F. S. CONVERSE.

ROTARY COAL SCREEN.

APPLICATION FILED MAY 4, 1911.

1,079,543.

Patented Nov. 25, 1913.

3 SHEETS—SHEET 1.

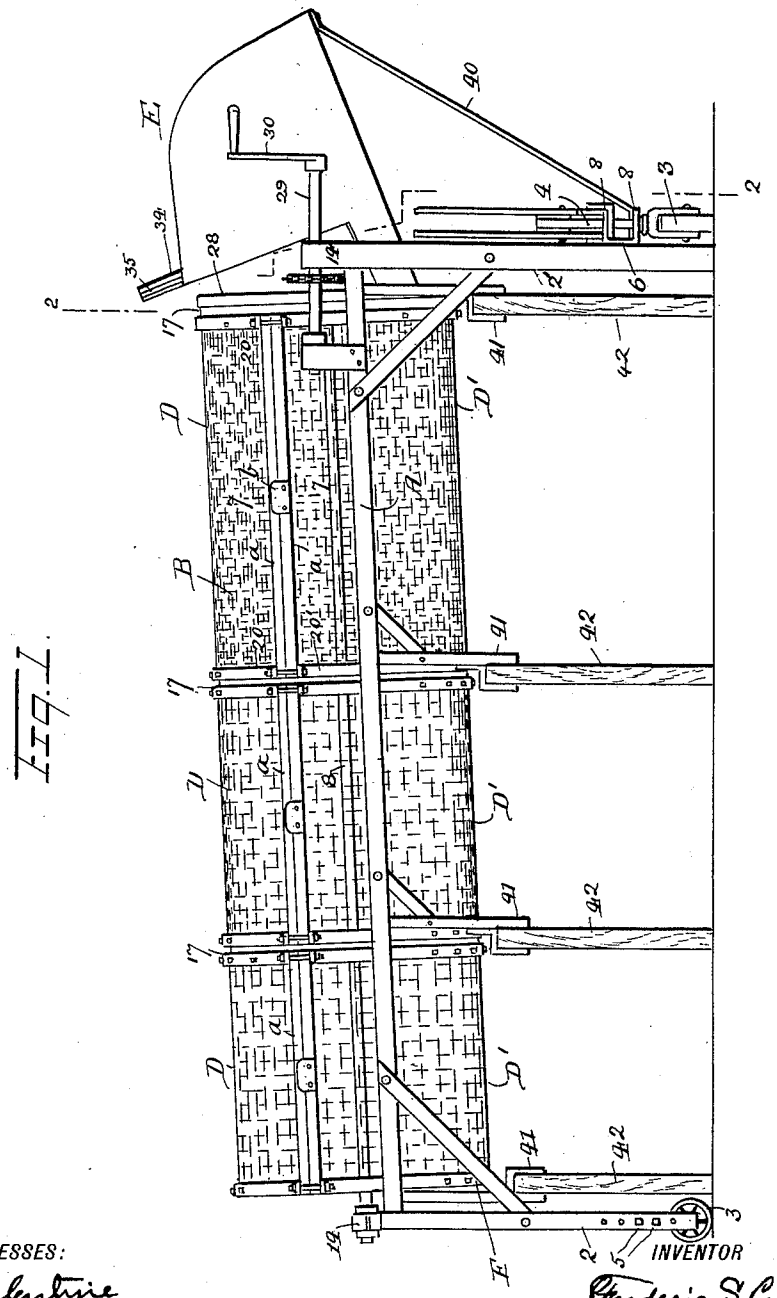


FIG. 1.

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3 SHEETS—SHEET 2.

Fig. 2.

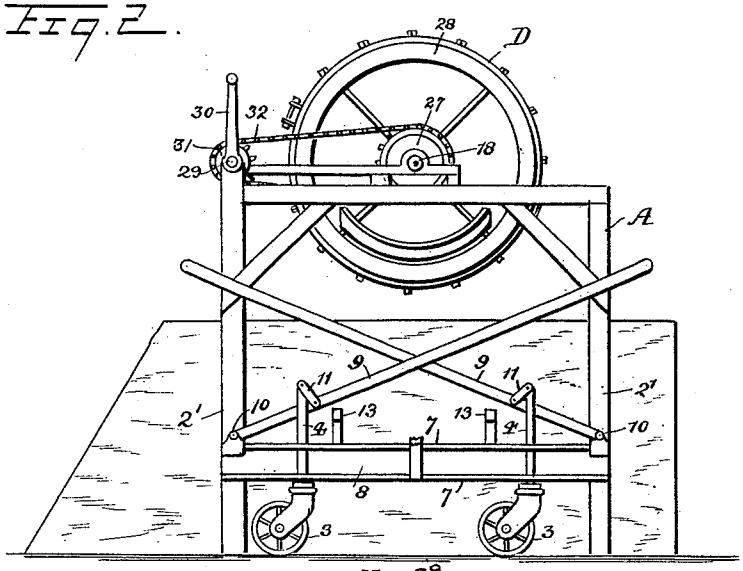
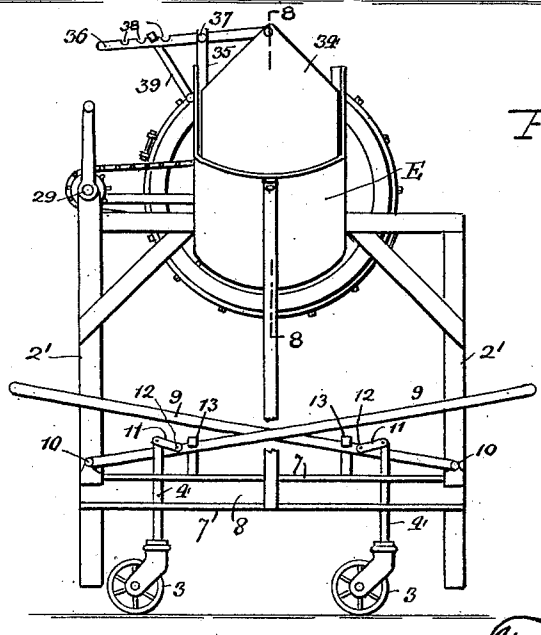


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

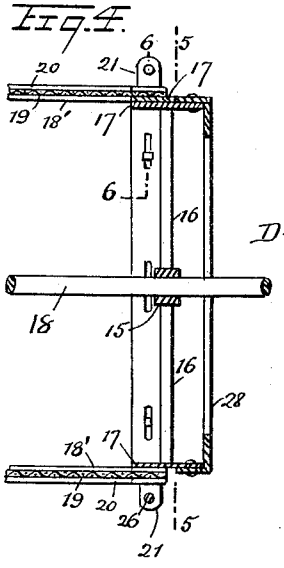


Fig. 5.

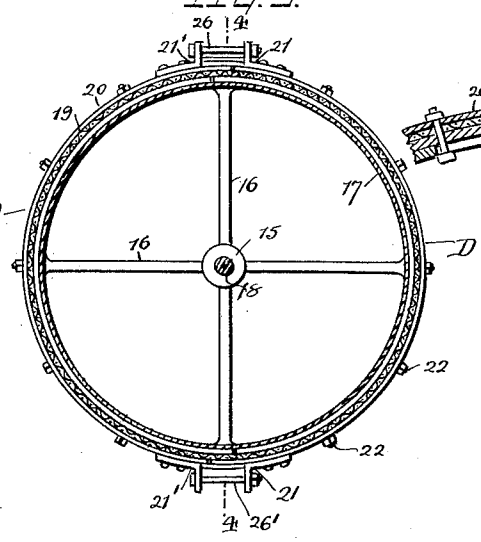


Fig. 6.

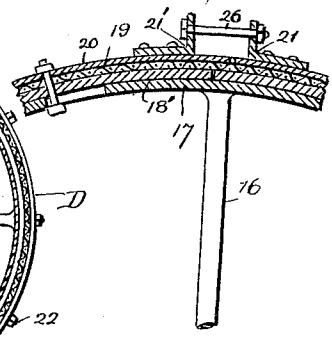


Fig. 7.

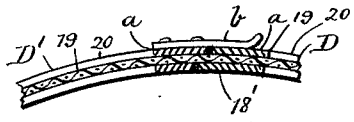


Fig. 8.

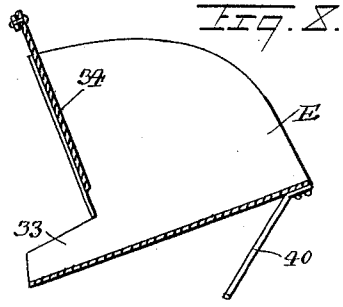


Fig. 9.

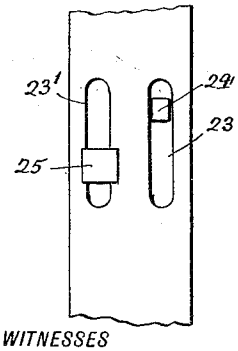
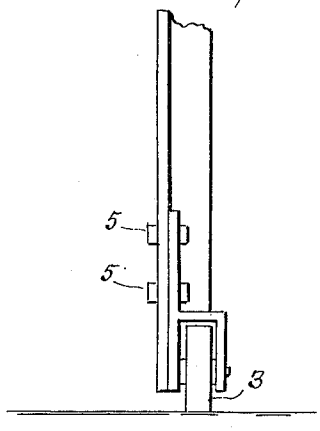


Fig. 10.



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UNITED STATES PATENT OFFICE.

FREDERIC S. CONVERSE, OF BINGHAMTON, NEW YORK.

ROTARY COAL-SCREEN.

1,079,543. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed May 4, 1911. Serial No. 625,634.

To all whom it may concern:

Be it known that I, FREDERIC S. CONVERSE, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Rotary Coal-Screens, of which the following is a specification.

My invention relates to an improvement in rotary screens for screening and sifting coal or other substances, and it has for its object to provide a complete, portable, sectional, rotary device which will screen coal, stone or other screenable substances and deposit the same in separate compartments; which can be fed by means of a graduating feed gate; and which can be adjusted as to height or pitch and rest upon the ground, or be changed to a portable condition without removal from the wheel carriage, being readily changed from a fixed position on the ground in use, to a portable position for transportation.

With these objects in view, my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter fully described and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a cross section on line 2:2 of Fig. 1, with caster wheels and front legs on the ground and partitions in place, ready for use. Fig. 3 is an end view with legs off ground, ready to move. Fig. 4 is an enlarged longitudinal section of the forward end screen, taken on line 4:4 of Fig. 5. Fig. 5 is a cross section taken on line 5:5 of Fig. 4. Fig. 6 is an enlarged cross section taken on line 6:6 of Fig. 4. Fig. 7 is an enlarged cross section taken on line 7:7 of Fig. 1. Fig. 8 is a longitudinal section of the hopper on line 8:8 of Fig. 3. Fig. 9 is a fragmentary inside face view of the spider or frame for the removable screens and Fig. 10 is an end elevation of one of the rear legs.

The same reference characters denote like parts in each of the several figures of the drawings.

In carrying out my invention, I provide a frame A having upon it the legs 2, 2′. On either leg I mount the casters 3. 3 by means of the caster supports 4. 4 engaging the legs 2. 2 and being held in connection therewith by means of the bolts 5. 5. In one end of the frame between the legs 2′ and 2′ I mount the cross piece 6, having the projecting flanges 8. 8. Through these flanges 8. 8 I extend the caster supports 4. 4. Mounted on the legs 2′, 2′ are the levers 9. 9 pivoted to the legs 2′, 2′ at the points 10. 10. Mounted on the caster standards 4. 4 are the links 11. 11 having hinged engagement with the levers 9. 9 at the point 12. 12, all as shown in Fig. 3. Mounted on the cross piece 6 are the hooks 13. 13 under which the levers 9. 9 may be clamped and held. The caster standards 4. 4 pass loosely through flanges 8. 8 allowing the flanged cross pieces 8. 8 to move up and down the standards, 4. 4. On the frame A, I mount the body portion B of the rotary screen. This body portion has within it the shaft 18 which rests in the bearings 14. 14, mounted on frame A. The body portion B is composed, aside from the shaft 18, of the wheel or spider bodies, which in turn are composed of the hub 15, the spokes 16. 16. 16 etc., and the outside spider or band, 17, each wheel or spider body being mounted on the shaft 18. On the wheel bands or spiders, 17. 17, I mount the screen sections of the body B, each section comprising a half section D and D′ of the body portion B. These half screen sections are composed of inside bands, 18′, on which is mounted the screen wire 19, and outside the screen wire are mounted the outside bands, 20. Between the outside bands 20 extend the bands *a*, which bands together, form the frame work of the screen half section. On the outside band of the half section are mounted the ears, 21, 21′. Through the inside bands 18′, the screen wire 19 and the outside bands 20 are the nut bolts 22. 22 holding the bands and wire firmly together in each half section. In the surface of the spider or wheel band are the slots, 23. 23. In the interior surface of the inner bands 18′ I mount alternate flat headed bolts and nuts 24, which enter into and engage the slots 23. Also within the inner bands 18′ are the bolt nuts 25, engaging slot 23′. On the outside of the band *a*, I mount the lip *b*, so that when

the sections unite the lip *b* passes over and rests upon the band *a* of the opposite half section. To have a more perfect union between the half sections, I have the interior bands 18′ and the outside bands 20 overlap to some extent at their ends so that the joints between these two bands do not occur at the same place.

To mount a half section of the screen B on the spider or wheel band 17, I place the half section upon the outside surface of the spider or wheel band, so that a flat headed nut 24 engages with the slot 23, and through other slots I mount the nut bolts 25, which hold the half section securely to the spider or wheel band surface. Thus having mounted the opposite sections between the ears 21. 21′, I pass the nut bolts 26. 26′ therethrough which draw the half sections firmly together. Mounted on the shaft 18, I have the sprocket wheel 27. Mounted on the wheel band or spider at the upper end of the shaft and screen body, I have the outer flange 28. Mounted on one side of the frame A I have the usual crank shaft 29 with handle 30, carrying the sprocket wheel 31 and between 31 and 27 extends the connecting chain 32. Mounted at the end of frame A, I have the hopper E, having the chute 33 and the gate 34. Mounted on the inner end of hopper E I have the post 35, on which is the lever 36, pivoted at 37 having on it the notches 38, 38 etc., and having hinged connection with the gate 34. Pivoted to the hopper is the hook 39 engaging the notches on lever 36, while supporting the body portion of the hopper is the brace, 40. By means of the notched lever 36 and hook 39, the gate 34 can be raised to any desired position. Mounted on and projecting downward from the under side of frame A, I have the guides 41. 41 etc., engaging and supporting the movable partitions, 42. 42. 42 etc.

In the operation of my device, when I have rolled the frame A with its screen body to a given position for screening coal, I unhook the levers 9. 9 from the hooks 13. 13 which permits the frame body to slide down the standards 4. 4 until the legs 2′, 2′ rest upon the ground. I then slide the partitions 42. 42 etc. into the receiving guides, 41. 41 etc. I then fill the hopper with coal or other substance to be screened and raise the gate 34 to a given position, allowing an opening sufficiently large according to the size of the coal or other substance to be screened, to properly govern the speed of the coal or other substance passing into the screen. I then turn the crank shaft, 29, which in turn revolves the screen body B, while the coal or other substance flows into the screen body from the hopper E until the full hopper of coal or other substance is properly screened. I then shut down the hopper gate and refill the hopper, raise the gate and proceed with turning the screen body again as before. It will be noted that the crank shaft 29 is so mounted that connection may be made with other power than hand power in order to properly revolve the screen. The coal passing into the screen and passing over the screen sections D D′: D D′: D D′:, the screen wire in each section being of a different size, the particles of coal or other substance pass through according to the size of the mesh in the screen wire over which they pass, and thus between the partitions 42. 42 etc., are left the different sizes of coal or other substances. The remaining coal or substance not screened falls out at the open end of the screen at F. Desiring to again move the screen body, I take out the partitions 42. 42 etc., I press down the levers 9. 9, which in turn raise the legs 2′, 2′ of the frame body off from the ground and hook the levers 9. 9 underneath the hooks 13. 13, and thus the screen body is ready to be moved to another given position.

Having thus described my invention, what I claim as new and for which I desire Letters Patent, is as follows:

1. A rotary screen comprising spider supports mounted on a central shaft and rotatable therewith, circular bands upon said supports forming a support for a cylindrical screen, screen sections, and bands attached to said screen support and constituting a framework for said screen sections, said bands being arranged concentrically in pairs and with the ends of one band overlapping the ends of another, substantially as described.

2. A rotary screen comprising spider supports mounted on a central shaft and rotatable therewith, circular bands upon said supports forming a support for a cylindrical screen, screen sections, and a framework for said screen sections comprising inner and outer circular and transverse bands attached to said screen support and with the meeting edges or joints of said bands arranged in different planes to break joints with each other, substantially as described.

3. A rotary screen comprising a support for a cylindrical screen, screen sections, supporting bands for said screen sections arranged both interiorly and exteriorly thereof, and means for clamping said supporting bands of adjoining sections at their meeting ends to each other upon said support, substantially as described.

4. A rotary screen comprising spider supports mounted on a central shaft and rotatable therewith, circular bands upon said supports forming a support for a cylindrical screen and provided with circumferen-

tially extending slots therein spaced apart, screen sections, and means for attaching said screen sections to said circular bands comprising bolts passing through holes in said screen sections and the slots in said bands, and means for clamping said screen sections together at their meeting edges.

In testimony whereof I have affixed my signature in presence of two witnesses.

FREDERIC S. CONVERSE.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."