C. M. AVERY.

TRAVELING GRIZZLY.

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1,401,751. Patented Dec. 27, 1921.

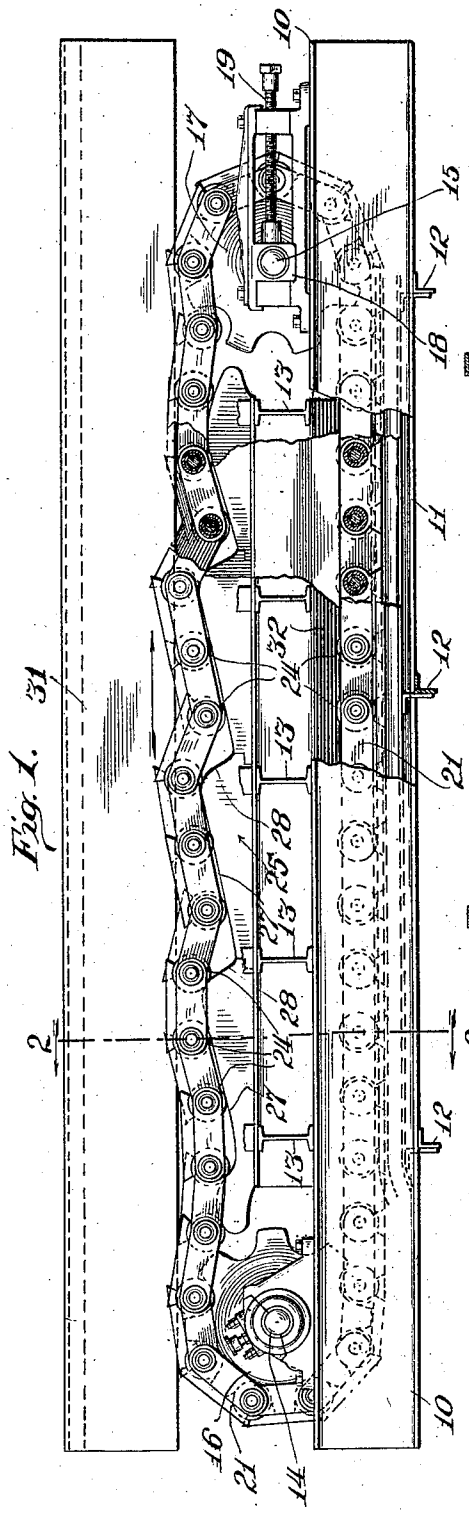

Fig. 1.

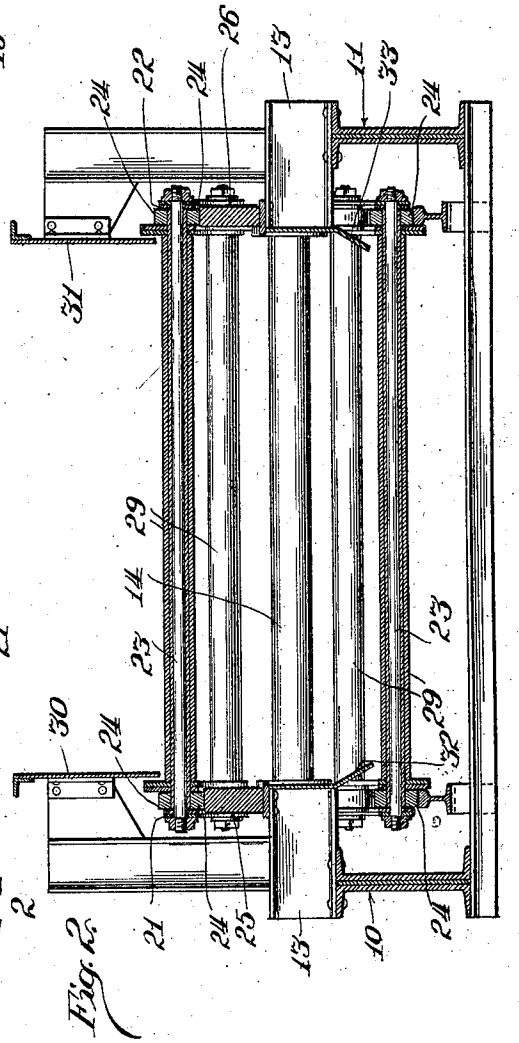

Fig. 2.

Inventor.

Colby M. Avery

By Fillson & Fillson

Attorneys

UNITED STATES PATENT OFFICE.

COLBY M. AVERY, OF AURORA, ILLINOIS, ASSIGNOR TO STEPHENS-ADAMSON MFG. CO., A CORPORATION OF ILLINOIS.

TRAVELING GRIZZLY.

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To all whom it may concern:

Be it known that I, COLBY M. AVERY, a citizen of the United States, and resident of Aurora, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Traveling Grizzlies, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to that form of screening devices known in the trade as the grizzly, in which the screening bed is formed of a plurality of parallel bars. More specifically, it relates to such devices having a traveling bed, the bars being carried by a pair of sprocket chains, or the like. In use the material to be screened, such as coal or rock, is discharged upon the screen bed, which is of sufficient length to insure the separation out of all of the finer particles.

The object of the present invention is to provide for the agitation of the material as it is carried along by the screen, thereby facilitating the separating out of the finer portions and not only insuring a more complete screening action but also accomplishing it with a machine of less length than has heretofore been necessary. This object is attained by an apparatus such as is hereinafter described and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device, some portions being broken away; and

Fig. 2 is a transverse vertical section on the line 2—2 of Fig. 1.

The frame of the apparatus comprises a pair of beams 10, 11, resting upon and tied together at their ends by transverse bars 12, and a series of instanding track-supporting brackets, as 13, mounted upon the beams. At each end of the frame there is mounted, in suitable journal boxes, a shaft 14, 15, each shaft carrying a pair of sprocket wheels adjacent its end, as 16, 17. The shaft, as 15, at one end of the apparatus, preferably the delivery end, is carried by adjustable bearing boxes 18, controlled by adjusting screws 19 mounted in suitable brackets, as 20.

A pair of sprocket chains 21, 22, are carried by the wheels 16, 17, the screening bars 23 constituting the pivots for the chain links. Each of the sprocket chains comprises a double set of links between which, upon each of the bars 23, is mounted a roller 24, adapted to run upon the tracks provided for both stretches of the chains.

The upper track, mounted upon the brackets 13, presents to the rollers 24 an uneven surface. This track is comprised of a plurality of sections 25, 26, each section having an upwardly inclined portion 27 and a downwardly inclined portion 28, the latter being preferably more sharply inclined than the former. As the screening bed is advanced, in the direction of the arrow of Fig. 1, its bars are gradually raised by the inclined portions 27 of the track, and at the end of these sections drop somewhat suddenly as the rollers 24 move down the sharper inclines 28.

By reason of this undulating movement of the screening bed the mass of material carried by it is sufficiently agitated or worked to free the finer particles and permit them to escape through the screen, and a complete screening action may thus be secured by a screen of much less length than has heretofore been required.

Preferably each bar 23 carries a sleeve 29, the surface of which may be hardened for durability. These sleeves being loose upon the bars are turned in service sufficiently to insure the presentation of their entire peripheries to the mass of material with substantial uniformity. The screening bed is driven by any suitable means, power being conveniently applied to the shaft 14.

Other details of the apparatus common to devices of this character are the shield plates 30, 31, above the screening bed for preventing the escape laterally of material carried thereby, and similar plates 32, 33, above the return stretches of the sprocket chains. The upper or outer margins, as 34, of the links of the sprocket chains are preferably extended somewhat in order that they may be overlapped by the shield plates 30, 31.

It is desirable, also, that the pitch of the track undulations and of the sprocket chains be differentiated. For example, as the machine has been designed the pitch of each track undulation, that is to say, the length of a straight line from the bottom of one depression to the next, is twenty-four inches, while the pitch of the sprocket is nine inches. Allowing for the deflection of the sprocket chains from a straight line as they travel over the track, the distance be-

tween centers of three links, in a straight line, is slightly more than twenty-four inches. As a result of this arrangement rollers passing from the apex of adjacent undulations do not exactly coincide, and the material is thereby given a greater agitating movement than would otherwise occur.

The purpose of providing the adjusting means is to secure just enough slack in the upper run or stretch of the screen to permit the rollers to constantly ride on the track.

While a preferred and operative form of construction is disclosed, various changes of detail may be made without departing from the scope of the invention.

I claim as my invention—

1. In a traveling grizzly, in combination, two pairs of sprocket wheels, sprocket chains running upon the wheels, screening bars carried by the chains, and undulating tracks supporting the chains intermediate of the wheels, the pitch of the undulations of the track and of the sprocket chains being different and being so differentiated that neither is a multiple of the other.

2. In a traveling grizzly, in combination, sprocket wheels, parallel chains running on the wheels, parallel screening bars carried by the chains, rollers mounted upon the bars, and undulating tracks for the rollers, the apices of the undulations being so spaced that the rollers approaching two adjacent apices reach the same out of step.

3. In a traveling grizzly, in combination, sprocket wheels, parallel chains running on the wheels, parallel screening bars carried by the chains, rollers mounted upon the bars, and undulating tracks for the rollers, the apices of the undulations of each track being so spaced that the rollers approaching any two apices reach the same out of step.

4. In a traveling grizzly, in combination, sprocket wheels, parallel chains running on the wheels, parallel screening bars carried by the chains, rollers mounted upon the bars, and undulating tracks for the rollers, the undulations being arranged in series and so spaced relative to the distance between rollers that no two rollers occupy corresponding positions with respect to any two undulations in the same series.

COLBY M. AVERY.