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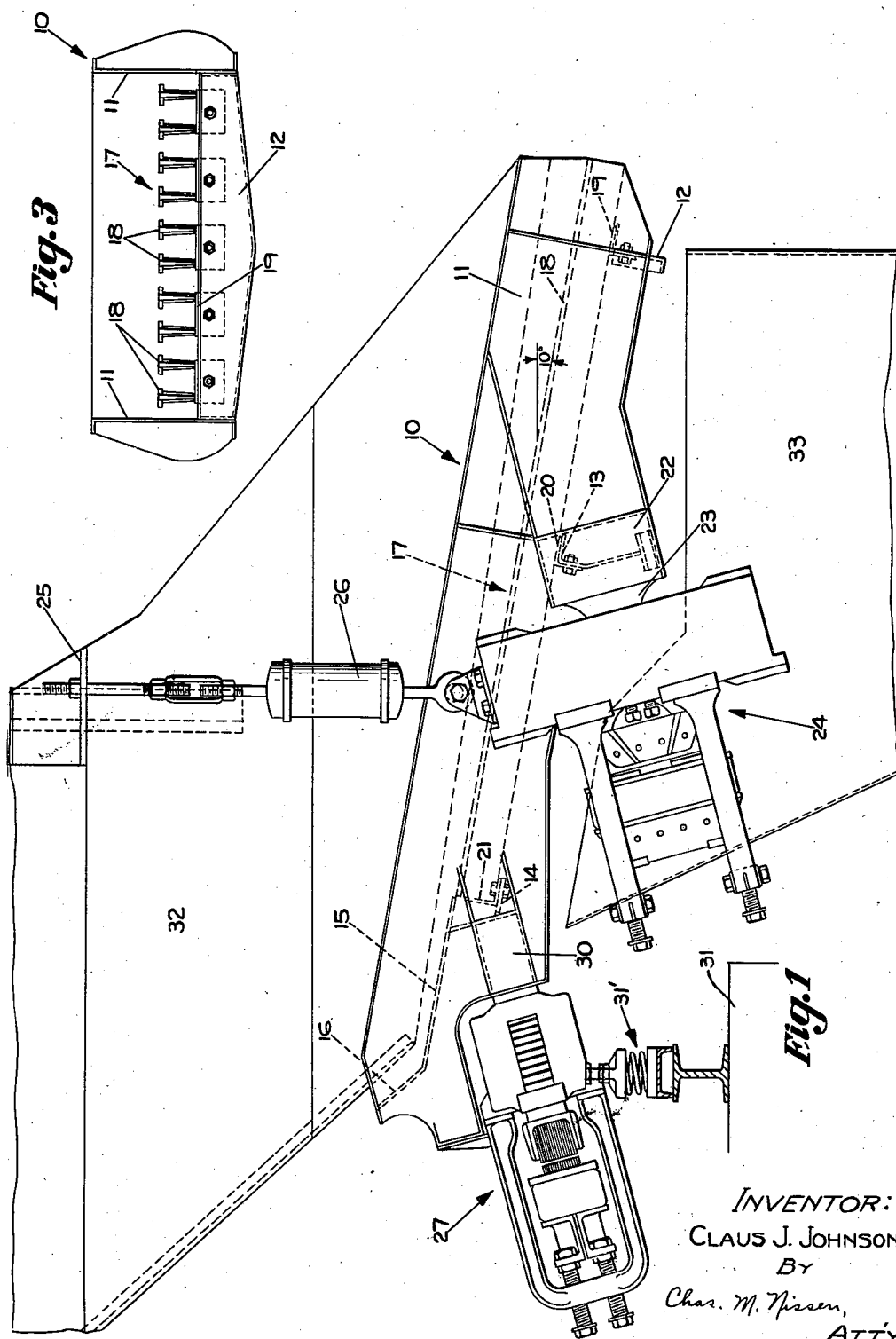
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2,290,434

VIBRATORY CONVEYER AND SCREEN

Filed May 9, 1939

2 Sheets-Sheet 1



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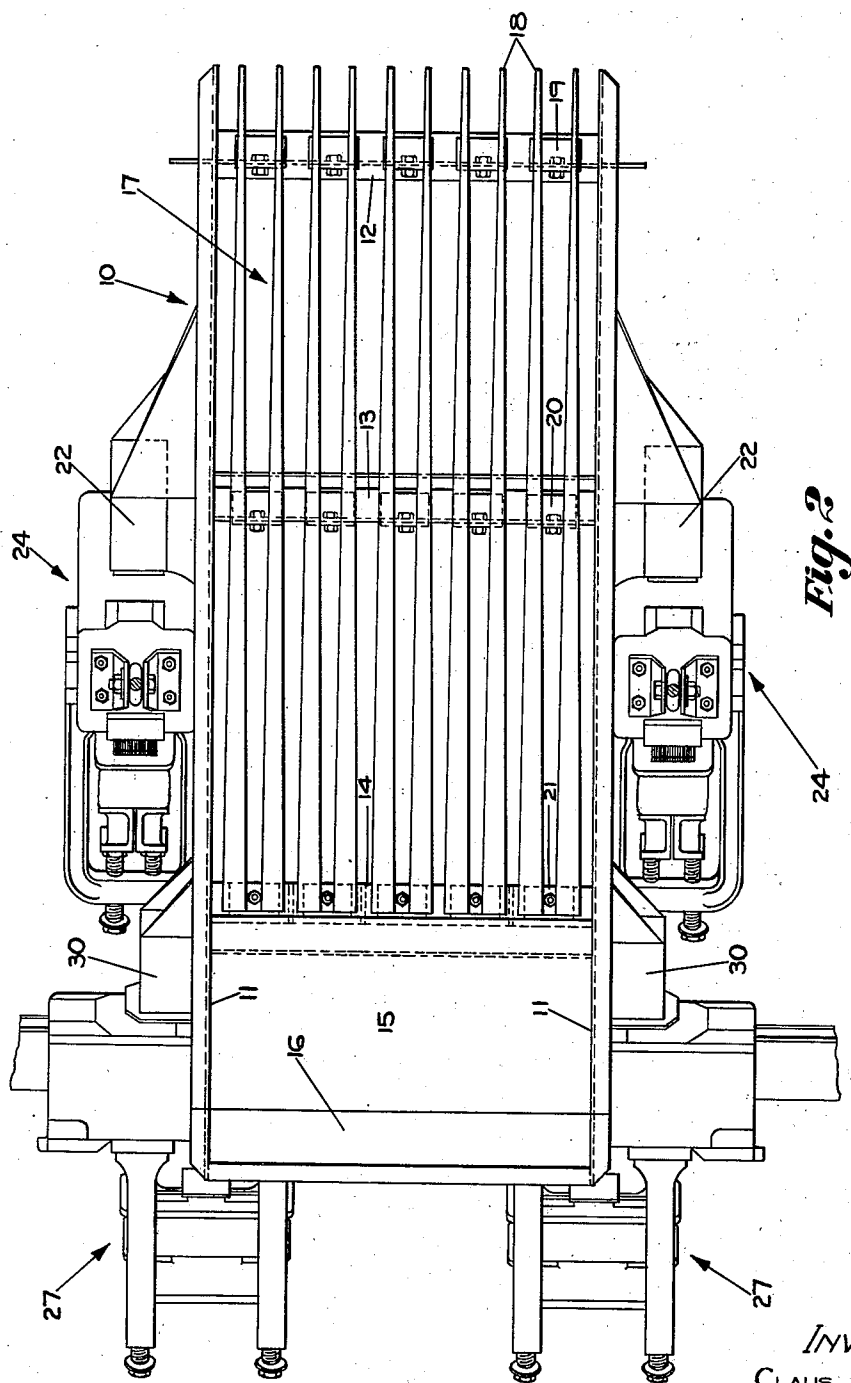


Fig. 2

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7 Claims. (Cl. 209—329)

As illustrated in Fig. 1 of the drawings, a hopper chute 32 is provided to guide and direct material to the vibratory conveyor and screen, and a bin 33 is positioned below the screen, grating or gizzly 17 to receive the material which passes therethrough. It is, of course, evident that by

virtue of the lateral positioning of the motors 24 the material passing through the screen, grizzly or grating 17 is received freely by the bin 33.

In the operation of the device the material to be conveyed and classified according to size is directed by the chute 32 onto the deck 10. Vibratory motion having vertical and horizontal components imparted to the deck 10 by the motors 24 and 27 will effect a positive conveying action on said material to convey it toward the discharge or the right hand end of the deck 10. As the material passes over the screen, grating or grizzly 17 it will be classified according to size with those particles of sufficiently small size passing therethrough and into the bin 33, the larger particles being discharged over the right hand end of the screen, grating or grizzly 17 where they may be received by any desired receptacle, such as a bin, conveyer, or the like.

It may be noted that in the drawings the deck 10 is shown sloping downwardly at an angle of ten degrees. Such a downward slop, of course, increases the capacity of the vibratory conveyer and screen. However, this downward sloping is not necessary and the deck 10 may be horizontal or, in fact, it may even incline upwardly if circumstances make either condition desirable or necessary.

It is evident that I have provided a combined vibratory conveyer and screen of large capacity with a very extensive screening area to effect a very efficient separation of material according to size. Furthermore, a very rugged and flexible grating or grizzly has been provided which is made up of separable bar sections which can be individually removed and replaced.

I have described and claimed the individually removable bar sections in my co-pending divisional application, S. N. 391,775, filed May 3, 1941, for an improvement in Vibratory conveyer and screen.

Obviously those skilled in the art may make various changes in the details and arrangement of parts without departing from the spirit and scope of the invention as defined by the claims hereto appended, and I therefore wish not to be restricted to the precise construction herein disclosed.

Having thus described and shown an embodiment of my invention, what I desired to secure by Letters Patent of the United States is:

1. In a vibratory conveyer and screen, the combination with a deck having a screening bottom area, of vibratory motor means for vibrating said area with a motion having a rectilinear movement which makes an acute angle to the general plane of said bottom area, said motor means including vibratory motors spaced laterally of said deck and motor means spaced rearwardly thereof.

2. In a vibratory feeder and screen, the com-

bination with a deck having an imperforate bottom pan adjacent one portion and a perforate screening area adjacent thereto, of means to vibrate said deck, said means including vibratory electro-magnetic motor means positioned below said imperforate bottom pan and an electro-magnetic motor adjacent each side of said deck spaced laterally of said screening area.

3. In a vibratory feeder and screen, the combination with a deck having an imperforate bottom pan adjacent one portion and a perforate screening area adjacent thereto, of means to vibrate said deck, said means including vibratory motor means positioned below said imperforate bottom pan and a motor adjacent each side of said deck spaced laterally of said screening area.

4. A combined feeder and grizzly comprising a pan having a rear imperforate bottom, an elongated grizzly ahead of said imperforate bottom, means for vibrating said deck comprising a motor below said imperforate bottom, and a motor spaced laterally of said grizzly at each side of said pin.

5. A combined feeder and grizzly comprising a pan having a rear imperforate bottom, a grizzly ahead of said imperforate bottom, means for vibrating said deck comprising a motor below said imperforate bottom, and a motor spaced laterally of said grizzly at each side of said pan.

6. In a vibratory screen, the combination with a deck having a screening surface permitting material to pass therethrough, of vibratory motor means for vibrating said deck, including at least three vibratory motors, at least one at each side of said deck and spaced laterally thereof to provide for free and unobstructed passage of material through and below said screen, and at least one at an end of said screen spaced out of the path of such material, each of said motors including one or more elongated flat spring bars, the end motor being so attached to said screen that its flat spring bars extend in a direction transversely of said deck and the motors at the sides of said deck being so attached to said screen that their flat spring bars extend upwardly with respect to said screening surface.

7. In a vibratory screen, the combination with a deck having a screening surface permitting material to pass therethrough, of vibratory motor means for vibrating said deck, including at least three vibratory motors, at least one at each side of said deck and spaced laterally thereof to provide for free and unobstructed passage of material through and below said screen, and at least one at an end of said screen spaced out of the path of such material, each of said motors including one or more elongated flat spring bars, the motors at the sides of said deck being so attached to said screen that their flat spring bars extend upwardly with respect to said screening surface.

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