

No. 671,081.

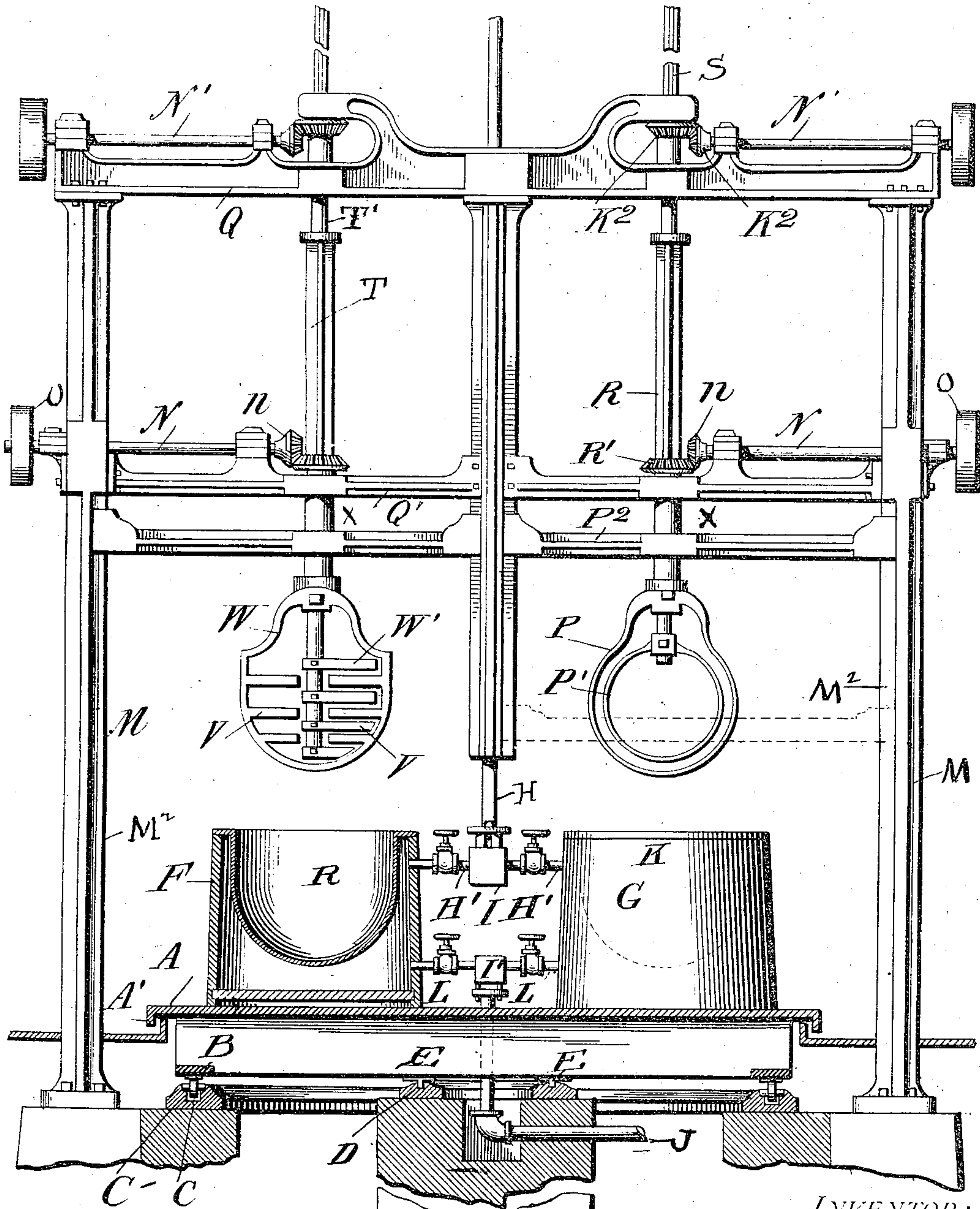
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E. E. GREEN.

APPARATUS FOR MAKING GELATIN DYNAMITE.

(Application filed July 30, 1900.)

(No Model.)



WITNESSES:

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APPARATUS FOR MAKING GELATIN DYNAMITE.

SPECIFICATION forming part of Letters Patent No. 671,081, dated April 2, 1901.

Application filed July 30, 1900. Serial No. 25,296. (No model.)

To all whom it may concern:

Be it known that I, ELMER ELLSWORTH GREEN, a citizen of the United States, residing at Santa Clara, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Apparatus for Making Gelatin Dynamite; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for the manufacture of gelatin dynamite, whereby double the quantity of the product may be produced in a given time than with machines commonly in use and with a greater degree of safety.

In carrying out my invention I provide means whereby the gun-cotton and nitroglycerin are thoroughly mixed together at a suitable degree of temperature in a receptacle which is mounted on a rotary platform, thus allowing the receptacle to be positioned underneath a stirrer for incorporating dry absorbents with the gelatin without necessitating the removing of the gelatin from one receptacle to another, which is frequently attended with much danger. In the manufacture of gelatin dynamite it is first necessary to make the nitrogelatin by a different mixing motion than is required in the mixing of the gelatin dynamite. This I am able to accomplish by means of differently-constructed stirrers and without the necessity of removing the material from one receptacle to another.

My invention will be hereinafter more fully described, and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawing, which, with the letters of reference marked thereon, forms a part of this application, and in which drawing I have shown a front elevation of the apparatus, parts being shown in section.

Reference now being had to the details of the drawing by letter, A designates a rotary platform having a flanged edge A' and a circular band or track B adjacent to the outer

marginal edge of the bottom of the platform. Directly underneath said track is a series of rollers C, mounted in suitable bearing members C', which may be supported on concrete or other suitable foundations. On these rollers the platform is designed to rest and rotate. Near the center of the platform and underneath the same is a circular grooved way D, in which the downwardly-projecting flange of the guide E rests. Upon the platform are mounted the two tanks F and G, which are designed to contain hot water, the water being supplied through the feed-pipe H, which has communication with the tanks through the valve-regulated pipes H', leading into the stuffing-box I, in which the lower end of the pipe H is allowed to turn steam-tight. Each tank contains a bronze kettle R, having a flanged top resting on the upper edge of the tank, a suitable space intervening between the outer circumference of each kettle and the inner wall of the tank, so as to allow the heated water to entirely surround the kettle. The outlet-pipe J, which passes up through the platform, communicates with the pipes L, which are valve-regulated, through the stuffing-box I', which turns steam-tight about the upper end of the pipe J.

M M designate upright posts which are flanged and support in suitable bearings the shafts N and N'. The shafts N have bevel gear-wheels n on their inner ends, while pulleys O are secured to rotate with said shafts at their outer ends. Mounted vertically in the cross-beams Q and Q' is the hollow shaft R, having a bevel-gear R', which meshes with the bevel-gear n , and a second gear K² is keyed to rotate with a shaft S, which turns within the hollow shaft R. Said bevel R² meshes with a pinion N² on the shaft N'. The shafts R and S have splines, so as to allow the shafts to be raised and lowered through the gear-wheels. At the lower end of the shaft R is keyed the stirrer P, while a concentric stirrer P' is keyed to and rotates with the shaft S. P² is a vertically-movable brace, which is apertured, through which the shafts pass, and which rises and lowers with the latter.

The second stirrer, mounted on the hollow shaft T and the solid shaft T', rotating within said hollow shaft T, consists of the two mem-

bers W and W', having laterally-disposed wings V intermeshing with one another as the shafts T and T' rotate in opposite directions. These stirrers are adjustably raised and lowered in a similar manner as those before described on the opposite side of the apparatus.

It will be noted that the shafts S and R, which rotate the stirrers in opposite directions, pass through collars X, which collars X are secured to the timber P² of the frame, and the said shafts are thus vertically movable with the said timber P².

In order to provide for the vertical movement of the frame carrying the stirrers, the horizontal brace-timber P² is provided at its ends with grooves which are fitted over guide-ways M², which are provided upon the inner faces of the uprights M, and the entire frame carrying the stirrers and their connections may be raised and lowered when it is proposed to raise the stirrers from the kettles or to return them thereto, as will be readily understood.

In operation the water in the tanks is brought to a temperature of approximately 140° Fahrenheit. The nitroglycerin and gun-cotton are placed in the kettle G, and the agitators or stirrers P and P' are lowered into the kettle and are rotated for, say, twenty minutes, when the mixture becomes nitrogelatin. This done, the stirrers are raised, and the platform is rotated with the tanks and kettles thereon, so that the kettle containing the nitrogelatin comes directly underneath the stirrers W and W'. The stirrers W and W' are then lowered into the kettle, and after the drying and absorbing ingredients are added to the nitrogelatin mixture the materials are thoroughly mixed together, and the product produced is gelatin dynamite, to produce which, as hereinbefore stated, requires the two distinct stirring movements.

In order to utilize both stirrers, the one for making the nitrogelatin and the other the finished product, I provide the two kettles, which may both be in operation at the same time.

Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. An apparatus for making gelatin dynamite, comprising a rotary platform, tanks mounted thereon, kettles within said tanks, vertically-adjustable stirrers designed to be lowered into said kettles, and means for operating the stirrers, as set forth.

2. An apparatus for making gelatin dynamite, consisting of a rotary platform, tanks mounted thereon, kettles within said tanks, concentric stirrers and vertically-adjustable shafts on which said stirrers are mounted, and a second set of stirrers having intermeshing wings and vertically adjustable, as set forth.

3. An apparatus for making gelatin dynamite, consisting in combination with a rotary platform tanks mounted thereon kettles within said tanks, water-feeding pipes leading to said tanks, the vertically-mounted hollow shafts bevel gear-wheels splined to said shafts, shafts mounted within said hollow shafts, and bevel gear-wheels for rotating the latter, the concentric stirrers and the stirrers having laterally-disposed intermeshing wings, said shafts being longitudinally movable, as set forth.

4. In combination with the rotary platform, the tanks, kettles mounted therein, the upright posts of the frame, the sliding cross piece or brace, the vertically-disposed concentrically-mounted shafts, the gear-wheels for rotating the shafts in opposite directions, said shafts being adjusted longitudinally as said cross-piece is raised and lowered, as set forth.

5. In combination with the rotatable platform, the circular track secured to its under face, the antifriction-wheels on which said track rests, the tanks, kettles mounted therein, the feed and outlet pipes communicating with the tanks, the grooved plate underneath said platform, the circular guide-plate having a flange guided in said groove, the stirrers and means for operating same, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER ELLSWORTH GREEN.

Witnesses:

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