

No. 772,957.

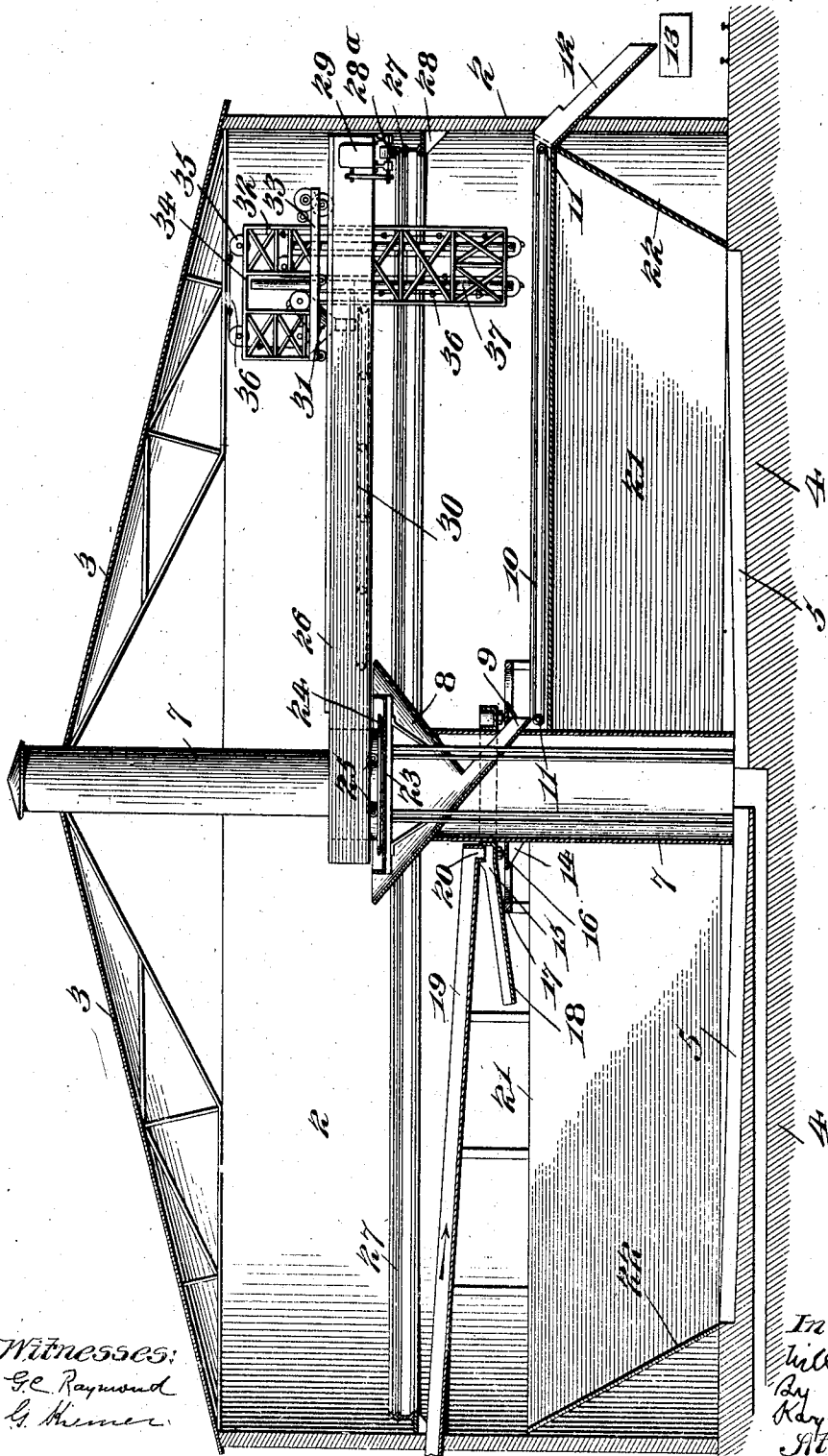
PATENTED OCT. 25, 1904.

W. J. PATTERSON.
COAL STORAGE PLANT.

APPLICATION FILED JULY 20, 1903. RENEWED SEPT. 21, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
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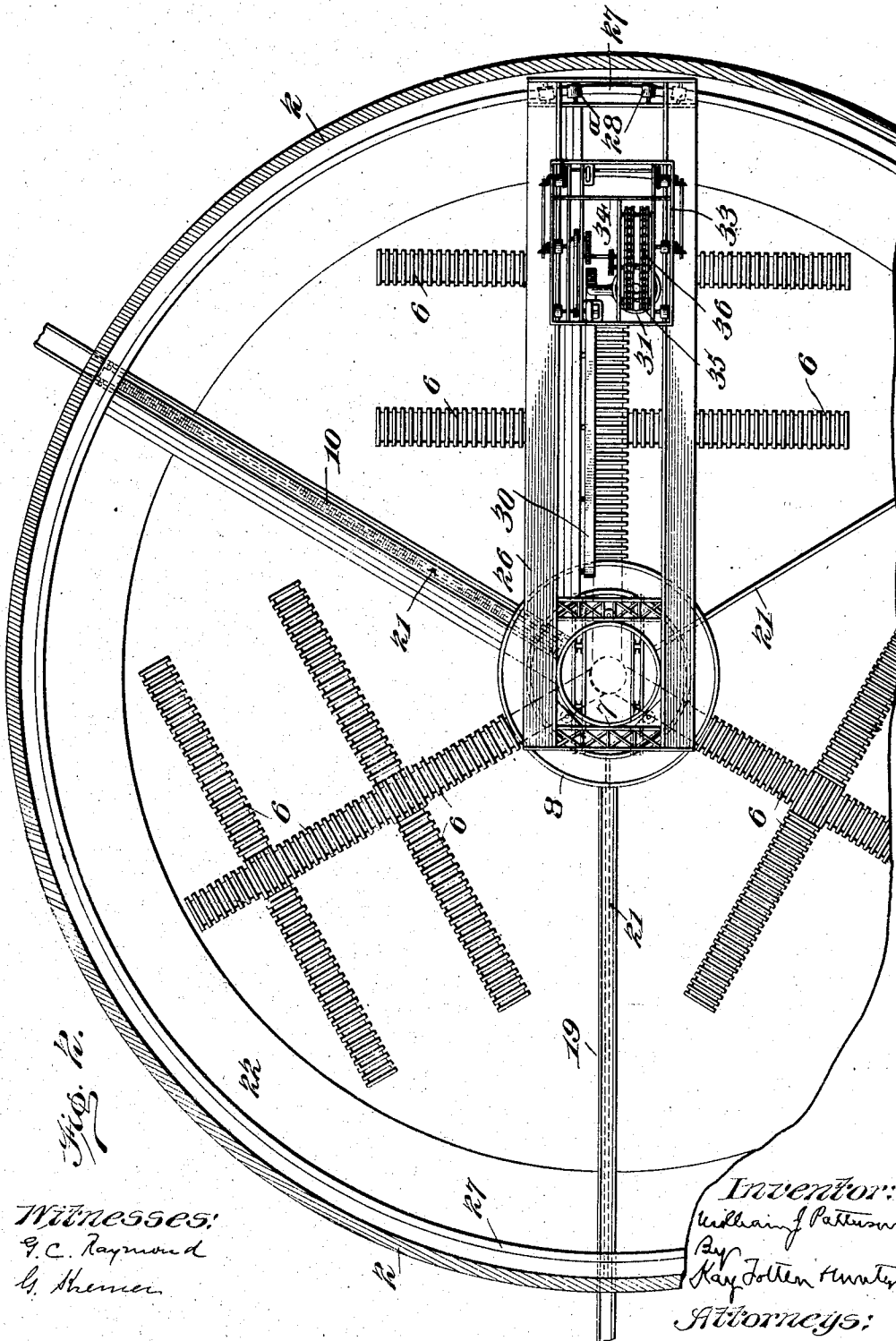
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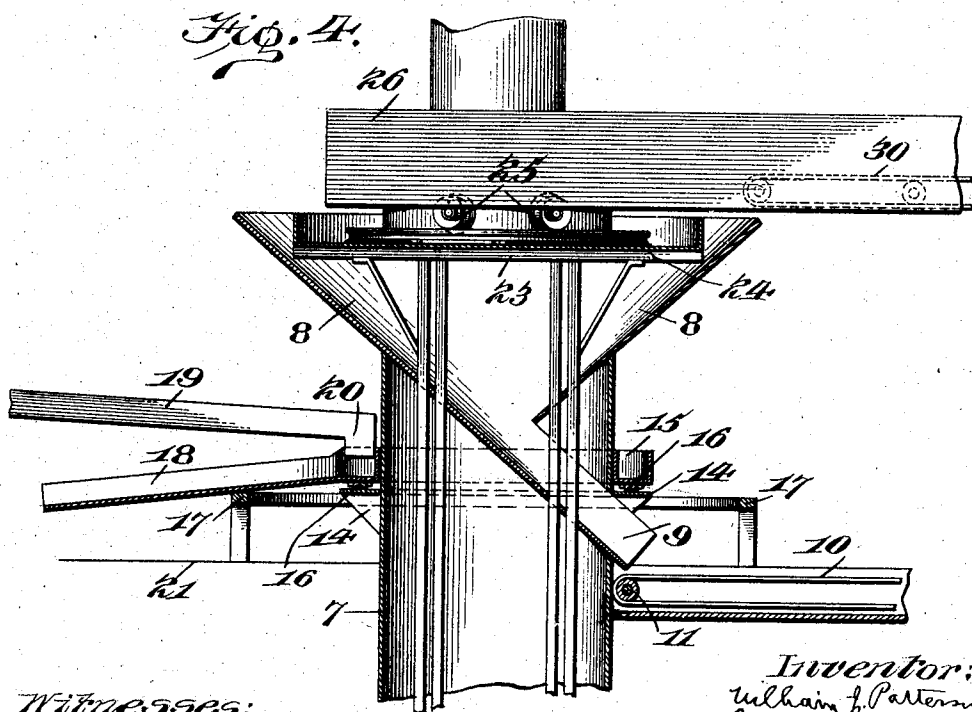
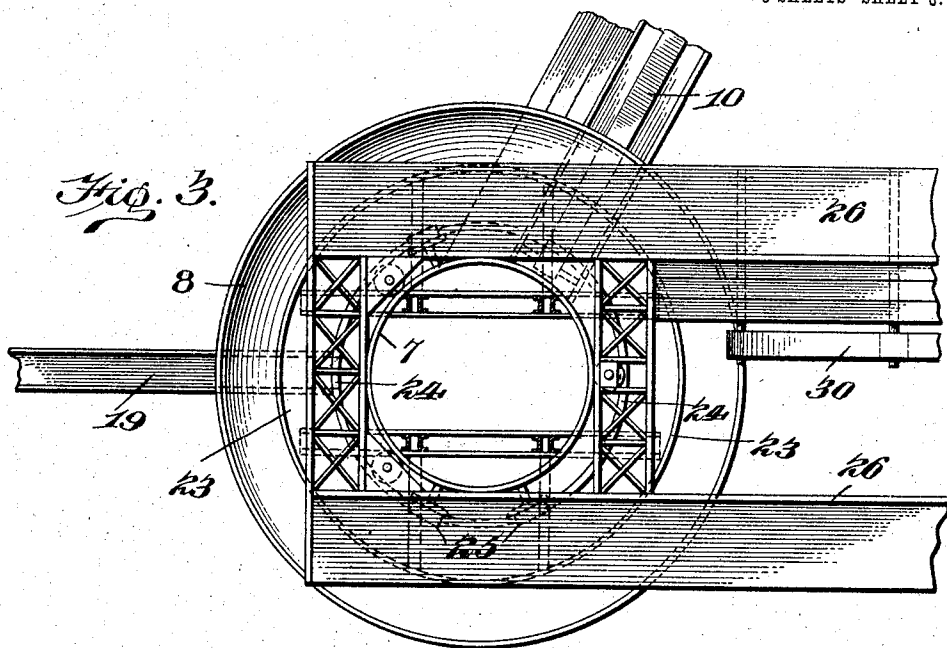
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UNITED STATES PATENT OFFICE.

WILLIAM J. PATTERSON, OF PITTSBURG, PENNSYLVANIA.

COAL-STORAGE PLANT.

SPECIFICATION forming part of Letters Patent No. 772,957, dated October 25, 1904.

Application filed July 20, 1903. Renewed September 21, 1904. Serial No. 225,306. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. PATTERSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Coal-Storage Plants; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to coal or like storage plants, its object being to provide for the storage of coal or other material within a suitable space and its ready removal therefrom from time to time, as may be desired, to be loaded upon cars for transportation.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of a coal-storage plant embodying my invention. Fig. 2 is a plan view, the bin employed being shown in section. Fig. 3 is an enlarged plan view of the central support and the horizontally-movable frame, partly broken away, extending out therefrom, with the conveying mechanism carried thereby; and Fig. 4 is an enlarged sectional elevation of the central support and the arrangement of chutes, &c., for the distribution of the coal or other material.

Like numerals indicate like parts.

In the drawings the numeral 2 designates a suitable tank or bin preferably circular in form and provided with the roof 3, said tank being supported upon a suitable foundation 4, of brick, cement, or other suitable material. It will be apparent that my invention may, however, be employed in connection with a simple storage-platform, if so desired. The floor 4 is provided with conduits 5 for carrying off any water or moisture which may drain from the coal, said conduits being provided with gratings 6. Any suitable arrangement of these conduits may be employed for draining off any such water or moisture.

At or about the center of the bin 2 is the support or pillar 7, which supports the hopper 8, said hopper having the chute 9 projecting out from the bottom thereof and through the walls of the pillar 7. In line with said chute 9 is the conveyer 10, mounted on sheaves or pulleys 11, adapted to be driven by any suitable source of power, said conveyer being adapted to receive material com-

ing from the chute 9 and convey the same to the chute 12, adapted to discharge the material into a suitable car 13.

The pillar or support 7 has the shelf or bracket 14 encircling it, said shelf forming a track or support for the rotary trough 15, said trough having the wheels 16, traveling on said bracket 14. An outer frame 17, encircling the shelf 14, is adapted to support the spout 18 of the trough 15. The trough 15 is connected up to the inlet-chute 19, which enters the walls of the bin 2 at a suitable point and has the downwardly-projecting end 20, adapted to fit within the trough 15, so as to discharge the material entering the bin into the trough 15, whence it is conveyed by the spout 18 into the different compartments of the bin 2. For this purpose the bin may be divided by the partition-walls 21 into any suitable number of compartments, said compartments having the inclined outer walls 22. By this construction the rotary trough 15 may be rotated so as to bring the spout 18 into position to discharge the material into any one of the compartments, as fully hereinafter set forth.

Within the support or pillar 7 is the frame 23, which supports the circular track 24. Upon this track 24 travel the wheels 25 of the horizontally-movable frame 26. This frame 26 is supported at its outer end upon the track 27, supported upon the shelf 28, encircling the inner walls of the bin 2, said frame 26, having the rollers 28^a, adapted to travel on said track, and a motor 29 for imparting power to said frame.

Mounted within the frame 26 is the conveyer 30, said conveyer being in proper position with reference to the hopper 31 of the elevating conveyer 32, so as to receive the material from said hopper and convey it to the central hopper 8, whence it is discharged into said hopper 8 and passes therefrom onto the conveyer 10. Any suitable mechanism may be employed for driving the conveyer 30. The conveyer 32 forms no part of my present invention, but forms the subject-matter of an application filed by me on the 5th day of February, 1903, Serial No. 141,958. Accordingly I have not illustrated said con-

veyer in detail; but it consists generally of the carriage 33, adapted to travel upon suitable tracks on the frame 26, said carriage supporting the frame 34, within which are
 5 suitable pulleys 35, over which the conveyer-chain 36 passes, said carriage being provided with a suitable motor for operating the conveyer-chain. The device is provided with the telescopic members 37, forming one of
 10 the legs of the elevator, and mechanism connected to the lower member of the telescoping device for raising and lowering the downwardly-extending loop of the conveyer-chain. By a device of this character the conveyer-
 15 chain may be lowered into the bin and the coal conveyed by said conveyer up into the frame and discharged into the hopper 31, all as hereinafter set forth.

The coal or other material mixed with water is discharged into the inlet - chute 19, whence it passes into the circular trough 15 to be discharged by means of the spout 18 into the compartment of the bin opposite which said spout 18 is located. When this compartment has been filled, the circular trough 15 is
 25 rotated until the spout 18 is brought into proper position with reference to the next compartment to be filled, whereupon the material is introduced by the chute 19. In this
 30 manner the several compartments of the bin may be filled with different grades of material, or the material may be distributed evenly into the different compartments. When it is desired to remove any of the material from
 35 any of the compartments, the frame 26 is brought around into proper position with reference to the compartment to be drawn from, whereupon the conveyer 32 is put into operation, one of the loops of the conveyer-chain
 40 being lowered into the bin and when put in operation will act to raise the coal from the compartment and carry it up to be discharged upon the conveyer 30, whence it passes by the hopper 8 to the chute 9 and onto the conveyer
 45 10 to be carried and discharged into the car 13. The conveyer 32 is gradually moved along toward the center of the bin until it has removed a layer or section of coal evenly from the top of the compartment, when its propelling
 50 apparatus may be reversed and the conveyer carried back to begin again, the loop of the conveyer being lowered to correspond to the reduced height of the coal in the compartment. In this manner the compartment
 55 may be entirely emptied or such a quantity taken from it as desired, whereupon the frame 26 may be moved around to another compartment and the coal taken therefrom. There being a common central hopper 8, into which
 60 the material taken up from the several compartments is discharged, the coal from any compartment is discharged onto the common conveyer 10 and taken to the point of loading.

By the above construction I obtain a very
 65 simple and convenient form of storage plant

into which the material may enter from a common inlet and be properly distributed within the bin or upon a storage-platform, while at the same time the material may be readily removed by discharging the same into
 70 a common central hopper.

What I claim is—

1. In a coal or like storage plant, the combination of a suitable circular storage-platform, a stationary hopper supported above
 75 said platform at or adjacent to the center thereof, a horizontally-arranged endless conveyer in proper position with reference to the outlet of said hopper, said conveyer extending to the outer edge of said platform, and mechanism
 80 for lifting the coal from said platform and discharging the same into said hopper.

2. In a coal or like storage plant, the combination of a suitable storage-platform, a hopper supported above said platform at or about
 85 the center thereof, a rotary frame supported at or about the center of said platform and extending out toward the outer edge thereof, mechanism carried by said frame for lifting coal from said platform and discharging the
 90 same into said hopper, and an endless conveyer in proper position with reference to the outlet of said hopper, said conveyer extending toward the outer edge of said platform.

3. In a coal or like storage plant, the combination of a suitable storage-platform, a hopper supported above said platform at or about
 95 the center thereof, a rotary frame supported at or about the center of said platform and extending out toward the outer edge of said platform, a circular elevated support adjacent to the outer edge of said platform upon which
 100 the outer end of said frame travels, mechanism carried by said frame for lifting the coal from said platform and discharging the same into said hopper, and an endless conveyer in proper position with reference to the outlet
 105 of said hopper, said conveyer extending to the outer edge of said platform.

4. In a coal, or like, storage plant, the combination of a suitable circular bin having two,
 110 or more, compartments, a hopper supported within said bin, at or adjacent to the center thereof, said hopper communicating with a common outlet in the walls of said bin, and
 115 mechanism for discharging the coal into said hopper.

5. In a coal, or like, storage plant, the combination of a suitable storage platform, an unobstructed rotary trough horizontally supported above said platform and having a discharge-outlet, and means for directing the entering coal into said trough.
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6. In a coal, or like, storage plant, the combination of a suitable storage-platform, an unobstructed circular trough supported above
 125 said platform and having a discharge-outlet, and means for directing the entering coal into said trough.

7. In a coal, or like, storage plant, the com-
 130

5 bination of a suitable storage-platform, an unobstructed rotary trough, supported above said platform, a spout leading from said trough onto said platform, and means for directing the entering coal into said trough.

10 8. In a coal, or like, storage plant, the combination of a suitable storage-platform divided into two or more compartments, an unobstructed circular rotary trough supported above said platform, means for discharging the coal from said trough into one of said compartments, and means for directing the entering coal into said trough.

15 9. In a coal, or like, storage plant, the combination of a suitable storage-platform, a circular track or support above said platform, an unobstructed circular trough with wheels running on said track, said trough having a discharge-outlet, and means for discharging the entering coal into said trough. 20

In testimony whereof I, the said WILLIAM J. PATTERSON, have hereunto set my hand.

WILLIAM J. PATTERSON.

Witnesses:

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G. C. RAYMOND.