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PATENTED MAY 30, 1905.

L. F. KWIATKOWSKI.

PROCESS OF MAKING BRICK OR ARTIFICIAL STONE.

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Fig. 2.

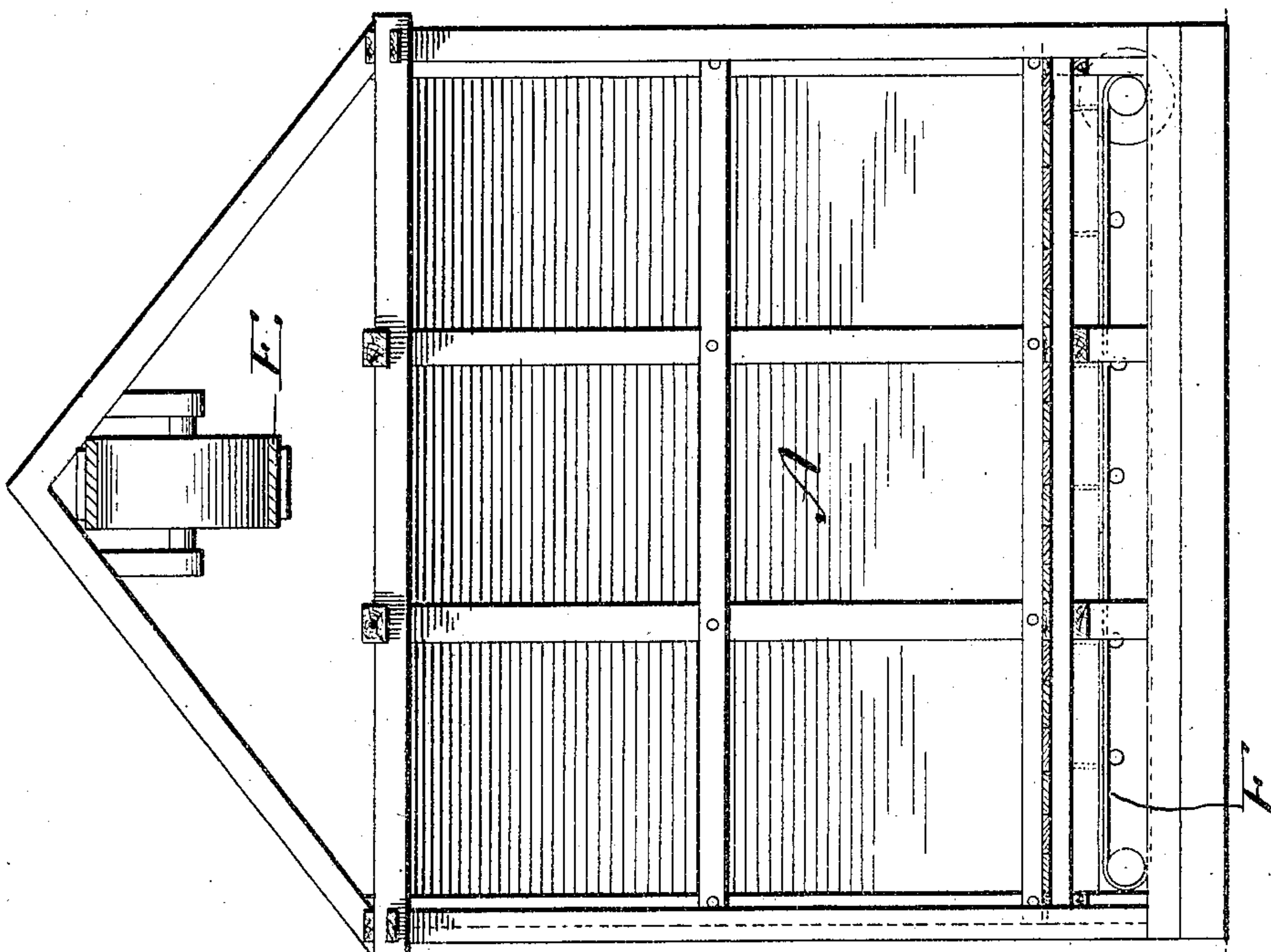
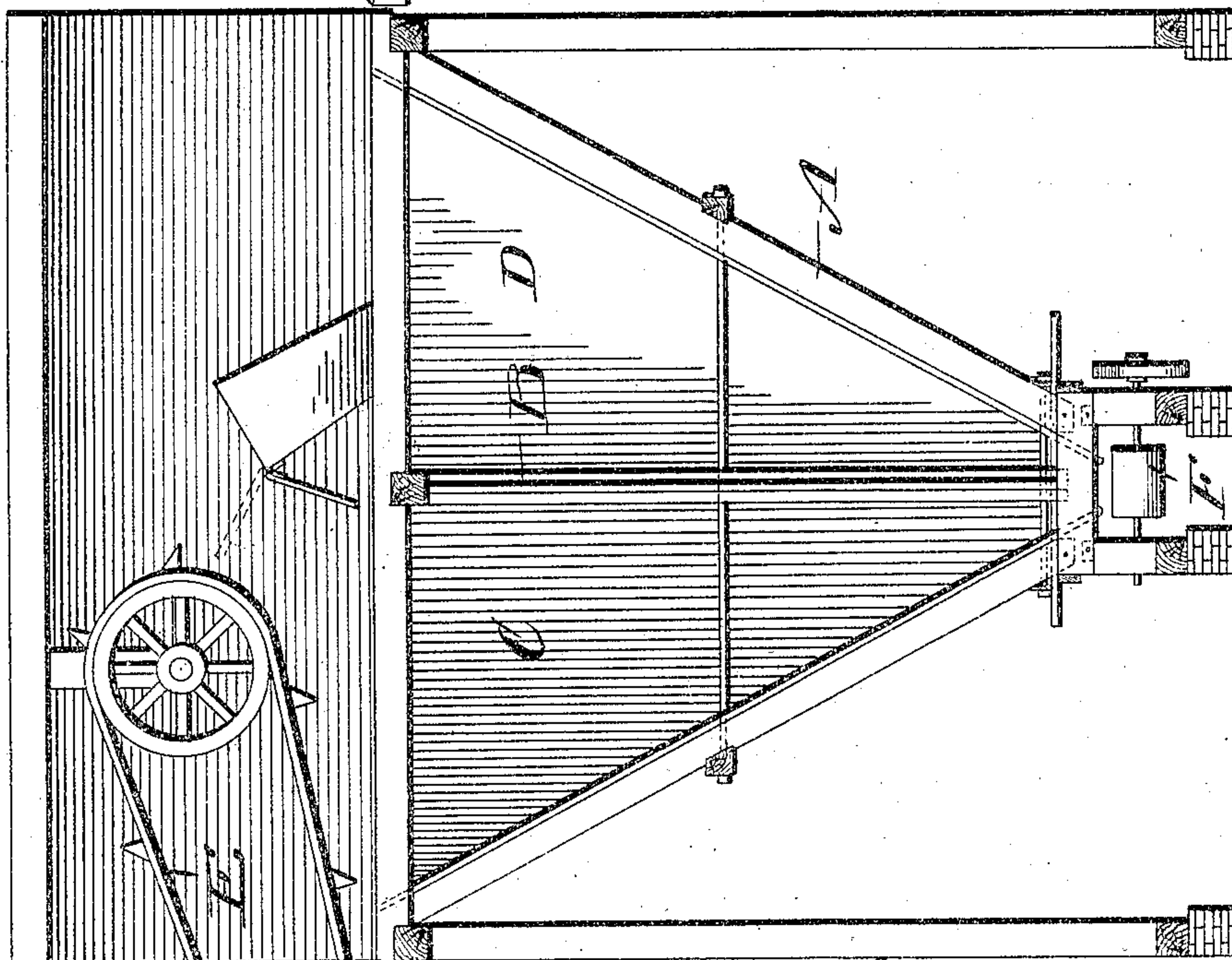


Fig. 1.



WITNESSES:

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PROCESS OF MAKING BRICK OR ARTIFICIAL STONE.

SPECIFICATION forming part of Letters Patent No. 790,904, dated May 30, 1905.

Application filed October 10, 1904. Serial No. 227,887.

To all whom it may concern:

Be it known that I, LOUIS F. KWIATKOWSKI, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improvement in Processes of Making Brick or Artificial Stone, of which the following is a specification.

My invention relates to an improved process of making bricks, artificial stone, and similar products from a mixture which includes sand or equivalent silicious material and lime of a similar character to that described in an application for patent filed by me on the 29th day of December, 1903, Serial No. 186,960, and the invention relates more particularly to the provision for the storage of the material in layers after the intermixing of the constituent ingredients thereof and the commingling of such layers before feeding the material to the molding apparatus.

To this end the invention comprises, essentially, the process to be hereinafter described, and particularly pointed out in the claims.

For the purpose of showing one means for carrying my process into effect I have illustrated an exemplification thereof in the accompanying drawings, in which—

Figure 1 is a side elevation of an apparatus for performing the process, and Fig. 2 is a detail transverse sectional view.

As shown in the drawings, the depository is in the form of a vertically-arranged hopper V-shaped in cross-section. The hopper is designated by A and is provided with a centrally-disposed vertical partition B, dividing the same into two compartments C D. An elevator or endless conveyer E is provided for feeding the mixed material into either of the compartments C D, and a belt F, common to both compartments, is arranged beneath the same for conveying the material discharged from the compartments to the molding or pressing apparatus. Each compartment is provided with a discharge-opening near the bottom of the same, which is controlled by a number of slides arranged side by side and intended to be manipulated by an attendant.

In carrying out my process after the ma-

terial under treatment has been properly mixed and sufficient water added thereto to insure the proper slaking of the lime it is discharged into the lower end of the elevator E and conveyed to top of either one of the compartments C D. The freshly-mixed material is fed into one of said compartments, and during the same period the material previously deposited in the other compartment is discharged therefrom onto the belt leading to the molding apparatus. It is desirable that the material after having been mixed shall remain in the depository a predetermined period before feeding the same to the molding apparatus, particularly as this gives sufficient time to insure the thorough slaking of the lime. I have determined that the material mixed one day should not be fed to the molding apparatus until the following day, so that in carrying out my process the compartment C, for instance, is filled one day and the compartment D emptied, while on the succeeding day the compartment D is filled and the compartment C emptied, and so on.

The construction of depository hereinbefore described has proven to be highly desirable. Besides occupying but a comparatively small space in a plant, which would otherwise be used for machinery, it performs the important service of insuring an even distribution of the different batches of material fed to the depository in such a manner that the mixture fed to the molding apparatus is always under absolute control of the attendant.

In the method for handling the material prior to my invention, in which square bins or silos were employed, the character of the material fed therefrom to the molding apparatus was irregular and the attendant could not determine upon the exact age of the material—that is, he could not tell if the material first leaving the silos was the first deposited therein or a subsequent deposit. As will be appreciated, materials of different hours' age will contain a different percentage of moisture, as some material which has been longer exposed will be relatively dry while other material which was covered will be relatively wet, and this condition of the material necessarily causes material changes and materially affects the

brick or blocks which may be manufactured. In the old bins or silos it was found that the material was not sufficiently confined to insure thorough slaking of the lime by the development of the steam resulting from the slaking of the lime in deposit, but in the character of depository, hereinbefore described, the material first fed to the compartments first reaches the bottom thereof and is thereafter deposited in layers toward the top. Owing to the peculiar shape of the depository, the material fed thereto steams itself, and any irregularity of the percentage of water which may have been present in the material when fed to the depository is regulated or compensated for as the steam resulting from the hydration of the lime rises from the bottom layer toward the top layer and penetrates the different batches of material in turn, thus equalizing and tempering the entire mixture in a uniform manner.

As the operator successively draws the several slides controlling the discharge from the bottom of the compartments C D the material will fall by gravity upon the belt in such manner that parts of each layer (as previously deposited in the compartments during the continuous operation of the mixing step) are commingled in each block when fed to the molding apparatus. This is accomplished by the top layer falling down the sides of the break made in the mass by the withdrawal of the first slide which gathers and commingles with substantially equal portions of each of the layers. Thus it will be seen that each brick or block possesses an average and equal degree of hydration and consistency and represents the average of the entire day's operation, thereby assuring perfect regularity in each day's product.

The means for carrying out the herein-described invention will be readily understood upon reference to the foregoing description

and the accompanying drawings, and it will be appreciated that the parts and methods may be varied from the specific exemplification thereof described without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a process for producing artificial stone or brick from a composition including lime and sand, consisting in intermixing said ingredients and hydrating the lime, storing the mixed material in a depository in layers of different ages, and thereafter commingling portions of each of such layers of ingredients, and molding same.

2. In a process for producing artificial stone or brick from a composition including lime and sand, consisting in intermixing said ingredients and hydrating the lime, storing the mixed material in a depository in layers of different ages for a predetermined period, conveying said materials to molds in batches containing portions of each layer, and molding same.

3. In a process for producing artificial stone or brick from a composition including lime and sand, consisting in intermixing said ingredients and hydrating the lime, then depositing the mixed material into a V-shaped depository in layers, permitting the material to sit in said depository for a predetermined time and then commingling portions of each layer of material, conveying same from the bottom of the depository to a molding apparatus, substantially as described.

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

LOUIS F. KWIATKOWSKI.

Witnesses:

F. WILTON JAMES,
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