

March 19, 1946.

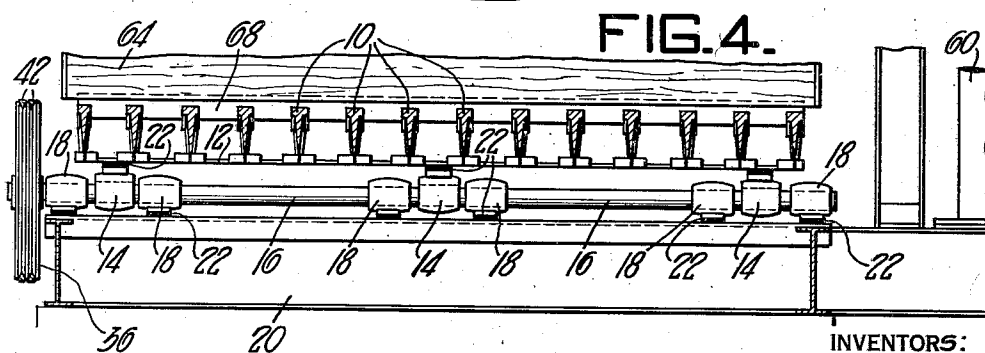
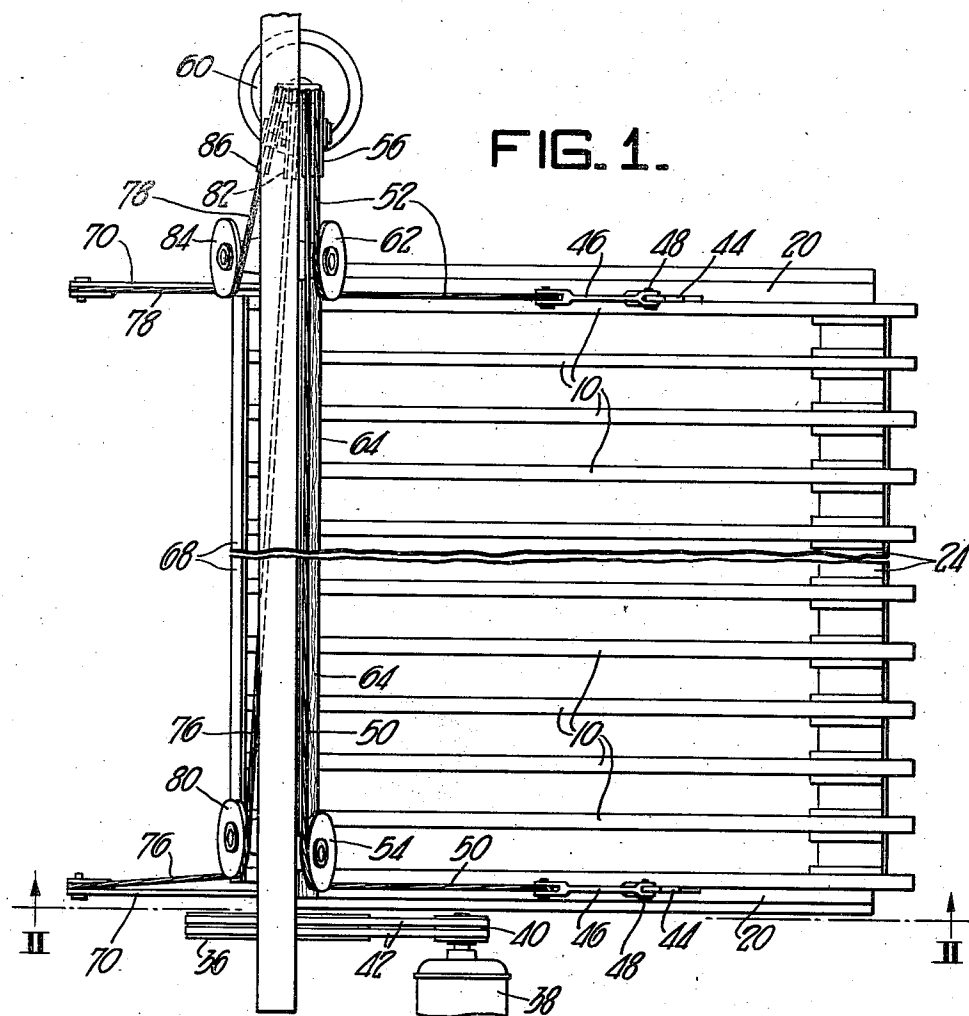
W. M. KRANZ ET AL

2,396,954

VIBRATING BAR GRIZZLY

Filed Sept. 13, 1943

3 Sheets-Sheet 1



INVENTORS:

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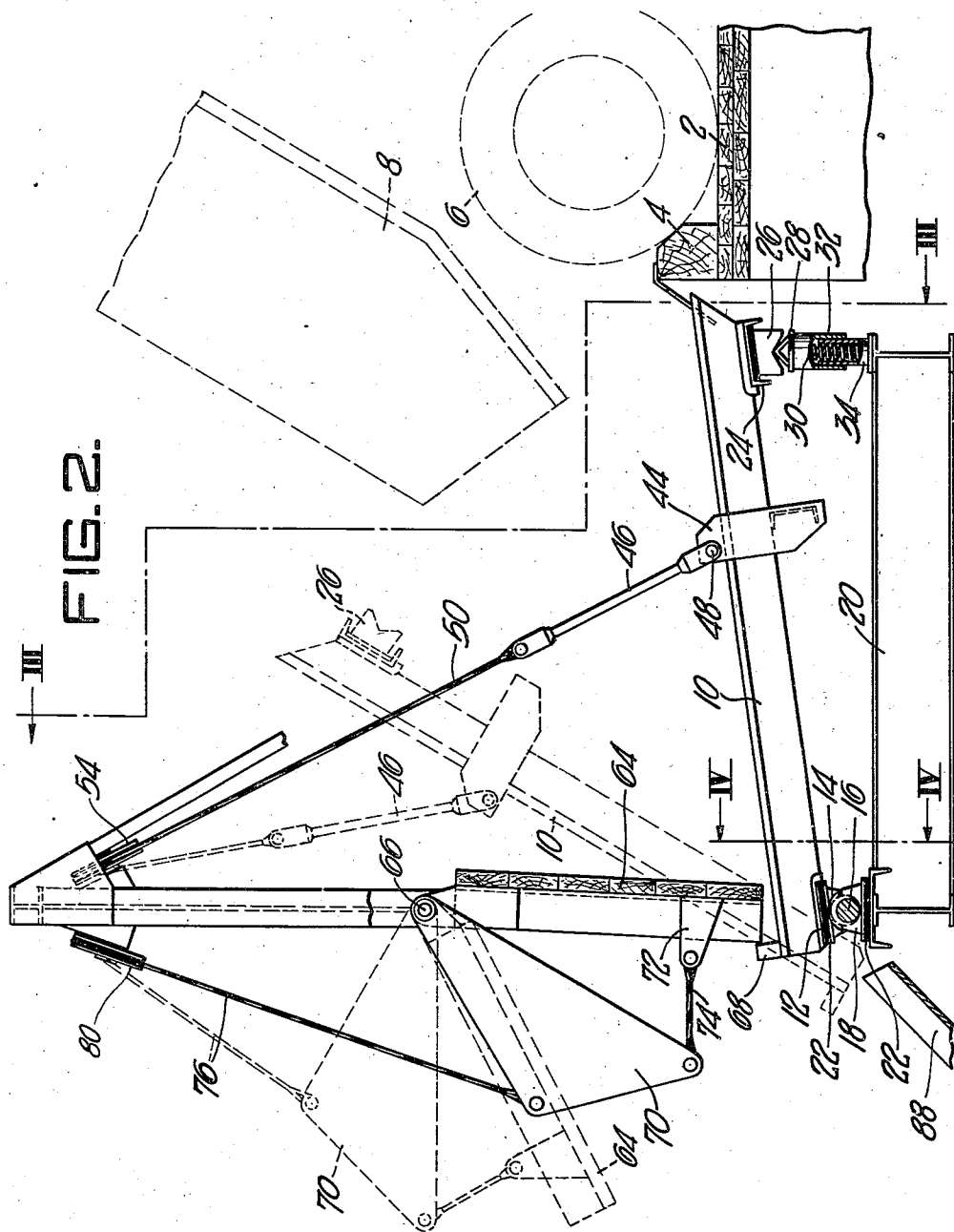
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

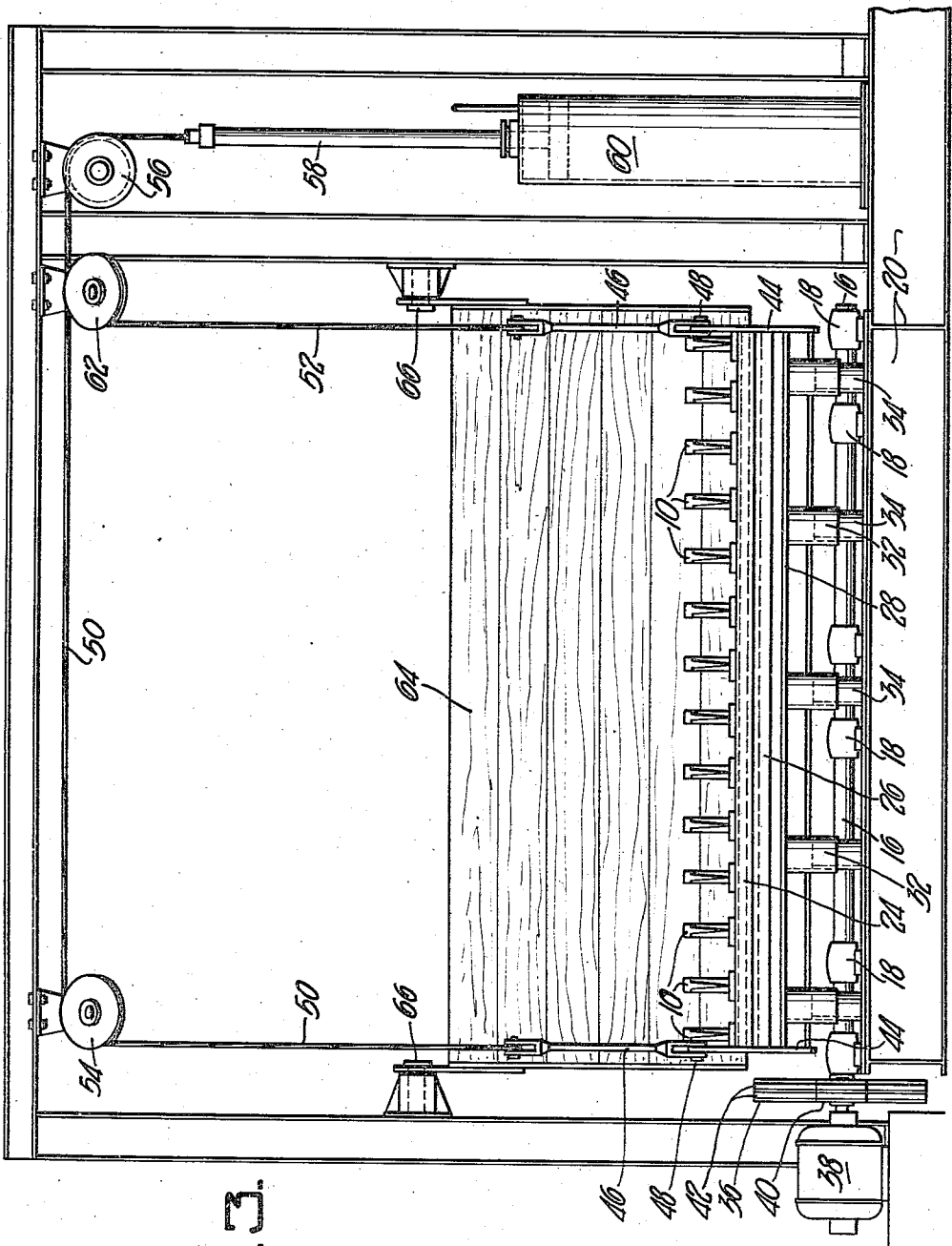


FIG. 3.

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UNITED STATES PATENT OFFICE

2,396,954

VIBRATING BAR GRIZZLY

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Application September 13, 1943, Serial No. 502,212

5 Claims. (Cl. 209—260)

This invention relates to a vibrating bar grizzly which is used to screen various types of material in lump form. In these devices, a load of the material to be screened is dumped on a plurality of vibrating grizzly bars which are spaced apart so that all material under a certain size will drop through the bars, the oversize lumps remaining on the bars from which they may be removed manually. The material is often heavy and when dumped on the vibrating bars causes damage to the bar support at the feed end.

It is an object of this invention to provide a resilient support for the feed end of the grizzly to absorb the vibratory motion and the impact of the load being dumped thereon.

Another object is to provide means for removing oversize material from the grizzly.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a plan view of the invention;

Figure 2 is a view taken on the line II—II of Figure 1;

Figure 3 is a view taken on the line III—III of Figure 2; and

Figure 4 is a sectional view taken on the line IV—IV of Figure 2.

Referring more particularly to the drawings, reference numeral 2 indicates a deck for supporting a supply truck, the end of the deck 2, adjacent the grizzly, having a stop 4 to prevent the wheels 6 of the truck from running off. The truck carries a box 8, which may be tilted as shown in Figure 2 to dump the material to be screened onto the grizzly. The grizzly has a plurality of spaced apart grizzly bars 10, which extend from a point adjacent the deck 2 to a lower discharge position away from the deck 2. A plate 12 connects the lower end of the grizzly bars 10 and carries two or more bearings 14 which are supported on a shaft 16, the portions of which, passing through the bearings 14, are eccentric with respect to the center line of the shaft. The shaft itself is carried in concentric bearings 18 which are supported on the frame 20. Between the bearings and their supports are sheets of shock-absorbing material 22. A channel 24 fastens the grizzly bars 10 together at the charging end of the grizzly. This end of the grizzly bars has a floating support consisting of a bearing block 26 fastened to the channel 24, a spring plank 28 and a series of coil springs 30, which are housed within telescoping pipes 32

and 34. The pipe 34 is supported on the frame 20.

The shaft 16 carries a V-belt sheave 36 which is driven from motor 38 through sheave 40 and V-belt 42. A bracket 44 is attached to each side of the grizzly and is pivotally connected to a bifurcated link 46 by means of pin 48. The free ends of the links 46 are connected to wire ropes 50 and 52. The rope 50 passes over a sheave 54 and extends to a double grooved sheave 56 over which it passes and extends downwardly to the piston rod 58 of an air cylinder 60 to which it is attached. The rope 52 extends upwardly and passes over sheaves 62 and 56 and extends downwardly and is fastened to piston rod 58. By supplying air pressure to the top of the piston of cylinder 60, the grizzly is rotated about the shaft 16 to the dotted line position shown in Figure 2.

In order to prevent material from being thrown from the lower end of the grizzly without being screened, a barrier gate 64 is provided adjacent the delivery end. The barrier is pivotally mounted on pins 66 at each end and is held in place by stops 68 at the lower end of the grizzly. A bell crank 70 is pivotally mounted on each of the pins 66 and is connected at its lower end to a bracket 72 on the barrier 64 by means of wire rope 74. Wire ropes 76 and 78 connect each of the bell cranks 70 to the piston rod 58 passing over sheaves 80, 82 and 84, 86, respectively.

The operation of the device is as follows:

With the grizzly in the position shown in full lines in Figure 2 a truck is moved against the stop 4 and the material dropped from the truck box 8 onto the grizzly. The motor 38 causes the shaft 16 to rotate and imparts a vibratory motion to the grizzly through the eccentrics. The springs 30 take up the impact when the load is dumped on the grizzly, give the flexibility necessary for the vibrations of the grizzly and assist the screening action by their successive compressions and expansions. The oversize pieces of material gradually move to the lower end of the grizzly where they are prevented by the barrier 64 from dropping from the grizzly. When it becomes necessary to remove the oversize material from the grizzly, air is admitted to the top of cylinder 60. This causes the grizzly to rotate about the shaft 16 and at the same time causes the barrier 64 to rotate upon the pins 66 until they reach the dotted line position shown in Figure 2. In this position all the oversize material is discharged into a chute 88 which leads to a suitable receptacle. The grizzly is then lowered

into its original position where it is in position to receive additional material to be screened.

While one embodiment of the invention has been shown and described, it will be more apparent to one skilled in the art that other adaptations and modifications may be made without departing from the scope of the attached claims.

We claim:

1. A vibrating bar grizzly for screening material comprising a plurality of spaced apart grizzly bars, an eccentric shaft supporting the delivery end of said bars, a resilient support for the charging end of said bars, means for rotating said shaft whereby a vibratory motion is imparted to the grizzly, and means for rotating said grizzly bars about said shaft to discharge oversize material from the grizzly.

2. A vibrating bar grizzly for screening material comprising a plurality of spaced apart grizzly bars, said bars slanting downwardly toward their delivery end, an eccentric shaft supporting the delivery end of said bars, a resilient support for the charging end of said bars, means for rotating said shaft whereby a vibratory motion is imparted to the grizzly, and means for rotating said grizzly bars about said shaft to discharge oversize material from the grizzly.

3. A vibrating bar grizzly for screening material comprising a plurality of spaced apart grizzly bars, said bars slanting downwardly toward their delivery end, an eccentric shaft supporting the

delivery end of said bars, a resilient support for the charging end of said bars, means for rotating said shaft whereby a vibratory motion is imparted to the grizzly, a barrier for preventing unscreened material from being thrown off the lower end of said grizzly, and means for rotating said grizzly bars about its shaft and for removing said barrier whereby oversize material is discharged from the grizzly.

4. Apparatus for screening material comprising a screen, an eccentric shaft supporting the delivery end of said screen, a resilient support for the charging end of said screen, means for rotating said shaft whereby a vibratory motion is imparted to the screen, and means for rotating the screen about said shaft to discharge oversize material therefrom.

5. Apparatus for screening material comprising a screen, an eccentric shaft supporting the delivery end of said screen, a resilient support for the charging end of said screen, means for rotating said shaft whereby a vibratory motion is imparted to the screen, a barrier for preventing unscreened material from being thrown off the lower end of said screen, a stop for said barrier at the lower end of said screen, and common means for rotating said screen about its shaft and for removing said barrier whereby oversize material is discharged from the screen.

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