(No Model.)

W. A. GRANT.

SOAP MANUFACTURING MACHINE.

No. 332,605. Patented Dec. 15, 1885.

FIG. 1.

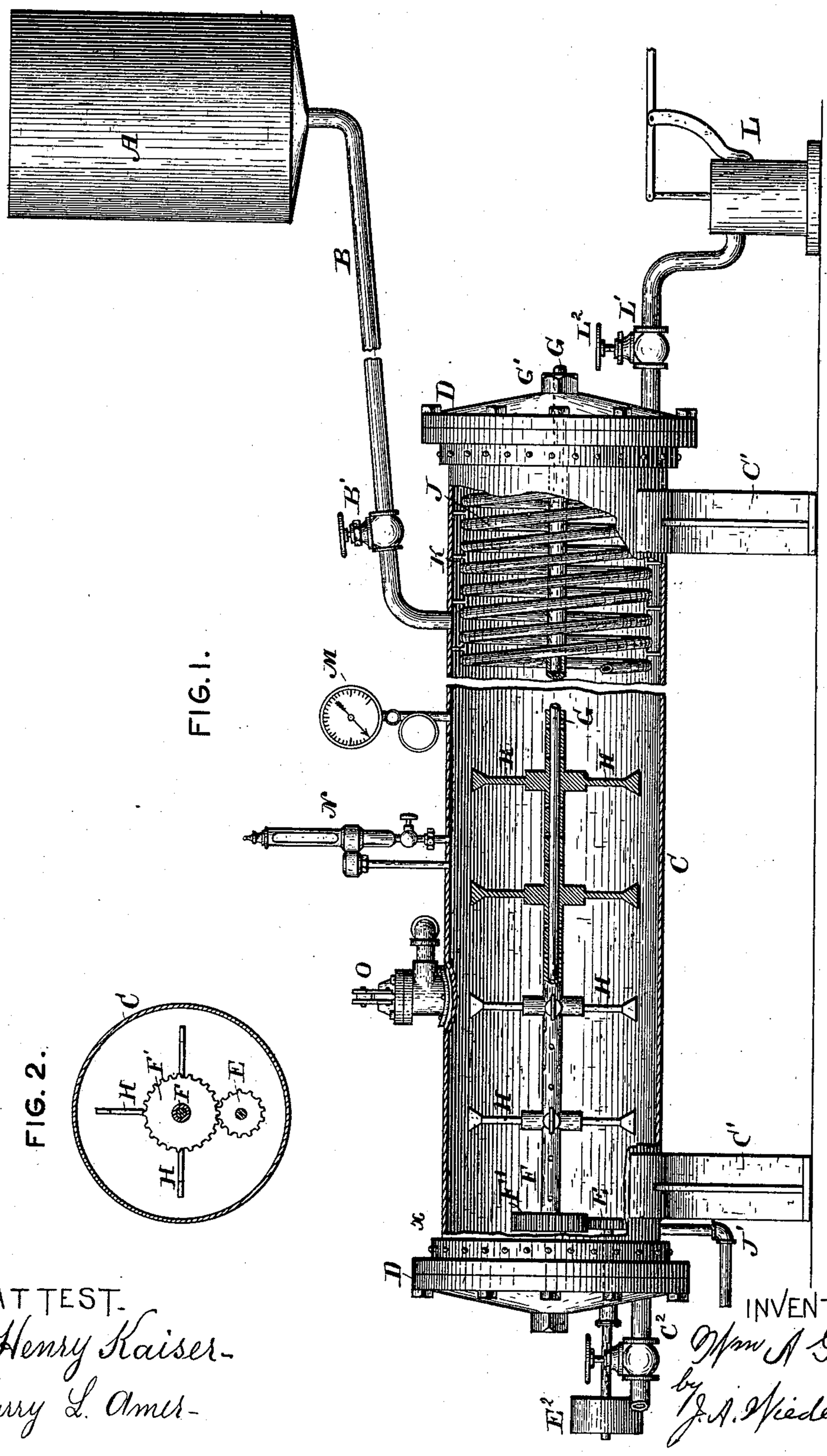

FIG. 2.

ATTEST.

J. Henry Kaiser.

Harry L. Amer.

INVENTOR.

Wm. A. Grant

by J. A. Wiedersheim & Co.

Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. GRANT, OF HOUSTON, TEXAS.

SOAP-MANUFACTURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 332,605, dated December 15, 1885.

Application filed August 7, 1885. Serial No. 173,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. GRANT, a citizen of the United States, residing in the city of Houston, county of Harris, State of Texas, have invented a new and useful Improvement in Soap-Manufacturing Machines, which improvement is fully set forth in the following specification and accompanying drawings.

Figure 1 represents a side elevation, partly sectional, of an apparatus embodying my invention. Fig. 2 represents a sectional view of a portion of the device on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the drawings and specification.

My invention relates to improvements in soap-manufacturing machines; and it consists in the details hereinafter set forth and fully described.

Matter shown and described and not claimed herein is reserved and claimed in another application by applicant, of even date herewith, (August 7, 1885,) and bearing Serial No. 173,805.

Referring to the drawings, A represents a tank or charger, in which the various ingredients of which the soap is to be formed are placed. This tank is placed in an elevated position, or above the rest of the apparatus, so that the solution can be readily conducted by gravity from the same through pipe B to the compressor C.

In pipe B there is a valve or cut-off, B′, whereby the flow from the charger can be checked or stopped when desired.

The compressor C is a cylinder composed of steel or other suitable material, having a body and detachable heads D, the latter being secured by bolts and screws to the said body, so that the said heads may be removed when desired for cleansing or other purposes.

C′ represents supports or standards on which the compressor is placed.

Passing through one of the heads D is a shaft, E, having a stuffing-box and carrying a pinion, E′, on its inner end. Motion is communicated to the said shaft by means of a band-wheel, D′, thereon, which receives motion from any suitable motor.

Secured to heads D is a rigid shaft, G, which has mounted thereon a perforated sleeve, F, carrying a pinion, F′, meshing with the pinion E′. By means of the perforations in the sleeve F the inner rigid shaft is lubricated by the mixture in the cylinder. Rigidly secured to the sleeve F are blades H, which extend radially therefrom and are formed either of metal or wood, and are of any suitable shape.

Within the compressor C′, and several inches from the wall thereof, is a coil of iron pipe, J, extending the entire length of the cylinder, one end of which is connected to a steam-chest or generator, while the other end, passing outside of the cylinder, has a trap connected therewith. The coil J is strengthened in its position by iron bars K, placed at intervals between the said coils J and the steel cylinder C.

L represents a hydraulic pump, suitably connected with the compressor C by the pipe L′, having a cock at L^2 for regulating or shutting off the pressure.

M and N represent, respectively, an ordinary pressure-gage and thermometer, O a safety-valve, which may be of any usual construction.

The operation of the device is as follows: The mixture of which the soap is to be formed is placed in the charger A, and from thence conveyed by the pipe B to the compressor C. When the latter is nearly filled, the flow therein is stopped by means of the cock B′, and the perforated sleeve carrying the blades H is revolved at the rate of about thirty revolutions per minute, thoroughly mixing the mass, which is heated to the temperature of at least 160° Fahrenheit, or higher, as may be needed, by means of steam injected through the coil J, which extends the entire length of the cylinder. A pressure of from three hundred and twenty-four to four hundred pounds per square inch, owing to the quality of the material, is then applied by means of the hydraulic pump L to the mixture, when in about four or five minutes the soap is in proper condition for running into the molding-frames by means of the outlet-pipes.

What I claim, and desire to secure by Letters Patent, is—

1. Apparatus for soap manufacture, consisting of a charger, a compressor, having a mixer and heating-coil within the same, and a hy-

draulic pump connected to said compressor, all arranged and combined substantially as described.

2. The charger A, in combination with pipe B, having cock B′, compressor C, having steam-coil J within the same, extending from end to end thereof, a rotary mixer within the said compressor, and means, substantially as described, to rotate the same, and a hydraulic pump, L, connected to said compressor by pipe L′, having cock L″, substantially as described.

3. The compressor C, having detachable heads D, rigid shaft G, rotary shaft E, having pinion E′, means, substantially as described, to rotate the said shaft E, perforated sleeve F, having pinion F′, meshing with E′, and blades H, substantially as described.

4. A compressor having a mixer consisting of a perforated sleeve provided with blades loosely mounted on a fixed shaft, and carrying a pinion meshing with a pinion mounted on a rotary shaft passing through one of the heads of the compressor, substantially as described.

5. The charger A, having outlet-pipe, in combination with compressor C, having within the same a steam-heating coil and a rotary mixer, a hydraulic pump connected to said compressor, pressure-gage M and N, and safety-valve O, substantially as described.

WM. A. GRANT.

Witnesses:
ROBT. AITON,
CHARLES W. HANDY.