

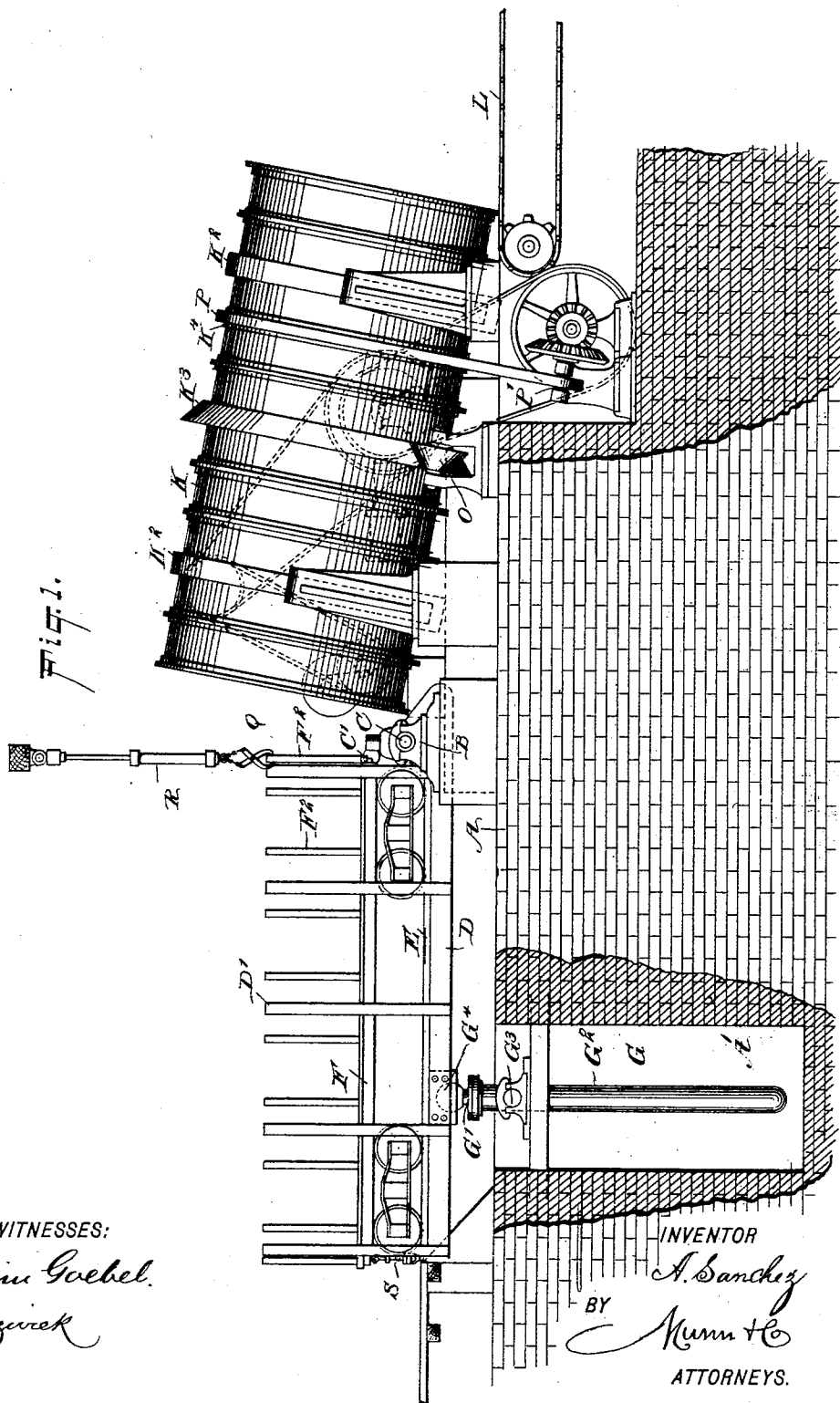
(No Model.)

4 Sheets—Sheet 1.

A. SANCHEZ.
SUGAR CANE TRANSFERRING DEVICE.

No. 520,271.

Patented May 22, 1894.



WITNESSES:

William Goebel.
C. Sedgwick

INVENTOR

A. Sanchez

BY

Munn & Co

ATTORNEYS.

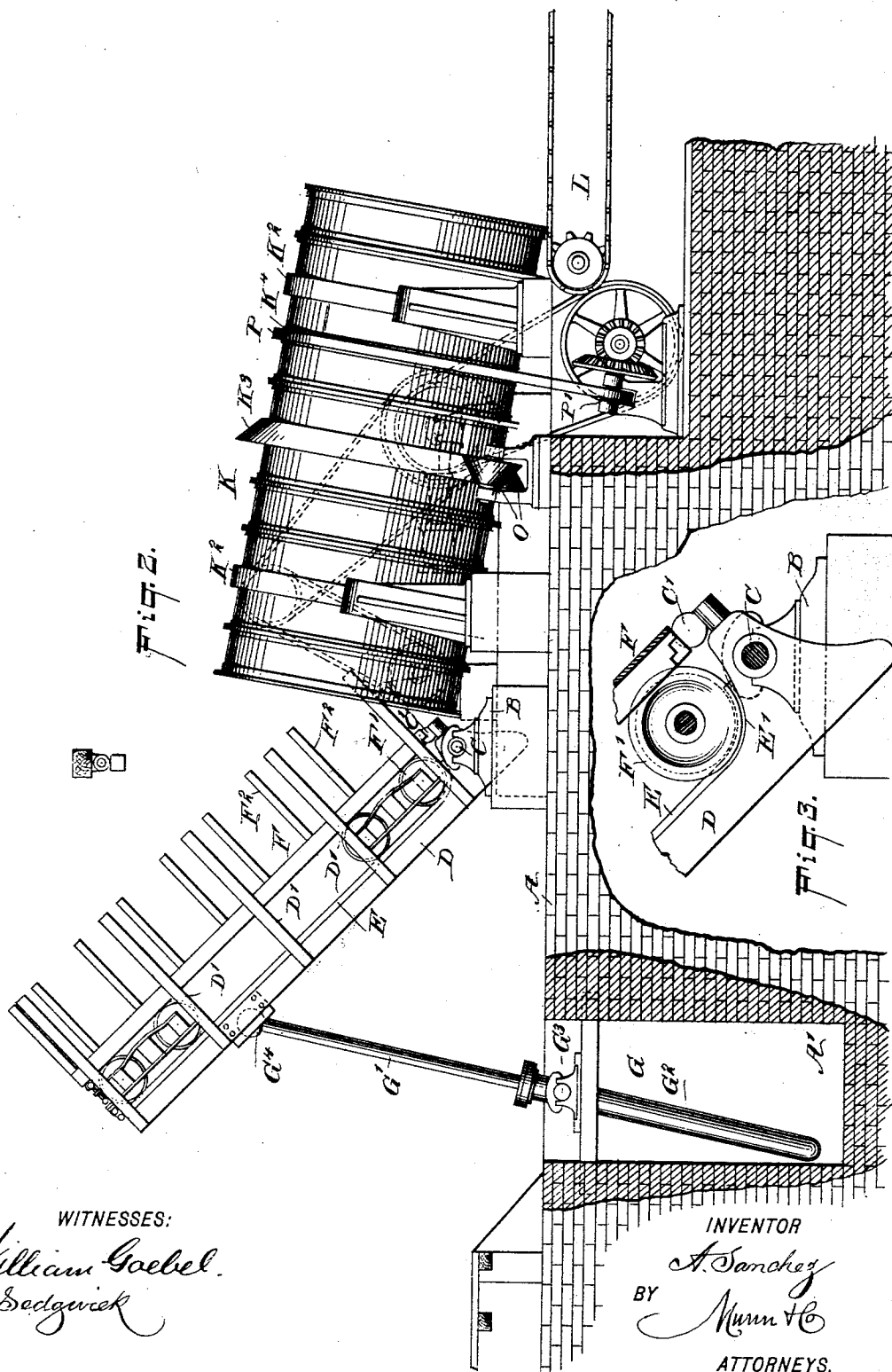
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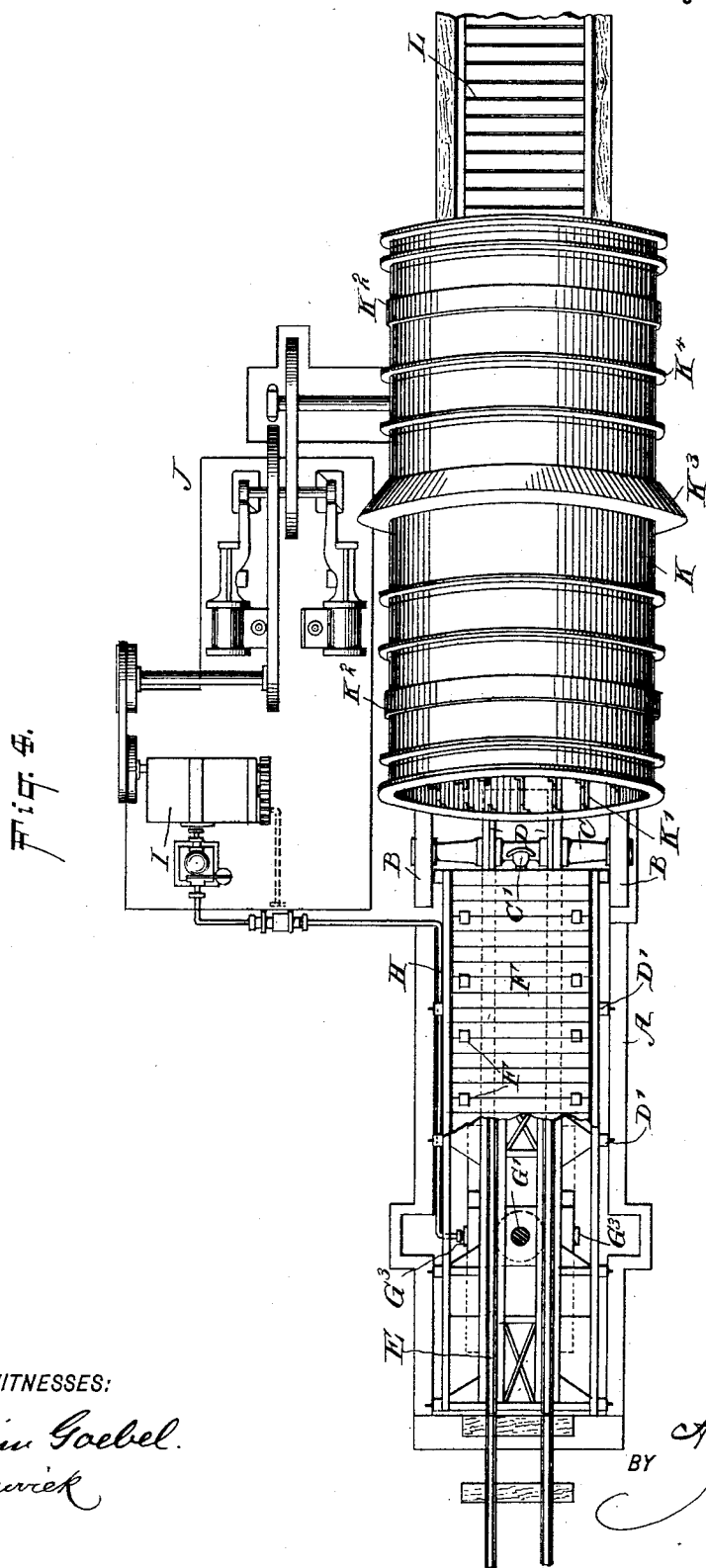
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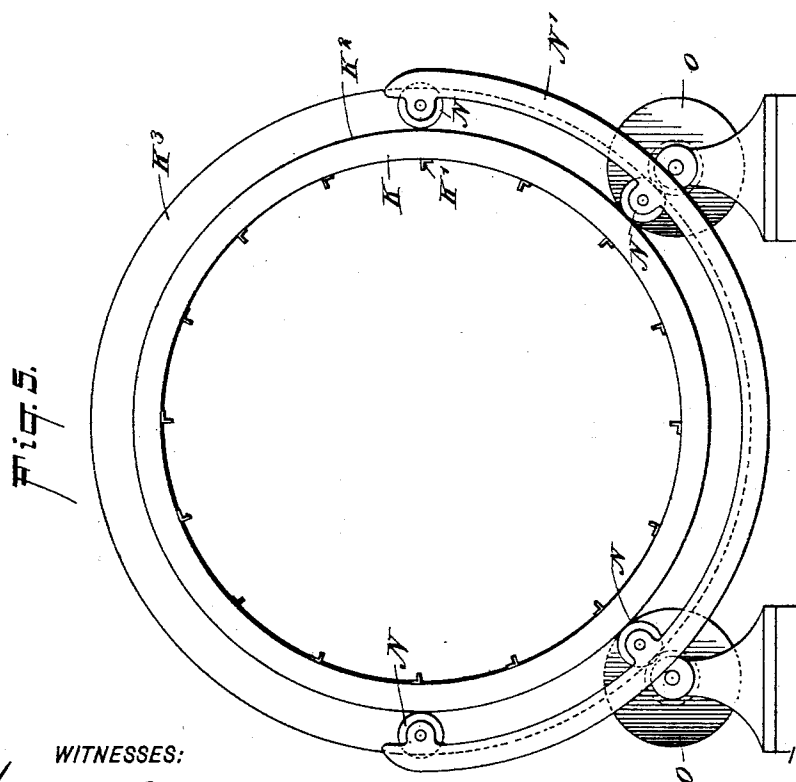
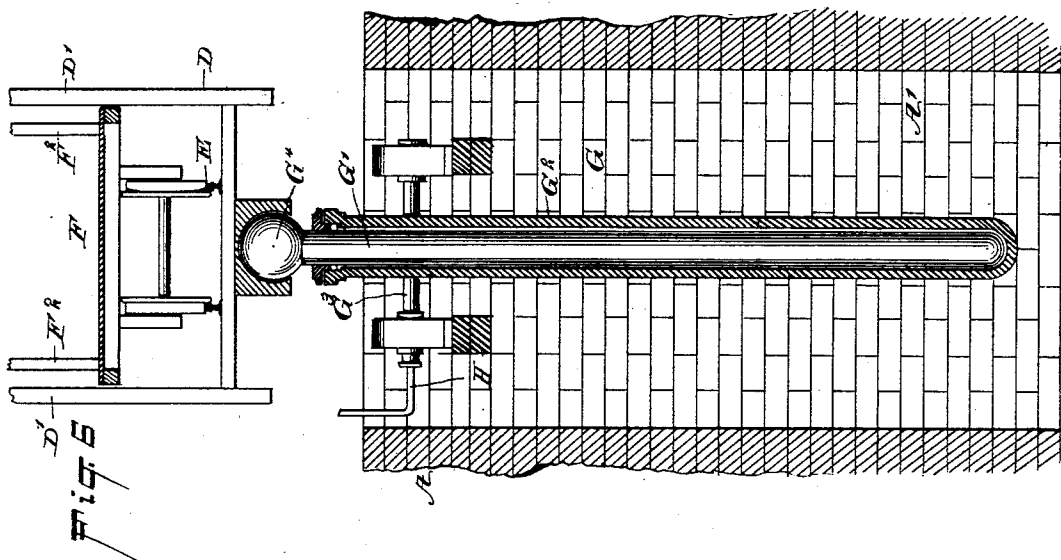
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UNITED STATES PATENT OFFICE.

ALBERTO SANCHEZ, OF GIBARA, CUBA.

SUGAR-CANE-TRANSFERRING DEVICE.

SPECIFICATION forming part of Letters Patent No. 520,271, dated May 22, 1894.

Application filed December 19, 1893. Serial No. 494,073. (No model.)

To all whom it may concern:

Be it known that I, ALBERTO SANCHEZ, a subject of the King of Spain, residing at Gibara, Cuba, have invented a new and Improved Sugar-Cane-Transferring Device, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved transferring device, which is comparatively simple and durable in construction, and more especially designed for conveniently and rapidly transferring sugar cane from cars to an endless carrier belt delivering the cane to the mill.

The invention consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

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

Figure 1 is a side elevation of the improvement, with parts broken out, and the platform and car in a normal horizontal position. Fig. 2 is a similar view of the same with the platform swung upward. Fig. 3 is an enlarged sectional side elevation of the pivoted end of the platform with part of the car in position. Fig. 4 is a plan view of the improvement. Fig. 5 is an enlarged end view of the cylinder and its support; and Fig. 6 is an enlarged transverse section of the car supporting platform and mechanism for actuating the same.

The improved transferring device is mounted on a suitable foundation A, supporting pillow blocks B, in which are journaled the ends of trunnions C, forming part of a platform D provided with two rails E, on which the car F carrying the sugar cane is run from the track on the ground. The forward ends of the track rails are curved upward, as at E', see Fig. 3, to form a stop for the front wheels F' of the car F.

On the trunnions C, near the middle thereof, is arranged one or several bumpers C', adapted to engage the forward end of the platform of the car, so as to hold the latter in place on the platform D whenever said platform is raised for dumping the cane con-

tained in the car, as hereinafter more fully described.

The sides of the platform D are provided with posts D', adapted to engage the sides of the platform of the car F, so as to prevent sidewise displacement of the latter at the time the car is raised. The car F is of the usual construction, and is provided with a platform and posts F², to hold the sugar cane in place on the car.

The free end of the platform D is connected with the upper end of the plunger G' of a lifting mechanism G, preferably of the hydraulic type and provided with a cylinder G², in which operates the said piston G', and which cylinder is mounted on trunnions G³ turning in suitable bearings arranged in a pit A', formed in the foundation A, and in which the said cylinder operates. The connection between the piston G' and the free end of the platform D is effected by a ball and socket joint G⁴, as is plainly indicated in Figs. 1, 2 and 6.

One of the trunnions G³ is made hollow and is connected by a pipe H with a pump I, of any approved construction and driven from the engine J, preferably arranged as indicated in Fig. 4, and of any approved construction. The pump I, forces a fluid under pressure into the cylinder G² so as to raise the piston G', to impart an upward swinging motion to the platform D, so as to cause the said platform and the car F supported on the platform to assume an inclined position, as is plainly indicated in Fig. 2. When the car F is in this position its load of sugar cane can readily be discharged or dumped into the upper end of an inclined cylinder K, open at both ends, the lower end discharging upon an endless carrier belt L, adapted to carry the cane to the mill, to be further treated in the usual manner.

The cylinder K is provided on its inner face with longitudinally extending ribs K', see Figs. 4 and 5, so that the material discharged into the upper end of the cylinder is agitated by the said ribs, to cause the cane to assume a longitudinal position and be finally discharged upon the carrier belt lengthwise, to be in proper position at the time it reaches the crushing rolls of the mill.

The cylinder K is provided with exterior

annular bands K², resting on friction rollers N, journaled in a segmental arm N' supported on the foundation A, as is plainly shown in Figs. 2 and 5. The cylinder K is also provided at or near its middle with the conical band K³, engaged at opposite sides of the cylinder by conical pulleys O journaled in suitable bearings erected on the foundation A. The base of the conical band K³ is toward the upper end of the cylinder K, and the bases of the conical pulleys O are in the opposite direction, so that the cylinder K is prevented from sliding downward. The said cylinder K is also provided with an annular band K⁴, over which passes a belt or sprocket chain P, also passing over a pulley P' driven from the engine J, it being understood that a suitable intermediate mechanism is employed to connect the said engine with the said pulley P'. Thus, when the engine is in motion, a slow rotary motion is given to the cylinder K, to rotate the same in its bearings on the rollers N, lengthwise motion of the cylinder being prevented by the band K³ and the conical pulleys O.

As previously stated, the car F carrying the load of sugar cane is provided with posts F² at the sides and ends thereof, but in order to permit the load to be dumped into the cylinder K at the time the platform D and car F are in an inclined position, as shown in Fig. 2, it is necessary to remove the posts F² at the front end of the car, to permit the load to slide off the platform of the car into the cylinder K. In order to do this I provide a gripping device Q, for each end post the said device being preferably made in the shape of gripping tongs, see Fig. 1, held on the lower end of a cylinder forming part of a hydraulic or other elevator R, to pull the said end posts F² out of their bearings in the platform of the car F, so that the load can be readily discharged into the upper end of the cylinder K whenever the platform D assumes an inclined position.

By reference to Figs. 1 and 2, it will be seen that the rear end of the car F is locked in place on the rear end of the platform D by a suitable fastening device S, so as to prevent the car F from leaving the platform D during the time the latter is swung upward and lowered.

The operation is as follows: When the platform D is in its lowermost horizontal position, as illustrated in Fig. 1, then the car F loaded with the sugar cane can be run onto the rails E of the said platform, and then the car is locked in place by the rear locking device S, it being understood that the front end of the car is held on the bumper C' and the upwardly curved ends E' of the track rails E. The tripping and lifting device Q then engages the posts F² at the front end of the car F, so as to remove the said posts from the car, after which the operator permits a fluid under pressure to pass from the pump I,

through the pipe H and hollow trunnion G³ into the cylinder G², to actuate the piston G', so that the latter slides upward and imparts a swinging motion to the platform D, until the latter with the car F, assumes the position shown in Fig. 2. As the front posts F² of the car F have been removed, the sugar cane on the platform of the said car will readily slide downward into the open upper end of the cylinder K, which is then revolved, and after the load has been discharged, the operator manipulates the pump I, so as to permit the piston G' to slide downward in the cylinder G² to again lower the platform D, until the latter assumes its normal horizontal position to permit the empty car F to be removed and a loaded one substituted to be again treated as above described. The sugar cane discharged into the upper end of the cylinder K is agitated by the longitudinal ribs K', so that the cane will assume a longitudinal position and finally be discharged at the lower end of the cylinder upon the carrier belt L, to be moved forward by the latter to the crushing rollers of the mill. As the hydraulic piston G' moves downward the fluid in the cylinder runs back through the supply pipe to the T-valve, from which the fluid passes to the usual storage tank for the pump, to be used over again by the pump as in all the ordinary hydraulic jacks. It will be seen that by this arrangement the cane requires no handling by forks or other means to remove the cane from the car onto the carrier belt to be carried to the crushing rolls of the mill.

The entire machine serves to dump the cane from the car F and to assort the cane so that it passes lengthwise upon the carrier belt L to be in the proper position for crushing at the crushing mill.

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

1. A sugar cane transferring device, comprising a pivoted platform on which the car to be unloaded is run, a lifting mechanism connected with the free end of the said platform, to swing the latter upward to dump the cane off the car held on the said platform, a revoluble cylinder arranged in an inclined position and having its upper open end in close proximity to the pivoted end of the said platform, so that the cane discharged from the said car passes into the said cylinder, and longitudinal ribs arranged within the said cylinder to straighten the cane discharged therein, substantially as shown and described.

2. A sugar cane transferring device, comprising a pivoted platform on which the car to be unloaded is run, a lifting mechanism connected with the free end of the said platform, to swing the latter upward to dump the cane off the car held on the said platform, a revoluble cylinder arranged in an inclined position and having its upper open end in

close proximity to the pivoted end of the said platform, so that the cane discharged from the said car passes into the said cylinder, longitudinal ribs arranged within the said cylinder to straighten the cane discharged therein, and a carrier belt upon which discharges the lower end of the said cylinder to carry the cane in an assorted condition to the crushing mills, substantially as shown and described.

3. A sugar cane transferring device, provided with a revoluble cylinder arranged in an inclined position, and supported upon friction rollers, a conical band held externally on the said cylinder, and conical pulleys engaging the said conical band the bases of the pulleys being in opposite direction to the bases of the bands to prevent endwise

movement of the cylinder, substantially as shown and described.

4. A sugar cane transferring device, provided with a revoluble cylinder arranged in an inclined position, friction rollers held in segmental arms and adapted to engage annular bands on the said cylinder, a conical band held externally on the said cylinder, conical pulleys engaging the said conical band the bases of the pulleys being in opposite direction to the bases of the bands to prevent endwise movement of the said cylinder, and means, substantially as described, for imparting a rotary motion to the cylinder, as set forth.

ALBERTO SANCHEZ,

Witnesses:

NARCISO TAULER,
DIEGO V. QUINTERO.