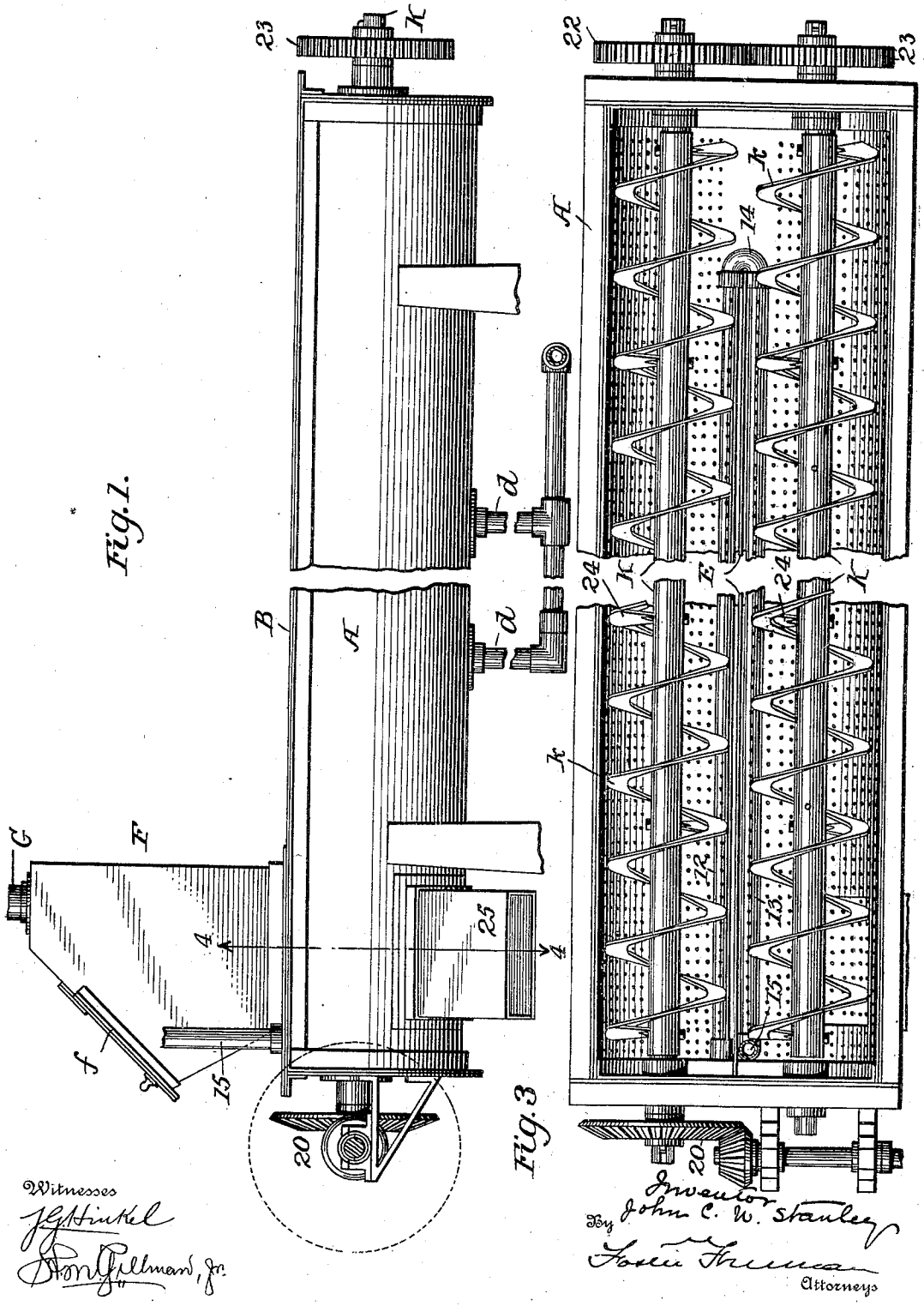


Fig. 1.

Fig. 3

Witnesses
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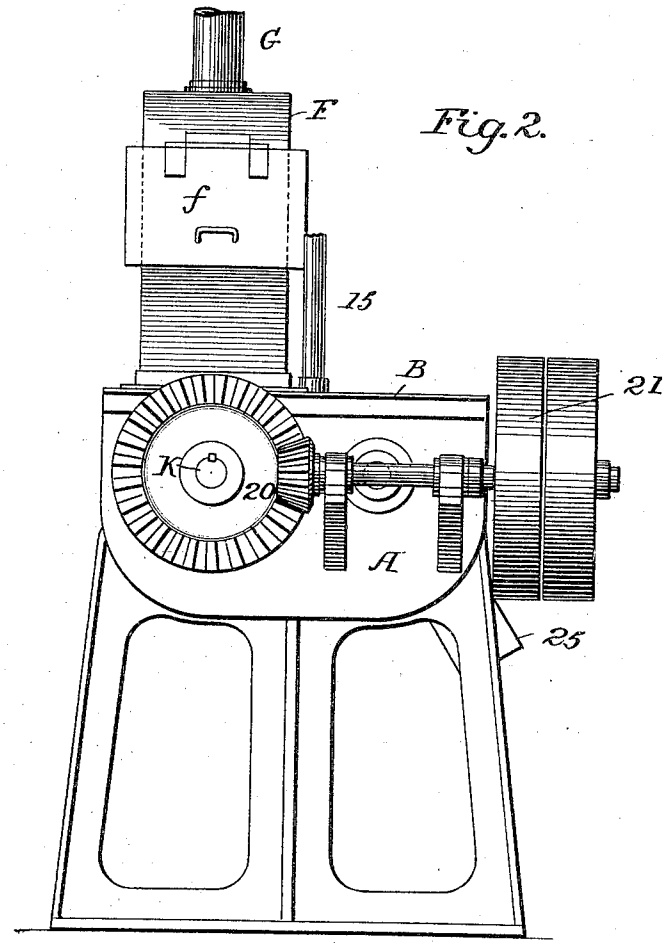
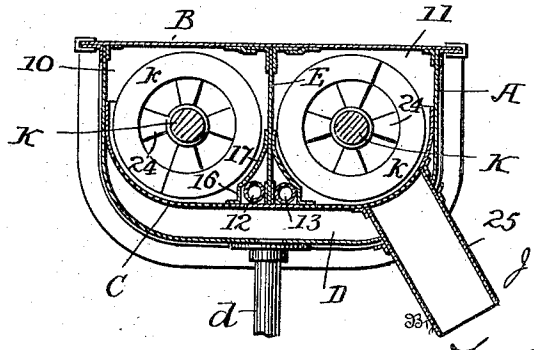


Fig. 2.

Fig 4.



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UNITED STATES PATENT OFFICE.

JOHN CHARLES WILLIAM STANLEY, OF LONDON, ENGLAND.

RENDERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 696,506, dated April 1, 1902.

Application filed June 12, 1901. Serial No. 64,314. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHARLES WILLIAM STANLEY, a subject of the King of England, residing at London, England, have invented certain new and useful Improvements in Steaming-Kettles for Fish, Meat, &c., of which the following is a specification.

This invention relates to steaming-kettles for use in treating fish, meats, slaughter-house offal, &c., for the purpose of extracting oleaginous matter therefrom.

The object of the invention is to improve devices of this character, whereby superior results will be obtained, especially in the quality of the oleaginous matter extracted.

The invention and the advantages arising therefrom will be fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a steaming-kettle constructed in accordance with my invention. Fig. 2 is an end view. Fig. 3 is a plan, the cover being removed; and Fig. 4 is a section on the line 4 4 of Fig. 1, the feed-hopper and the exhaust being omitted.

The outer shell or casing A is substantially U-shaped in cross-section, is closed at both ends, and provided with a cover B, which is detachably secured to the shell in any desired manner to form practically a steam-tight joint. Within the casing A a cross-sectionally U-shaped plate C is supported to leave a space or chamber D between it and the bottom of the casing, and this plate extends from end to end of the casing. A vertical partition E extends between the plate D and the cover from one end thereof to nearly the other end, thereby forming two parallel compartments 10 and 11, which communicate at one end of the casing A.

Supported upon the plate C are two perforated steam-pipes 12 and 13, one on each side of the partition E, and these pipes are connected by a perforated coupling 14 at their inner ends at the end of the partition and form practically a continuous pipe, and a steam-supply pipe 15 is connected to the end of one of the pipes, and the adjacent end of the other pipe will be closed.

Angle-bars 16 are secured to the plate C parallel to the partition E and hold the steam-pipes in position, and from the upper edges of these angle-bars perforated curved plates 17 extend to the partition E, to which they are secured. When steam is admitted through the pipe 15 to the pipes 13 and 12, it will issue from the perforations in the pipes 13 and 12 and pass through the perforated plates 17 into the compartments 10 and 11 and cook the material being treated. The plate C is perforated, and as the cooking progresses the oleaginous matter will be extracted from the material under treatment and, with the water of condensation and such other liquid as may be extracted from the material under treatment, will drip through the perforations in the plate C into the chamber D, from which it may be drained off through pipes *d d* into a receptacle. (Not shown.)

A feed-hopper F is supported upon one end of the casing A to deliver the material to the end of one compartment—in this case the compartment 10—and is provided with a removable cover *f*. An exhaust-pipe G leads from the casing to a condenser. (Not shown.)

Some means must be provided to move the material to be treated through the compartments 10 and 11, and in such movement the material should not be mashed or pulped, as it would then form a compact mass and render it difficult to separate the oleaginous matter. In order to move the material continuously and at the same time keep it broken up, I preferably use the following mechanism: Extending longitudinally through each compartment 10 and 11 is a shaft K, one end of which is positively driven by gearing 20, which is driven by a belt-pulley 21. The other end of the positively-driven shaft is provided with a gear 22, which meshes with a similar gear 23 on the other shaft, and the two shafts are thus driven, but in reverse directions. To each shaft a spirally-twisted blade *k* is attached by means of a series of brackets 24, secured at intervals to the shafts and blades. The blades surround the shafts, but do not touch them, thus leaving an annular space between the inner edge of the blade and the shaft, which is obstructed at intervals by the brackets 24. Much of the material as it is moved along will pass along this annular space, and the brackets will constantly break it up and prevent it from forming a compact mass, as would be the case if

the blade engaged the shaft, and the material could only follow the spiral passage formed by the blade. Of course as the cooking of the material proceeds it will become broken up more or less, but it will not compact into a solid mass, and consequently the oleaginous matter will have full opportunity to separate from the material. The conveyer in the compartment 10 will move the material to the end of the partition E, and then the conveyer in the compartment 11 will move it along in the opposite direction, and the cooked material will be discharged through an outlet 25 at the end of this compartment adjacent the feed-hopper.

By using free steam to cook the material it will not be burned and the oleaginous matter will be of a much better color, because it will not be subjected to continuous cooking, but can escape as soon as it is freed from the material being treated. By draining the oleaginous matter off as soon as freed from the material the usual subsequent step of pressing the cooked material to express the oleaginous matter is dispensed with, and, furthermore, the separation is more complete.

I do not limit myself to the specific devices illustrated to move the material through the compartments and at the same time prevent it from forming a compact mass, as other devices might be employed to accomplish this result; nor do I limit myself to the other precise details of construction illustrated and described; but,

Having described an apparatus adapted to carry out my invention, I claim—

1. In an apparatus for extracting oleaginous matter from fish, meats, &c., the combination of a closed vessel, a perforated plate extending transversely thereof above the bottom, a vertical partition extending upwardly from the perforated plate to form two compartments above the said plate communicating at one end of the partition, a perforated steam-pipe on each side of the partition to discharge free steam into the respective compartments, means to feed the material to be treated to the end of one compartment, means to move it through the compartments, and means to drain off the oleaginous matter from the space between the perforated plate and the bottom of the vessel, substantially as set forth.

2. In an apparatus for extracting oleaginous matter from fish, meats, &c., the combination of a closed vessel, a perforated plate extending transversely thereof above the bottom, a vertical partition extending upwardly from the perforated plate to form two compartments above the said plate communicating at one end of the partition, a perforated steam-pipe on each side of the partition to discharge free steam into the respective compartments, means to feed the material to be treated to the end of one compartment, means to move it through the compartments and maintain it in a broken-up condition, and means to drain off the oleaginous matter from the space between the perforated plate and the bottom of the vessel, substantially as set forth.

3. In an apparatus for extracting oleaginous matter from fish, meats, &c., the combination of a closed vessel, a perforated plate extending transversely thereof above the bottom, a vertical partition extending upwardly from the perforated plate to form two compartments above the said plate communicating at one end of the partition, a perforated steam-pipe on each side of the partition to discharge free steam into the respective compartments, means to feed the material to be treated to the end of one compartment, means to move it through the compartment, means to discharge the cooked material, an exhaust-pipe leading from the closed vessel, and means to drain off the oleaginous matter from the space between the perforated plate and the bottom of the vessel, substantially as set forth.

4. In an apparatus for extracting oleaginous matter from fish, meat, &c., the combination of a closed vessel, a perforated plate extending transversely thereof above the bottom, a vertical partition extending upwardly from the said plate to form two compartments above the plate communicating at one end, means to admit free steam to each compartment, means to feed the material to be treated to the end of one compartment, and means to move it through the compartments and maintain it in a broken-up condition, substantially as set forth.

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

JOHN CHARLES WILLIAM STANLEY.

Witnesses:
WILLIAM A. PERRY, Jr.,
ISAIAH A. HUSON, Jr.