April 27, 1937. I. D. McCAULEY 2,078,599

CEMENT SACK OPENING DEVICE

Original Filed March 31, 1934 2 Sheets-Sheet 1

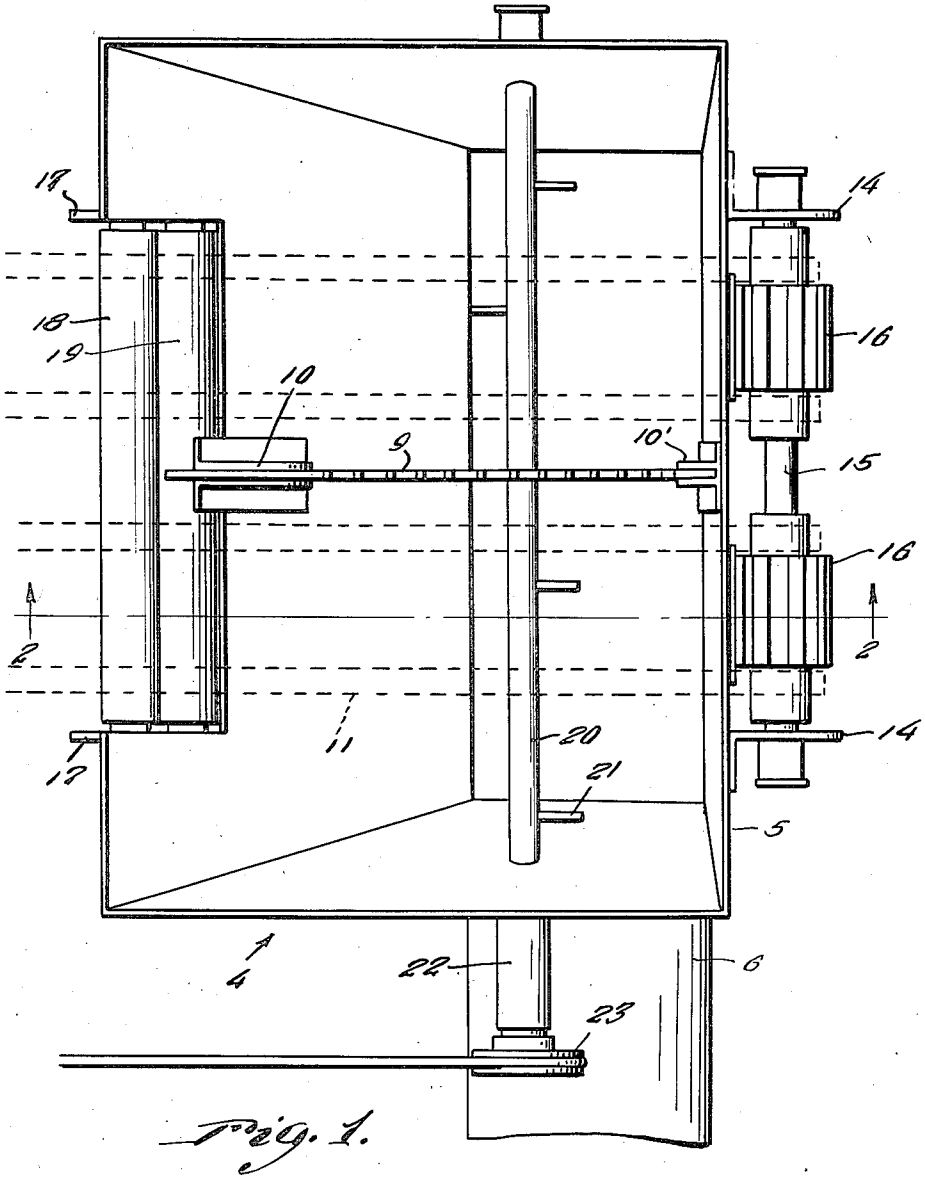


Fig. 1.

Inventor

Irwin D. McCauley

By Clarence O'Brien

Attorney

April 27, 1937. I. D. McCAULEY 2,078,599

CEMENT SACK OPENING DEVICE

Original Filed March 31, 1934 2 Sheets-Sheet 2

Fig. 2.

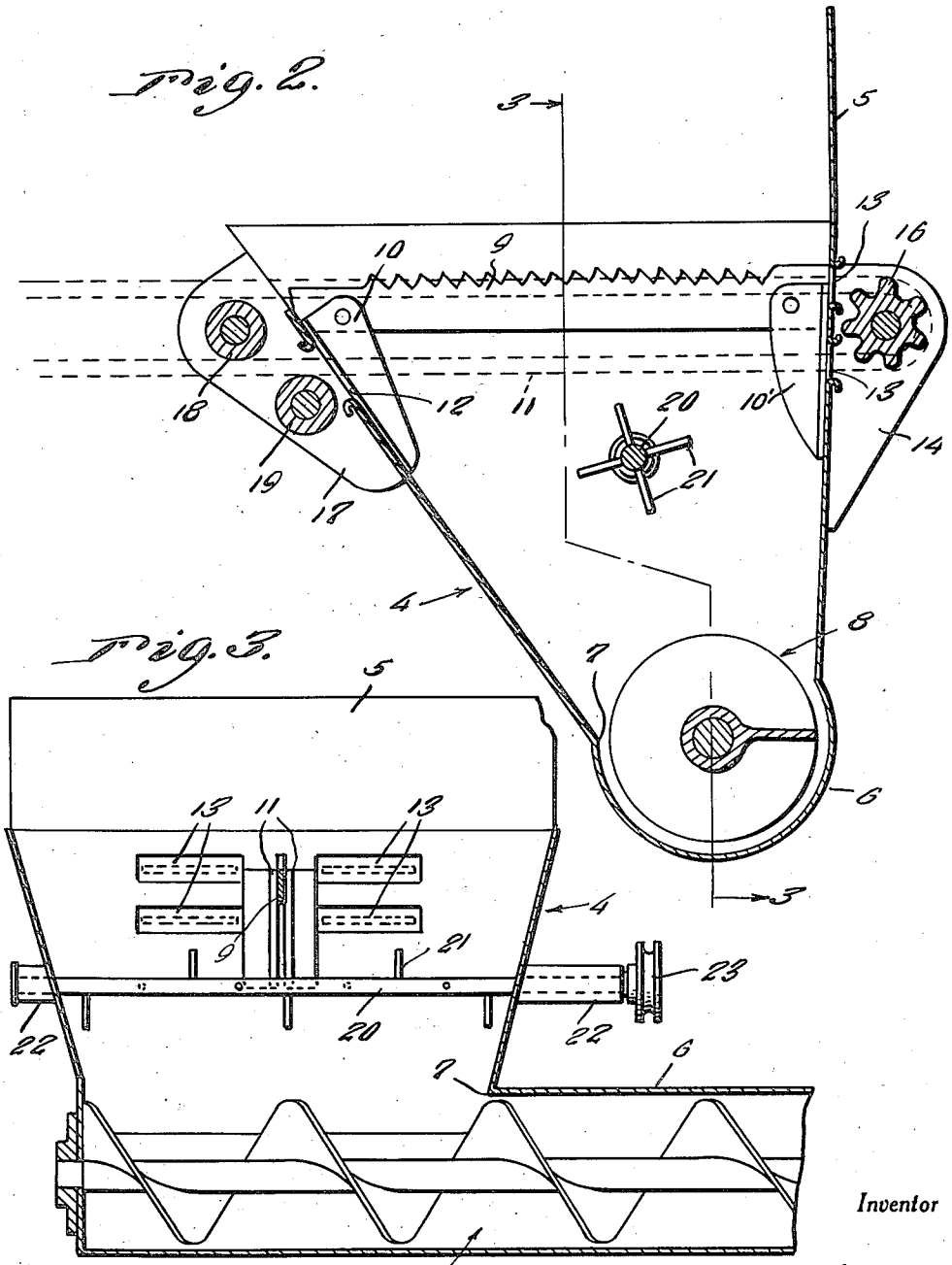


Fig. 3.

Inventor

Irvin D. McCauley

By Clarence A. O'Brien

Attorney

Patented Apr. 27, 1937

2,078,599

UNITED STATES PATENT OFFICE

2,078,599

CEMENT SACK OPENING DEVICE

Irvin D. McCauley, Arp, Tex., assignor of one-half to George L. Blaxton, Shreveport, La.

Refiled for abandoned application Serial No. 718,481, March 31, 1934. This application June 16, 1936, Serial No. 85,607

5 Claims. (Cl. 214—1)

This application is refiled for abandoned application Serial No. 718,481, filed March 31, 1934.

This invention relates to a device susceptible of operable connection with a transporting truck or similar conveyance and expressly designed for the purpose of opening cement sacks, bags and analogous material containing packages.

As above implied the device is preferably constructed in the form of an attachment to an oil well cementing truck so as to provide a handy and dependable means enabling a single attendant to satisfactorily saw open a cement containing sack to permit the contents thereof to be dumped into a hopper and conveyed by appropriate means to the point of use.

Briefly stated the preferred embodiment of the invention includes a hopper equipped with a stationary toothed saw, an endless conveyor for bringing the cement bags and sacks into cutting position in relation to the saw and a collection hopper and conveyor means for handling the material as it is discharged from the sack.

Other features and advantages of the invention will become more readily apparent from the following description and the accompanying drawings.

In the drawings wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a top plan view of the complete device as constructed in accordance with the principles of the present invention and showing the conveyor chains in dotted lines.

Figure 2 is a vertical or transverse sectional view taken approximately on the plane of the line 2—2 of Figure 1.

Figure 3 is a view taken on the plane of the irregular line 3—3 of Figure 2.

In the drawings the hopper, which may be of appropriate proportions and shape, is denoted by the numeral 4. It will be noticed that the back wall thereof is provided with an extension 5 which serves as a guard or stop plate for the cement bag, sack or other container being opened at the time. The material, generally cement, sand or the like is dumped into the hopper and gravitates into a tubular conveyor casing 6 by way of the inlet opening 7. An appropriate screw conveyor, suitably driven is mounted in this casing, the conveyor being denoted by the numeral 8.

The saw is indicated by the numeral 9 and is rigidly mounted between brackets 10 and 10' attached to the interior of the hopper at a suitable elevation. The saw is preferably centrally arranged so as to be in proper position to cut or slit the bag as it is drawn thereacross through the aid of the conveyor chains. The conveyor chains are denoted by the numerals 11 and extend through an opening 12 in the front wall of the hopper and through accommodation slots 13 in the rear wall. On the exterior of the rear wall I provide supporting brackets 14 for a rotary shaft 15 carrying sprockets 16 cooperable with the conveyor chains. On the front wall adjacent the guide slot are outstanding supporting brackets 17 for guide rollers 18 and 19 cooperable with the chains of the conveyor.

The numeral 20 designates an agitator shaft provided with agitating elements or pins 21 and mounted in suitable bearings 22 and provided with a pulley or equivalent element 23 for convenient operation by a belt or the like.

In practice the loaded bag is simply placed on the motor driven conveyor chains and is fed in the direction of the hopper 4. As the bag rides across the stationary saw 9 it is obvious that it is cut or slit open, allowing the contents to drop down into the hopper and to be carried out by the screw conveyor 8. The rotation of the agitator 20 prevents clogging. Hence it is possible for a single attendant or workman to manipulate the device for successful and expeditious results.

The gist of the invention is found in the provision of a suitably shaped conveyor equipped hopper having appropriate discharge means and a stationary saw, and internal agitator means to prevent clogging. Then too specific novelty is predicated upon the stop plate 5 formed as a part of the hopper to prevent displacement of the bag and to facilitate handling of the device by the workman. Moreover the combination of the conveyor and operating means located in a plane with a stationary saw 9 appears to be an efficient development.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in shape, size, and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

What is claimed is:—

1. An apparatus for opening and dumping cement from bags, comprising a hopper, a centralized horizontally disposed bag opening saw rigidly mounted in the upper portion of the hopper, bag conveying means connected with said hopper, and

disposed parallel to and alongside of said saw, and a stop plate for the conveyed bags, said stop plate extending from the rear wall of the hopper.

2. An apparatus for opening and dumping cement from a disruptable cement-containing bag comprising a hopper constituting a receiver for the cement, a bag opening saw rigidly mounted in the upper portion of the hopper in a plane substantially even with the upper open end of said hopper, bag conveyors operatively supported on the hopper and located in parallelism on opposite sides of the saw, and bag abutment and guard means located at one end of the saw and serving to expedite retrieving the bag and to further insure effective cutting of the bag.

3. In a structural assemblage of the class described, a cement trapping hopper open at its top, a pair of spaced parallel bag delivery conveyor chains mounted on said hopper and movable across the open top thereof, a rigid bag cutting saw mounted in the upper open portion of the hopper and located between said chains to allow the chains to simultaneously support the bag and to move it in a direction parallel to the longitudinal axis of the saw to cut the bag open over the hopper and to allow the contents to drop into the hopper.

4. In a structural assemblage of the class described, a cement trapping hopper open at its top, a pair of spaced parallel bag delivery conveyor chains mounted on said hopper and movable across the open top thereof, a rigid bag cutting saw mounted in the upper open portion of the hopper and located between said chains to allow the chains to simultaneously support the bag and to move it in a direction parallel to the longitudinal axis of the saw to cut the bag open over the hopper and to allow the contents to drop into the hopper, one wall of said hopper at one end of said saw being provided with an upstanding stop plate to limit the travel of the bag and to insure effective severing thereof.

5. In a structure of the class described, a material receiving hopper open at its top and including front, rear, and connecting end walls, said rear wall being provided with an upstanding slotted bag stopping plate, a roller mounted for rotation on said rear wall within the vicinity of the slot, said roller being provided with chain-operating sprockets, a pair of horizontally disposed complemental chain guiding rollers mounted on the front wall of the hopper, a pair of bag conveying chains cooperable with said front guide rollers and extending through the slots in the stop plate on the rear wall and engageable with said sprockets, said chains being disposed in spaced-apart parallelism, and a rigid bag cutting saw supported between the front and rear walls of the hopper and located between said chains in the manner and for the purposes described.

IRVIN D. McCAULEY.