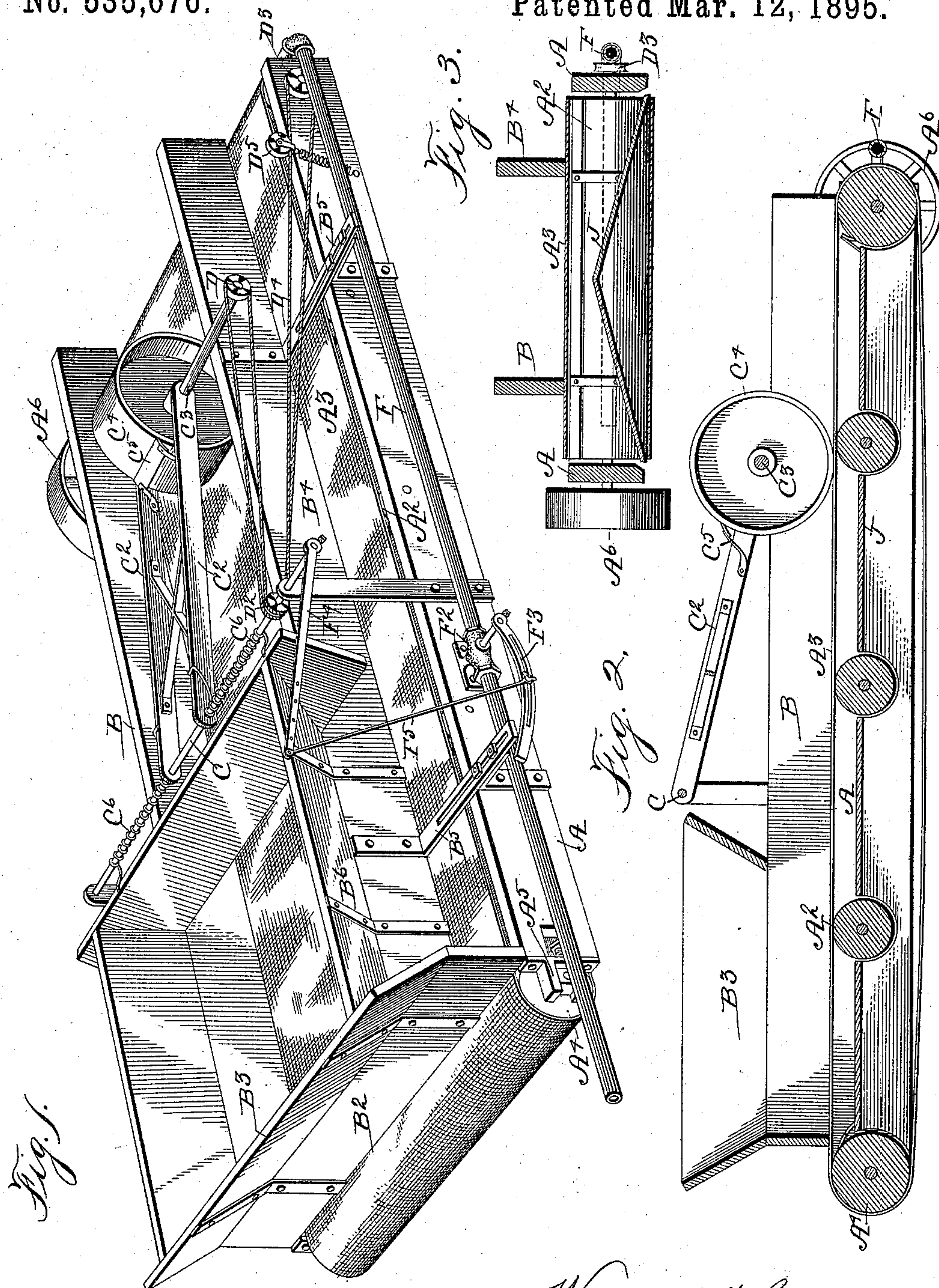


(No Model.)

W. F. COOK.
AUTOMATIC CLAY TEMPERING MACHINE.

No. 535,676.

Patented Mar. 12, 1895.



Witnesses:

W. J. Danney.

R. H. Orwig.

Inventor: William F. Cook,

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UNITED STATES PATENT OFFICE.

WILLIAM F. COOK, OF DES MOINES, IOWA, ASSIGNOR OF ONE-HALF TO
T. M. WALKER, OF SAME PLACE.

AUTOMATIC CLAY-TEMPERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 535,676, dated March 12, 1895.

Application filed December 26, 1894. Serial No. 532,945. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. COOK, a citizen of the United States of America, residing at Des Moines, in the county of Polk and State of Iowa, have invented an Automatic Clay-Tempering Machine, of which the following is a specification.

The object of this invention is to provide a device adapted to receive clay from a reducing machine or dry pan and convey it to a pug mill and to supply the proper amount of water thereto to accurately temper the clay, automatically increasing the water supply when a greater bulk of clay is being conveyed thereover and diminishing the supply as the quantity of clay decreases and entirely cutting off the water when the machine is empty, thus dispensing with one operator and rendering the use of hot water practicable, the steam arising from which has heretofore prevented the operator from seeing the clay and accurately supplying the proper amount of water.

My invention consists in the construction, arrangement and combination of the various parts to form the complete machine, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows the complete machine in perspective. Fig. 2 is a longitudinal sectional view showing the protector for the inner surface of the belt. Fig. 3 is a transverse sectional view through the complete machine.

Referring to the accompanying drawings the frame is seen to be composed of the two fixed side pieces A, having a plurality of rollers A² extended transversely between them to carry an endless conveyer A³. The end roller A⁴ is mounted in horizontally adjustable bearings A⁵ to regulate the tension of the conveyer. A belt wheel A⁶ is fixed to the axle of the roller on the opposite end of the device whereby power may be applied to operate the conveyer.

B indicates a side piece supported above the endless conveyer and B² an end piece also permanently fixed above the conveyer.

B³ indicates a hopper supported by said side and end pieces over one end of the endless conveyer and B⁴ indicates a side piece

corresponding with the part B and supported on the opposite side of the machine by the horizontally adjustable brackets B⁵. The part B⁶ fixed to said side piece forms one side of the hopper so that the width of the body of clay carried by the conveyer may be accurately adjusted.

C indicates a shaft rotatably mounted in suitable bearings above the machine frame and near the inner end of the hopper.

C² indicates two arms fixed thereto and extended rearwardly over the conveyer and having a shaft C³ rotatably mounted in their ends.

C⁴ indicates a roller fixed to the central portion of said shaft and adapted to normally rest upon the endless conveyer, A, scraper C⁵ having its arms pivotally attached to the arms C² is provided to engage the surface of the roller and keep it clean. These arms C² are normally pressed downwardly by the springs C⁶ wound upon the shaft C, which is arranged to be rotated as follows:

D indicates a pulley on the end of the shaft C³; D², a double pulley loosely mounted on the shaft C, and D³ a pulley wheel on the axle of the end roller.

D⁴ indicates a belt passed around said pulley in such a manner as to rotate the roller C⁴ in the same direction and at approximately the same speed as the endless conveyer. A belt tightening pulley D⁵ is also provided to engage the belt at a suitable point.

F indicates a pipe connected with any suitable source of water supply and passed along one side of the frame and across the end over which the clay is discharged and provided with perforations near its end adapted to discharge water into the clay as it enters a pug mill.

F² indicates a valve in the pipe at the side of the machine and F³ a segmental slotted arm fixed to said valve whereby it may be operated.

F indicates a lever fixed to the end of the shaft C, and F⁵ is a rod pivoted to the outer end of said lever and adjustably connected with the slotted arm F³, the parts being so arranged that upon a certain movement of the lever F⁴ the valve may be opened or closed

to a greater or less degree by adjusting the end of the rod relative to the inner end of the slotted arm.

J indicates an apron supported between the upper and lower sections of the endless carrier and inclined downwardly at its sides to carry the dust and particles of clay admitted between the upper and lower portions of the conveyer outwardly, and thereby protect the under surface of the conveyer.

In practical use the clay is dropped into the hopper and carried rearwardly over the endless conveyer to a pug mill. The clay must pass beneath the roller and it will be obvious that said roller must be elevated according to the depth of the layer of clay on the conveyer. The valve is opened or closed by the relative elevation of this roller and thus the relative quantities of water and clay delivered into the pug mill will be accurately regulated. If it is desired to change the proportions of the ingredients the rod F^5 may be adjusted in the slotted arm F^3 .

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved clay tempering machine, comprising a suitable conveyer, a rock shaft mounted above the conveyer, one or more levers fixed thereto, a device on the end of the levers to engage the clay on the conveyer, a pipe connected with the machine and leading from a suitable source of water supply to discharge into the clay as it passes from the machine, a valve in said pipe and means connected with the said shaft for operating the valve, when the shaft is rocked, for the purposes stated.

2. An improved clay tempering machine comprising a suitable conveyer, means for placing clay on one end thereof, a roller supported above said conveyer and adapted to be elevated or lowered in proportion to the thickness of the layer of clay on the conveyer, a water supply pipe adapted to discharge into the clay as it passes from the conveyer, a valve in said pipe and means for connecting said valve with said roller to open the valve as the roller is elevated, and vice versa, for the purposes stated.

3. An improved clay tempering device comprising a suitable frame, an endless conveyer mounted thereon, means for operating the conveyer, a rock shaft mounted in suitable bearings above the conveyer, two arms fixed thereto, a roller mounted in their outer ends, means for rotating said roller, as set forth, a pipe leading from a suitable source of water supply to discharge into the clay as it leaves the conveyer, a valve in said pipe, an arm connected with said valve, a lever fixed to the aforesaid rock shaft and a rod connecting said lever and arm, for the purposes stated.

4. An improved clay tempering device comprising a suitable frame, an endless conveyer mounted thereon, means for operating the conveyer, a rock shaft mounted in suitable bearings above the conveyer, two arms fixed thereto, a roller mounted in their outer ends, means for rotating said roller as set forth, a pipe leading from a suitable source of water supply to discharge into the clay as it leaves the conveyer, a valve in said pipe, a segmental slotted arm fixed to said valve, a lever fixed to said shaft and a rod fixed to said lever and adjustably connected with the slotted arm for the purposes stated.

5. An improved clay tempering device, comprising a suitable frame, an endless conveyer mounted thereon, means for operating the conveyer, a rock shaft mounted in suitable bearings above the conveyer, two arms fixed thereto, a roller mounted in their outer ends, means for rotating said roller as set forth to normally rest upon the conveyer, a pipe leading from a suitable source of water supply to discharge into the clay as it leaves the conveyer, a valve in said pipe, a segmental slotted arm fixed to said valve, a lever fixed to said shaft and a rod fixed to said lever and adjustably connected with the slotted arm, a hopper supported above one end of the conveyer, side boards at the sides of the conveyer and means for adjustably supporting one of said side pieces above the conveyer, all arranged and combined substantially as, and for the purposes, stated.

WILLIAM F. COOK.

Witnesses:

E. L. BLAKE,
D. A. KREAMER.