

EXAMINER'S ROOM.

No. 624,687.

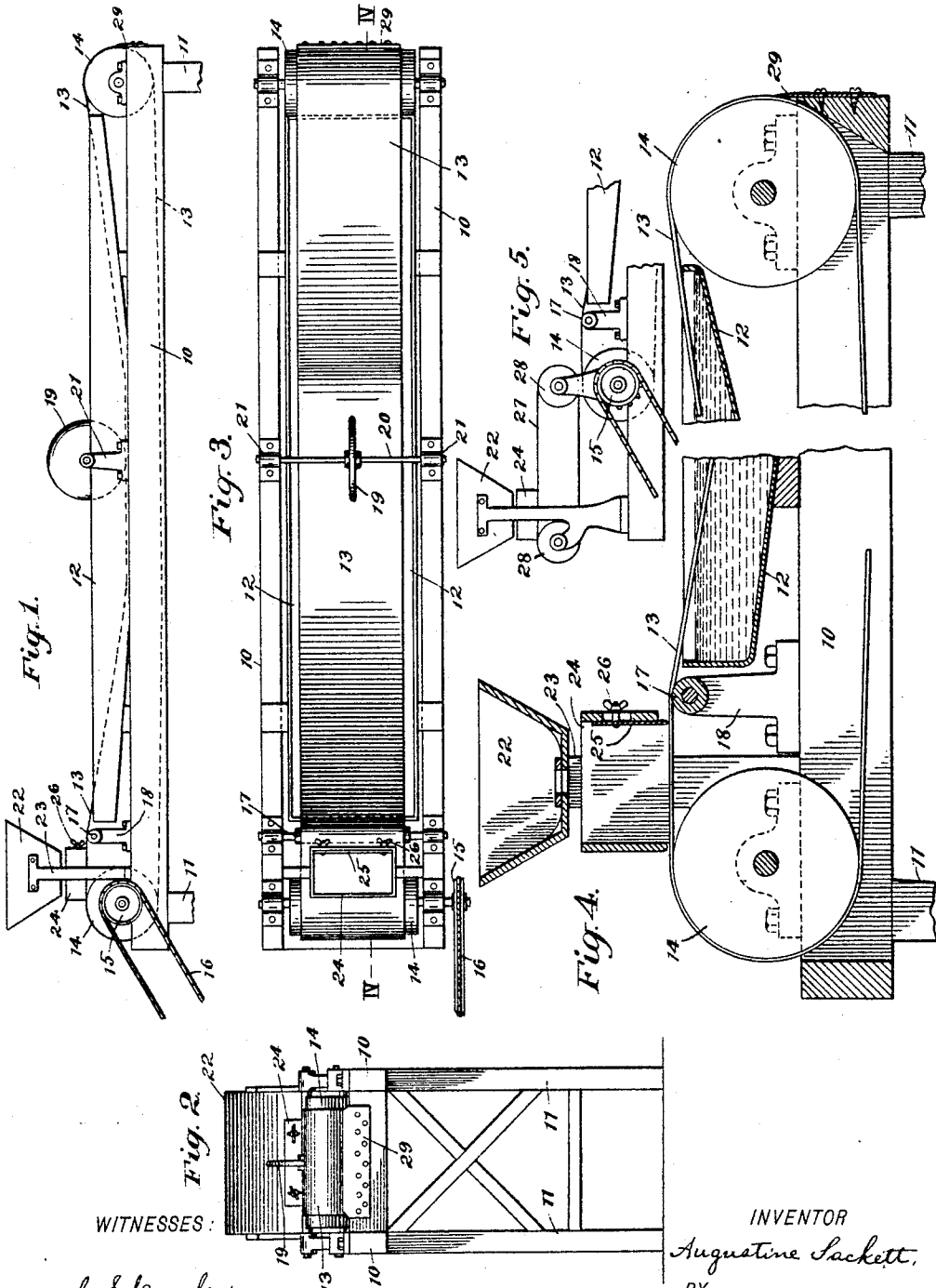
Patented May 9, 1899.

A. SACKETT.

PROCESS OF MIXING CEMENT, PLASTER, &c.

(Application filed Mar. 8, 1898.)

(No Model.)



WITNESSES:

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PROCESS OF MIXING CEMENT, PLASTER, &c.

SPECIFICATION forming part of Letters Patent No. 624,687, dated May 9, 1899.

Application filed March 8, 1898. Serial No. 673,081. (No specimens.)

To all whom it may concern:

Be it known that I, AUGUSTINE SACKETT, a citizen of the United States of America, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Processes of Mixing Cement, Plaster, &c., of which the following is a specification.

My invention relates to improvements in a process of mixing or saturating cement, plaster-of-paris, and other heavy and similar articles.

It is customary to mix plaster-of-paris, cement, and similar substances by mingling the same with water and maintaining a sufficient agitation to incorporate the water and cement, &c.; but where it is necessary to make the mixture on a large scale the process just described is inadequate, for the reason that the containing vessel becomes so coated with the mixture that it is practically useless. I have found that if plaster-of-paris, cement, or a similar substance in a ground state be immersed quietly and without agitation in a liquid the latter soon permeates the plaster or cement, thoroughly saturating the same, but the cement, &c., remains practically undisturbed and if placed on a flat vessel, for instance, can be raised from the liquid without any appreciable diminution of the cement and without causing the same to adhere to the liquid-containing vessel. Acting on this principle I provide a means for a constant and continuous saturation of the plaster or cement by producing an apparatus having a movable carrier passing through a liquid and providing also means for feeding the substance to be immersed suantly upon the aforesaid carrier and then providing further means for automatically removing the saturated matter from the carrier. In this way I am enabled to handle great quantities of plaster or cement in a relatively short space of time and further to accomplish a perfect saturation and mingling of the water and cement or plaster. Besides my process is used for mingling large quantities of cement and plaster, which is made into plaster-board and used for other purposes, and as the mingled matter soon hardens it is necessary to have it delivered ready mixed at a specified rate of speed—that is, in a definite quantity at a given time at a

given point—and by making the saturation and mingling continuous, as described, the mixed material is deposited in just such quantities as needed. As the material is used in large quantities, usually at the rate of at least one or two tons an hour, it will be seen that this is important.

To these ends my invention consists of a process of mixing plaster, cement, and similar materials, which process will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken side elevation of the apparatus forming a part of my invention. Fig. 2 is an end view of the apparatus. Fig. 3 is a plan view with feeding-hopper removed. Fig. 4 is a broken vertical section on the line 4 4 of Fig. 3, and Fig. 5 is a broken longitudinal section illustrating an auxiliary feeding device.

My process is not dependent upon the precise apparatus described; but the latter is particularly well adapted to the process. As illustrated, I have a substantial frame 10, mounted on suitable supports 11, and this carries an elongated open-topped tank 12, containing the liquid in which the plaster or cement is to be immersed, this tank being preferably, though not necessarily, deeper in the middle than at the ends. Through the tank 12 passes a movable carrier 13, which, as illustrated, is a broad belt, although it may be of any suitable and flexible structure, the belt or carrier passing over drums 14, mounted on suitable bearings at the ends of the frame 10, and the shaft of one drum is provided with a suitably-driven pulley 15, driven by a belt 16, the pulley, as illustrated, being a sprocket-wheel and the belt a chain; but of course the driving mechanism is immaterial. At the front end of the machine the upper strand of the carrier 13 passes over a supporting-roller 17, this latter being journaled on suitable brackets 18, thus leaving the part between the roller 17 and the front drum 14 comparatively level, so that the plaster or cement can be suantly delivered upon the carrier. The middle portion of the carrier is depressed into the tank 12 to the requisite depth by

means of a wheel 19, which is journaled on brackets 21 and which rides on the top of the carrier, as the drawings clearly show. It is of course evident that this wheel may be
5 made of a size to make the requisite depression of the carrier.

The feeding is accomplished by means of the main feeding apparatus (shown in Figs. 1 to 4) or the auxiliary feeding apparatus.
10 (Shown in Fig. 5.) The first form of the feeding apparatus comprises a suitable hopper 22, into which the plaster or cement is placed, and this hopper is supported on brackets 23 and delivers into a feeder 24, which is of a
15 generally rectangular shape, being open at top and bottom, and which lies close to the top of the carrier 13, at the level part thereof, between the front drum 14 and the roller 17. On the rear wall of the feeder 24 is a vertically-adjustable plate 25, held by thumb-screws 26, the height of which regulates the depth of material which passes out from the feeder on the carrier 13. This feeding apparatus is all right for most purposes; but if it
25 is desired to have the material delivered lightly and in as porous a condition as possible on the carrier, to the end that quick saturation may be obtained, an auxiliary feeding device (shown in Fig. 5) is preferably used,
30 which consists, essentially, of a belt 27, running on drums 28, one of which can be suitably driven in any usual way, and the belt 27 is arranged beneath a feeder 24 of the kind already described, while the belt discharges
35 at its rear end upon the main carrier 13. As the carrier 13 leaves the tank 12 it passes close to a scraper 19, which is held to the back end of the frame 10 and which moves the saturated material from the carrier. As the material falls it can be caught in any suitable
40 receptacle or conveyed away in the customary manner.

It will be noticed that if the material is supplied in sufficient quantity to the hopper
45 22 it will be conveyed either directly from the

feeder 24 or by the auxiliary conveyer or carrier 27, so as to lie at an even depth along the top of the same, and as the material is heavy and the speed of the carrier not too fast the material is carried gently into the tank 12,
50 being depressed by the wheel 19, and emerges completely saturated and is finally scraped off by the scraper 29. It is evident, of course, that the time required for saturation can be controlled by the speed of the carrier, the
55 size of the tank, or the feeding device, as desired.

I find that this process enables the material to be very rapidly and very thoroughly saturated and that it is disturbed so little during
60 immersion that the wheels of the tank remain comparatively clean.

It will be noticed that by carrying a definite and regular amount of the material to be mixed through the water, as specified, and
65 then depositing it at the end of the carrier the speed of the carrier can be timed so that not only will the right amount of saturation be produced, but the mixed material will be passed in such quantities and so regularly
70 that it can be used to advantage while soft.

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

The herein-described process of mixing
75 plaster, cement or similar material, which consists in moving through a liquid bath in an unagitated condition a substantially even or suant layer of material to be mixed at such a rate of speed that the said material is thor-
80 oughly saturated, and then discharging the same.

Signed by me in the borough of Manhattan, in the city, county, and State of New York, this 2d day of March, 1898.

AUGUSTINE SACKETT.

Witnesses:

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FRANK J. MATHER.