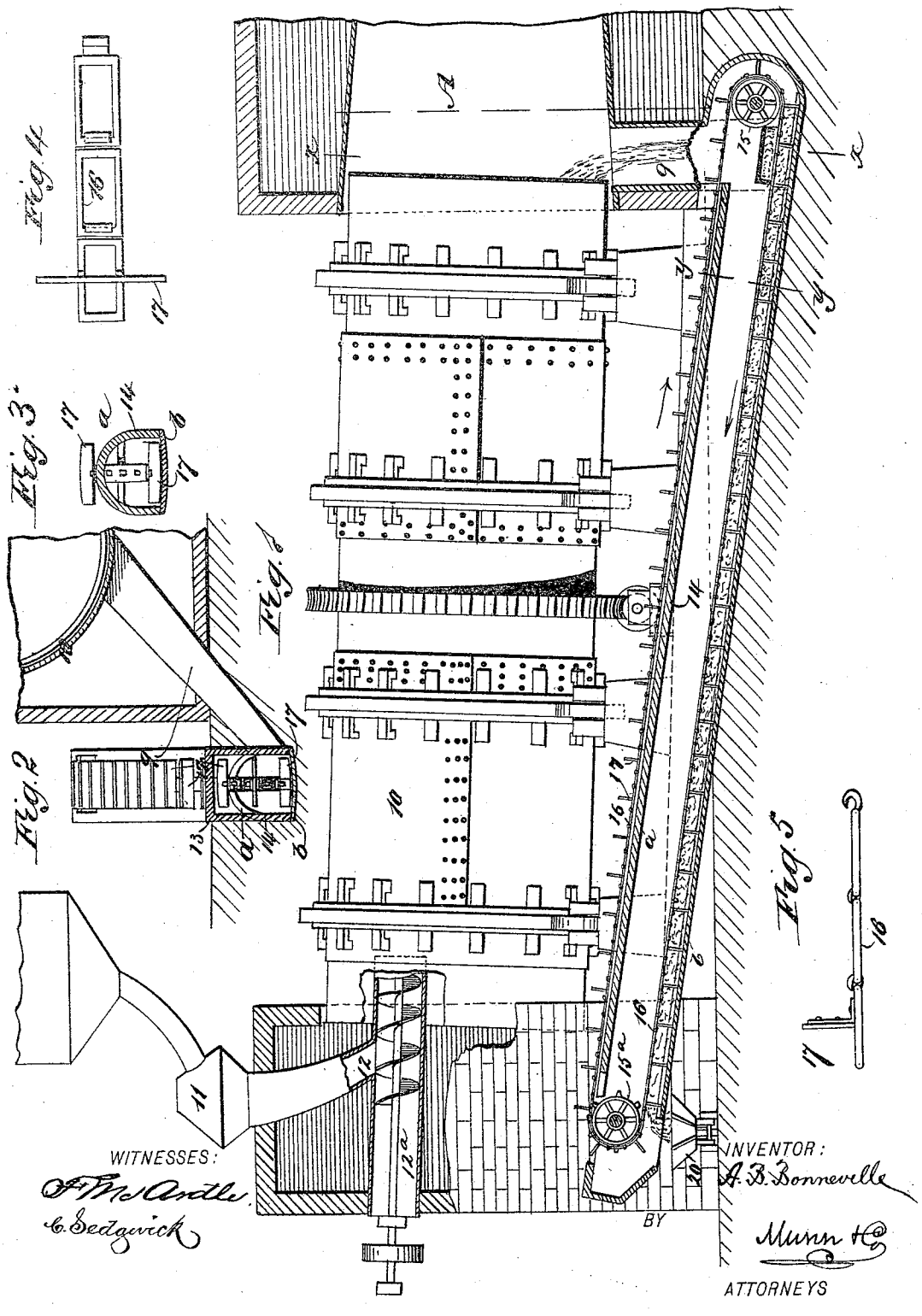
(No Model.)

A. B. BONNEVILLE.

CONVEYER.

No. 438,054. Patented Oct. 7, 1890.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AMABLE B. BONNEVILLE, OF ALLENTOWN, PENNSYLVANIA.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 438,054, dated October 7, 1890.

Application filed December 27, 1889. Serial No. 335,159. (No model.)

To all whom it may concern:

Be it known that I, AMABLE B. BONNEVILLE, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented a new and Improved Conveyer, of which the following is a full, clear, and exact description.

This invention relates to the construction of conveyers that are applicable for use in the movement of material that is to be or has been operated upon by a rotating calcining-cylinder; and to the end named the invention consists of certain novel constructions, arrangements, and combinations of elements, which will be hereinafter fully explained, and specifically pointed out in the claim.

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

Figure 1 is a side view of a calcining-cylinder, representing the same as it appears when provided with my improved conveyers, the walls of the conveyer-tunnel and the wheel-shafts being shown in section, and portions of the cylinder end casings being shown in section. Fig. 2 is a cross-sectional view on line *x x* of Fig. 1, the view being given upon a reduced scale. Fig. 3 is a cross-sectional view on line *y y* of Fig. 1. Fig. 4 is a detail view illustrating the construction of the conveyer-chain; and Fig. 5 is a side view of a portion of the conveyer-chain, the views 4 and 5 being upon an enlarged scale.

The invention is designed to provide a conveyer mechanism so arranged and combined with a calcining-cylinder as to overcome practical objections heretofore met with in the operation of such mechanisms. The main difficulty heretofore experienced has been the tendency of the conveyer to melt under the intense heat of the calcined product of the furnace, owing to the necessity of so conveying the material as to effect its gradual instead of a sudden cooling, by reason of which the contact of the hot material with the conveyer is necessarily prolonged.

In the drawings above referred to, 10 represents a calcining-cylinder of ordinary construction, the material to be calcined being fed to this cylinder by way of a hopper 11, chute 12, and conveyer 12^a, and being delivered from the cylinder to a pit 13 through a chute 9. A tunnel 14 leads from the pit 13, the upper portion *a* of said tunnel being of brick or ceramic ware, while the bottom *b* is of sheet metal. At one end of the tunnel I mount a chain-wheel 15, and at the other a corresponding wheel 15^a, such wheels serving as supports for a chain 16, which carries plates 17, the wheels 15 and 15^a being so mounted that the plates upon the lower length of the belt will bear closely upon the metallic bottom *b*, the upper length passing outside of the tunnel, as represented, whereby the chain is kept comparatively cool. Any proper driving mechanism is arranged in connection with the shaft and one of the chain-wheels, motion being imparted to said wheel, so that the chain belt and the plates carried thereby will be driven in the direction of the arrows shown in connection therewith. In this way all of the calcined material dropping into the pit 13 will be carried forward to the delivery end of the tunnel and cooled in its transit.

In practice I prefer to elevate the delivery end of the tunnel to provide for the introduction of a receiving-barrow 20, into which the calcined material is carried by the plates and labor thereby saved. In this way I provide for the ready handling of the calcined material and prevent any undue waste of the heat generated in the combustion-chamber A.

By the construction and arrangement above described the draft of the cylinder causes a suction of air through the tunnel from the delivery end thereof to the entrance end, through the chute 9, and thence to the cylinder, the current thus induced acting to gradually cool the calcined material in the tunnel, and also being utilized in its heated condition to aid in supporting combustion in the furnace combustion-chamber. Again returning the conveyer outside of the tunnel allows the former to become cooled. Thus the combined results of the current of air in the tunnel and the returning of the conveyer outside of its tunnel effectually prevents fusion of the conveyer while effecting the desired gradual cooling of the calcined material and while providing for the utilization of the air after leaving the tunnel.

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

The combination, with a calcining-cylinder and with the delivery-chute for the calcined material, of a current-creating tunnel to which said chute delivers, and a conveyer arranged to convey the material through said tunnel and returning outside thereof, substantially as described.

AMABLE B. BONNEVILLE.

Witnesses:
S. A. BUTZ,
EDUARD RUHE.