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COMBINED SHAKER SCREEN AND CONVEYER

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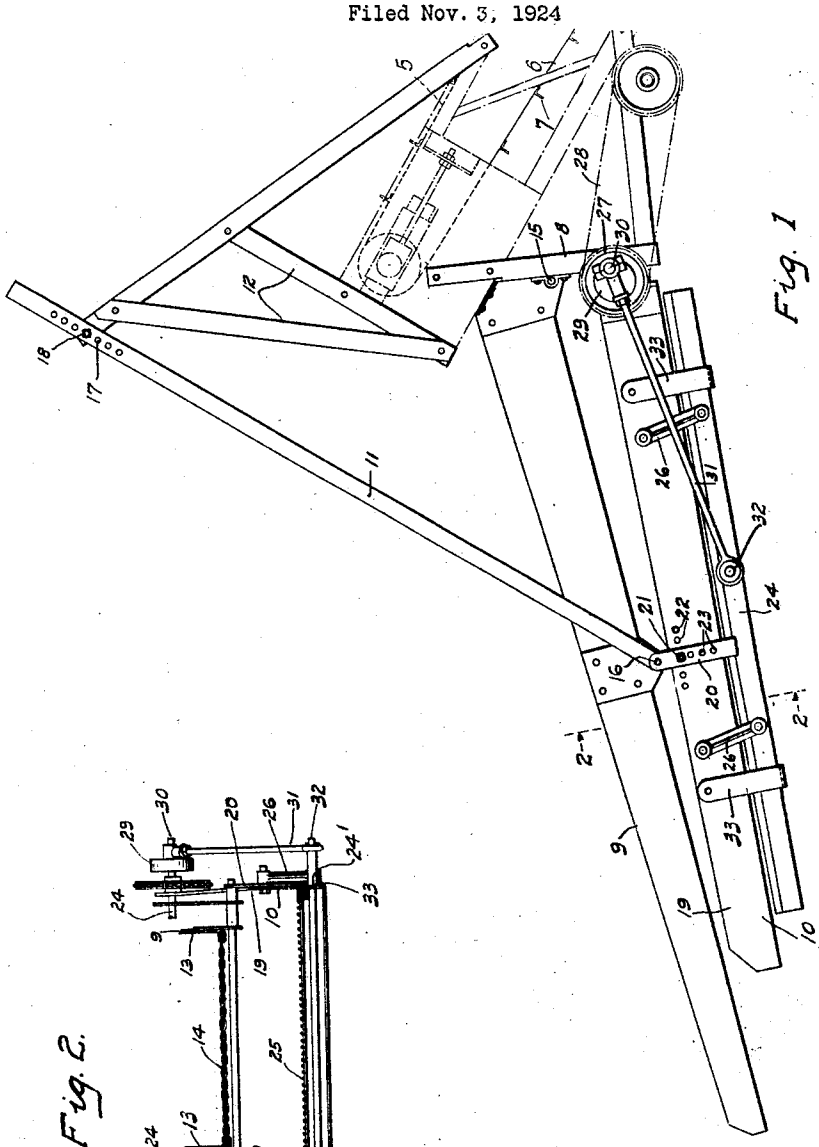


Fig. 1

Fig. 2.

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COMBINED SHAKER SCREEN AND CONVEYER.

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This invention relates to improvements in combined shaker screens and conveyers, more particularly adapted for screening sand, gravel, coal and other like material.

It is one of the objects of the present invention to combine a shaker screen with a portable conveyer in such a manner as to provide for the conveyer carrying the material upwardly to the conveyer screen and the screened material be discharged directly into a vehicle for further disposition.

A further object of the invention is to provide a combined shaker screen and conveyer in which the screening member is oscillated directly from one of the conveyer shafts.

A further object of the invention is to provide a combined shaker screen and conveyer in which one, two or three screens may be used in screening material.

A further object of the invention is to provide a combined shaker screen which may be easily mounted upon and form part of an ordinary portable conveyer in a very simple manner.

A further object of the invention is to provide a combined shaker screen and conveyer which is of very simple construction, is strong and durable and is well adapted for the purpose described.

With the above other objects in view, the invention consists of the improved combined shaker screen and conveyer and its parts and combinations as set forth in the claims and all equivalents thereof.

In the accompanying drawing, in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a side view of the improved shaker screen shown mounted on a portable conveyer; and

Fig. 2 is a transverse sectional view thereof.

Referring to the drawing, the numeral 5 indicates a conveyer, preferably of the portable type, which is provided with an endless belt 6, having spaced slats 7 for conveying material such as sand, gravel or other material from a lower to a higher plane of discharge.

The improved shaker screen is mounted on the conveyer and comprises in part L-shaped frames 8 bolted on the upper opposite sides of the conveyer and to which frames a relatively fixed screen frame 9 and an oscillatory frame 10 are connected in endwise relation. Brace members 11 and 12, also connected to the conveyer and screen frames, hold the said screens firmly in extended or boom-like position. The upper screen member is formed with side members 13 and a bottom screen portion 14 for screening the finer particles from the coarser. The said upper screen is of greater length than the oscillatory screen and at its inner end is connected to the L-shaped frame by pivots or hinges 15 to permit adjusting the angle of the screen. To provide for said adjustment, the lower ends of the brace members 11 are connected to medial portions of the screen frame by pivot pins 16, and at their upper ends said members are provided with bolt holes 17 for adjustably receiving bolts 18.

The lower or oscillatory screen is provided with side boards or members 19 spaced a greater distance apart than the side members of the upper screen and adjustably connected thereto by straps 20 which are mounted on the pins 16 and depends downwardly therefrom. Bolts 21 connect the members 19 to the straps and may be inserted in any of the bolt holes 22 and 23 formed in said parts. The inner ends of the side members 19 are pivotally connected to the shaft 24. The frame 24′ proper of the lower screen 25 is swingingly suspended from the side members 19 by links 26, and is free to swing or oscillate lengthwise as indicated. The shaft 24 at its opposite ends is provided with sprocket wheels 27 which have a sprocket chain connection 28 with a driving means of the conveyer and said shaft is also provided with wheels 29 having wrist pins 30 projecting therefrom. Connecting rods 31 journaled at one end to the wrist pins are journaled at their opposite ends to the screen frame 24′ by projecting pins 32, as clearly shown.

Both screens are connected to the conveyer frame at points beneath the plane of the upper end portion of the endless belt or conveyer 6, so that the material discharged therefrom will drop onto the upper inclined screen, and in its travel down said screen the finer particles will fall through the screen and onto the finer screen below to be again screened by the oscillatory screen. Said last mentioned screen will discharge the coarser

particles from the outer end of the screen while the finer particles will pass therethrough.

It is to be understood that one, two, three or any number of screens may be used as desired, without departing from the spirit of the invention.

To prevent lateral movement of the oscillatory screen member, guide members 33 connected to the outer sides of the lower side members extend downwardly on opposite sides of the oscillatory screen and beneath the screen, thus confining the movement of the screen within the confines of said guide members, as shown.

The lower screen is of less length than the upper screen, so that the coarser material carried by the upper screen may be discharged at a point different from the point of discharge of the lower screen. As the screens extend in a plane above the height of a truck, the screened material may be directly discharged into a truck.

In use, the shaker screen is connected to the conveyer frame in the manner shown and described, and the angle of the screens is adjusted as described. Upon transmitting motion to the wrist pin wheels, the lower screen will be oscillated back and forth and completely screen the material fed thereto from the conveyer belt.

From the foregoing description it will be seen that the combined shaker screen and conveyer is of very simple construction and is well adapted for the purpose described.

What I claim as my invention is:

1. The combination with a conveyer for elevating material, of a shaker screen therefor, comprising a frame attachable to the conveyer and having members connected to and projecting outwardly therefrom, a longitudinally extending fixed screen connected to some of the members and projecting outwardly therefrom, longitudinally extending side boards connected to the fixed screen and some of the frame members, said side boards being spaced apart a distance greater than the width of the fixed screen, a longitudinally extending movable screen member positioned below the plane of the fixed screen for receiving screened material throughout its length from the fixed screen, links pivotally connecting the movable screen member to the side boards, and means for oscillating the lower screen longitudinally.

2. The combination with a conveyer for elevating material, of a shaker screen therefor, comprising a frame attachable to the conveyer and having members connected to and projecting outwardly therefrom, a longitudinally extending fixed screen connected to some of the members and projecting outwardly therefrom, longitudinally extending side boards connected to the fixed screen and some of the frame members, said side boards being spaced apart a distance greater than the width of the fixed screen, a longitudinally extending movable screen member positioned below the plane of the fixed screen for receiving screened material throughout its length from the fixed screen, links pivotally connecting the movable screen member to the side boards, a driving means carried by the conveyer, connecting rods pivotally connected to the opposite side portions of the movable screen member and to the driving means, and guide members connected to the side boards and extending beneath the movable screen member.

In testimony whereof, I affix my signature.

JESSE B. WHITNALL.