No. 710,574. Patented Oct. 7, 1902.

A. GROSSMANN.

AUTOMATICALLY CONTROLLED CONVEYER.

(Application filed Mar. 10, 1902.)

(No Model.)

Fig 1

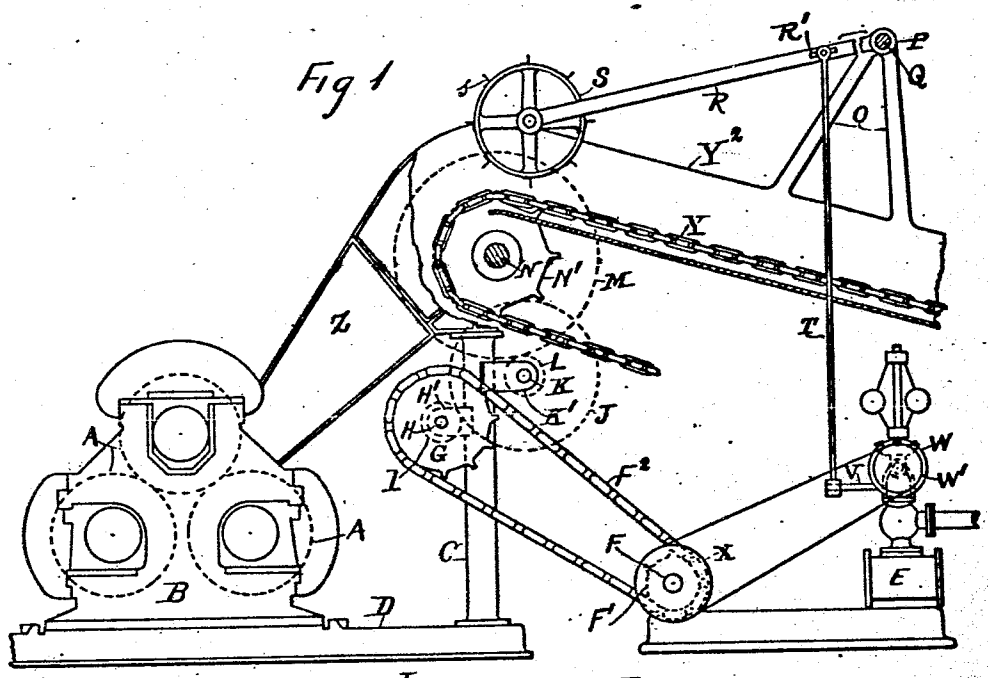
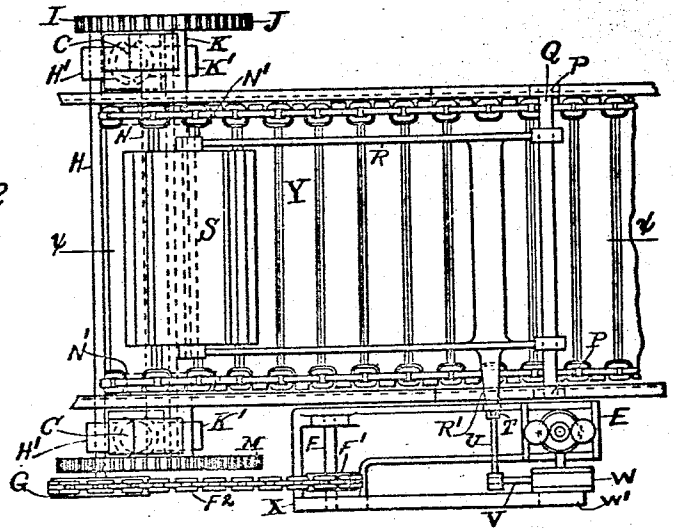


Fig 2



WITNESSES:

William P. Francl

Frank D. Livermore

INVENTOR

Albert Grossmann

BY A. A. de Bonneville ATTORNEY

UNITED STATES PATENT OFFICE.

ALBERT GROSSMANN, OF BROOKLYN, NEW YORK.

AUTOMATICALLY-CONTROLLED CONVEYER.

SPECIFICATION forming part of Letters Patent No. 710,574, dated October 7, 1902.

Application filed March 10, 1902. Serial No. 97,634. (No model.)

To all whom it may concern.

Be it known that I, ALBERT GROSSMANN, a citizen of the United States, and a resident of the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Automatically-Controlled Conveyers, of which the following is a specification.

This invention relates to means for propelling conveyers and automatically controlling the speeds thereof. Its object is the production of conveyers in which the velocity of propulsion is automatically controlled by the material conveyed and is inversely proportional to the volume or weight of the said material.

In this application my conveyer is shown applied to a cane-mill, to which it is specially applicable; but it is, however, capable of being used with various other apparatus.

Heretofore conveyers when used with the various forms of rolls, crushers, and the like have been geared thereto, and therefore constant or fixed relations between the speeds of the conveyers and the said rolls and the like have been unavoidable. Conveyers for cane-mills, crushers, and the like are not charged or loaded with any uniformity, portions of the same carrying little or no material, while other portions are often overloaded, by reason of which the said mills, &c., that run at speeds maintaining constant or fixed relations with the speeds of the conveyers are not uniformily fed, the conveyers in these cases being propelled by the driving motors, engines, and the like that run at constant speeds by the interposition of clutches which either compel the conveyers to run at one speed or to be stopped altogether. With my improvements the speeds of the conveyers are automatically increased when lightly loaded or decreased when overloaded, thereby bringing uniform charges to the rolls, and consequently insuring their efficient operation.

Figure 1 represents an elevation of a cane-mill with my automatic conveyer and appurtenances, partly in section, on line x x of Fig. 2. Fig. 2 shows a partial plan view of Fig. 1.

Referring to the drawings, the rolls A, with their adjustable bearings, are supported in the housing B. Stanchions C extend from the frame D and support one end of the conveyer Y and the gearing interposed between the said conveyer and the driving-engine E, a chute Z connecting the conveyer and the said rolls. The engine-shaft F carries a sprocket-wheel F', which is connected with the sprocket-wheel G by means of the chain F^2. A shaft H, turning in journal-boxes H', carries the said wheel G and a pinion I, which latter meshes with the gear J, supported on the shaft K, turning in journal-boxes K', the said shaft K carrying the pinion L, that meshes with the gear M on the conveyer driving-shaft N. Two sprocket-wheels N' are carried on the driving-shaft N to propel the conveyer Y, which comprises two chains connected by slats. Frames O extend from the casing Y^2 of the conveyer, and they terminate in journal-boxes P for the shaft Q, which latter supports a swinging frame R, with the roller S journaled in the free end thereof, constituting a regulator for controlling the speed of the driving-engine E, and consequently the conveyer Y. The roller S is shown with angles s projecting from its surface to grip the material conveyed, and it is evident that the regulator might be constructed in various ways to control the speed of the motor without departing from the spirit of the invention. It might be simply a movable cover or shoe bearing on the sugar-cane or other material carried by the conveyer. An arm R' extends from the frame R and carries a link T, that is pinned to a lever U, which actuates a spindle V, connected to a speed-changing pulley W, and a pulley W', extending from the latter, is driven by the pulley X on the shaft F of the engine by means of a belt connection. The speed-changing pulley is described in United States Patents Nos. 681,144 and 681,145, dated August 20, 1901, and it it evident that the movements of the spindle V, which are controlled by the material carried on the conveyer, govern the speed-changing pulley, and consequently the speed of the engine.

It will be evident that when the sugar-cane or other material passes from the conveyer Y into the chute Z, leading to the rolls A, the said cane acts on the regulator or roller S, raising it when large quantities are passing and lowering the same when small quantities

are conveyed. The movements of the regulator S being transmitted to its supporting-frame are by means of the linked connections communicated to the speed-changer to vary the speed of the engine E to suit the charge of cane on the conveyer, and consequently secure a uniform feed for the rolls.

It is evident that any suitable means to change the speed of the engine could be used, the said device being controlled by the movements of the regulator S, that is controlled by the material on the conveyer.

Having described my invention, I claim—

1. The combinatibn of a conveyer, an engine driving the conveyer, speed-regulating means connected up between the conveyer and the engine, the said means being controlled by the charges of material carried by the conveyer.

2. The combination of a conveyer, an engine driving the conveyer, a regulator with the conveyer and bearing on the material conveyed, connections between the said regulator and the said engine.

3. The combination of a conveyer, an engine driving the conveyer, a speed-changing device connected up with the engine, a regulator actuated by the material on the conveyer, connections between the regulator and speed-changing device.

4. The combination of a conveyer, an engine driving the conveyer, journal-boxes adjacent to the conveyer, a frame swinging in the said journal-boxes, a roller journaled to the free end of the swinging frame, connections between the swinging frame and the engine.

Signed at New York, in the county of New York and State of New York, this 27th day of February, A. D. 1902.

ALBERT GROSSMANN.

Witnesses:
THOMAS GRANT,
WALTER B. PIERSON.