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A. L. SHAW

SCREEN FOR CONVEYERS

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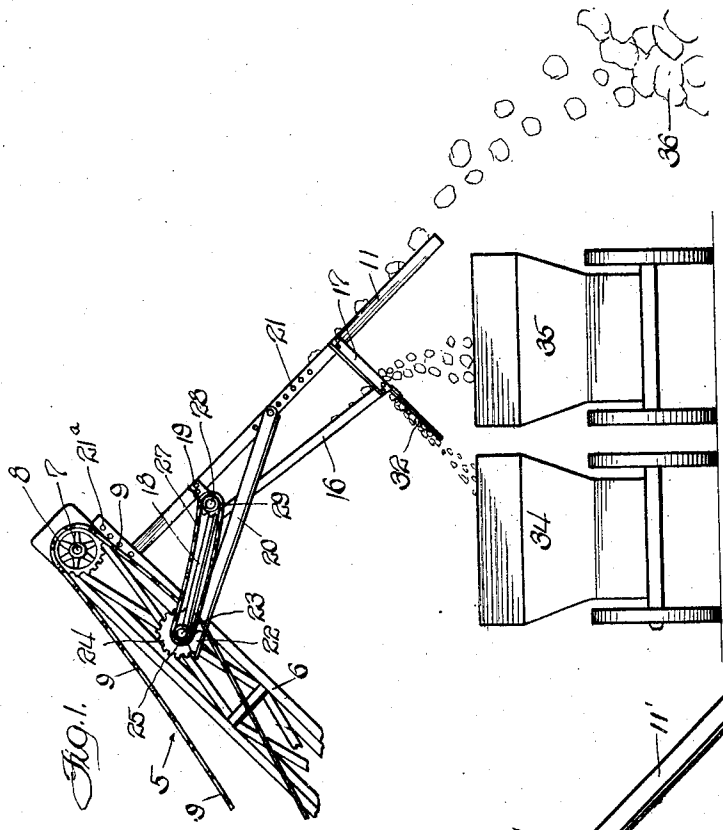


Fig. 1.

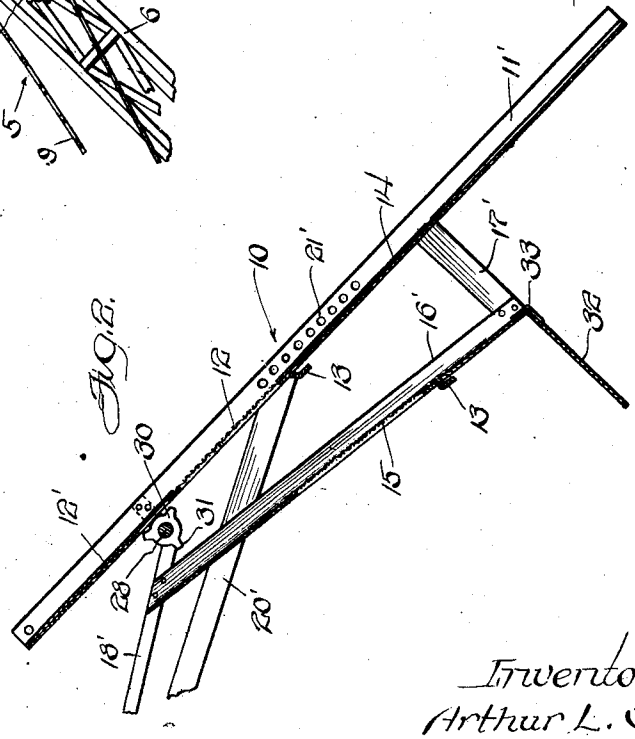


Fig. 2.

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ARTHUR L. SHAW, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO AUTOMATIC CONVEYOR CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SCREEN FOR CONVEYERS.

Application filed December 26, 1922. Serial No. 609,091.

This invention relates to screens for conveyers.

One of the objects is to provide an improved screen for attachment to the discharge end of a conveyer.

Another object is to provide a screen having an agitating means driven by the power that operates the conveyer.

A further object is to provide a device having a plurality of screen structures with a knocker or agitator driven by conveyer-driving means and arranged to deliver the screened material in separate deposited places and means for definitely separating the screened material.

A further object is the provision of improved means for connecting the screen structure to the conveyer and means for connecting the screen driving means to the conveyer driving means.

Further and more specific objects and appreciable advantages will hereinafter appear from a consideration of the following description when taken in conjunction with the accompanying drawing forming a part hereof, wherein:—

Fig. 1 is a side elevation of the delivery end of a conveyer with the screen attached thereto.

Fig. 2 is an enlarged central section of the screen structure.

In both views the same reference characters are employed to indicate corresponding parts.

The conveyer 5 consists of a frame 6 having a transversely extending shaft 7 at its driven end, having a sprocket wheel 8 driven by a chain 9. The shaft 7 by suitable means drives the elevating mechanism, such as a pair of chains connected at intervals by suitable drags, not shown, but common in devices of this character.

The screen structure 10 consists of two parallel inclined bar members 11—11′ spaced a distance apart about equal to the width of the conveyer frame and adjustably attached to the frame 6 by pins or bolts in holes 21^a. These members preferably take the form of angle iron bars with their horizontal flanges pointing inwardly. Near the upper ends of these bars, and loosely resting on the horizontal flanges thereof, is a screen 12 attached to a plate 12′. The lower end of the screen is secured to a Z-bar 13 that underlies the upper edge of the plate 14 serving as a part of the structure to conduct the material away from the conveyer which is too large to pass thru the screen.

Another screen 15 located below and inclined at a greater angle than the screen 12, is secured to angle bars 16—16′ which are supported at their lower ends by posts 17—17′ secured at their upper ends to the bars 11—11′, respectively.

The upper ends of the screen supports 16—16′ are secured to radius bars 18—18′ and to posts 19—19′.

Bars 20—20′ are adjustably attached to bars 11—11′ by pins or bolts in holes 21. On the outer end of bar 20 is mounted bearing standards 22 supporting a short shaft 23, on the inner end of which is secured a sprocket wheel 24 for engagement of the drive chain 9 of the conveyer.

Another, smaller sprocket wheel 25 is secured to the outer end of shaft 23 and drives a chain 27.

A transverse shaft 28 is supported on the posts 19—19′ and carries on one of its ends a sprocket wheel 29 driven by chain 27. The shaft 28 carries two knockers 30, rotated by the shaft and having radial projections 31 that engage the under surface of the screen plate, thus agitating or jarring the screen 12.

The constant knocking or jarring causes the entire screen structure to vibrate to a greater or less extent serving to clean the screens and to accelerate movement of material over the screens.

An apron 32 is hinged, or otherwise adjustably secured to the lower end of the screen 15, at 33, to direct the material that comes thru this screen out of the path of the material that may come thru the screen thereabove.

In Fig. 1 I have shown two receptacles 34 and 35 to receive the screened material such as coal, coke or the like, from the respective screens and the coarser particles will pass over screen 14 into a pile 36. The apron 32 shows how the coal or other material, which passes thru screen 15, is diverted in its course into receptacle 34.

The angular relation of the screen 10 and the conveyer 5 may be adjusted by the bars 20—20′ and the openings 21—21′, and its proximity to the end of the conveyer 5 may be adjusted by the bars 11—11′ and the openings 21^a.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a portable boom, of a power driven conveyer thereon, a frame, a set of screens mounted in said frame in mixed angular relation to each other, means included in said frame for adjustably attaching said frame to said boom adjacent its outer end, means included in said frame for pivotally securing said frame to said boom, a transverse shaft carried by the second mentioned means, two sprocket wheels on said shaft one of which engages the conveyer chain thereby driving the shaft, a second shaft parallel to the first shaft mounted on the screen frame, a sprocket wheel, a plurality of knockers mounted on said second shaft, and a chain connecting said two shafts whereby said second shaft may be driven by said first shaft.

2. The combination with a power driven conveyer and its supporting structure, of a frame, a plurality of screens mounted in said frame in fixed angular relation to each other, the upper of said screens being adjustably attached to said structure, and a pair of parallel bars pivotally secured to said structure, said bars adjustably engaging said upper screen.

3. The combination with a power driven conveyer and its supporting structure, said supporting structure having a series of aligned apertures adjacent its upper end, of a plurality of screens attached together in fixed relation to each other, the upper of said screens being adapted to selectively engage said apertures, there being a series of aligned apertures associated with said upper screen, a pair of parallel bars pivotally secured to said supporting structure and adapted to selectively engage the second mentioned apertures, a shaft suspended from one of said screens and actuated by the conveyer driving means, and a plurality of knockers on said shaft to vibrate said screens in unison.

In testimony whereof I hereunto subscribed my name.

ARTHUR L. SHAW.