

U. WEDGE.
SCREENING CONVEYER.
APPLICATION FILED MAY 12, 1908.

Patented Oct. 25, 1910.

2 SHEETS-SHEET 1.

973,597.

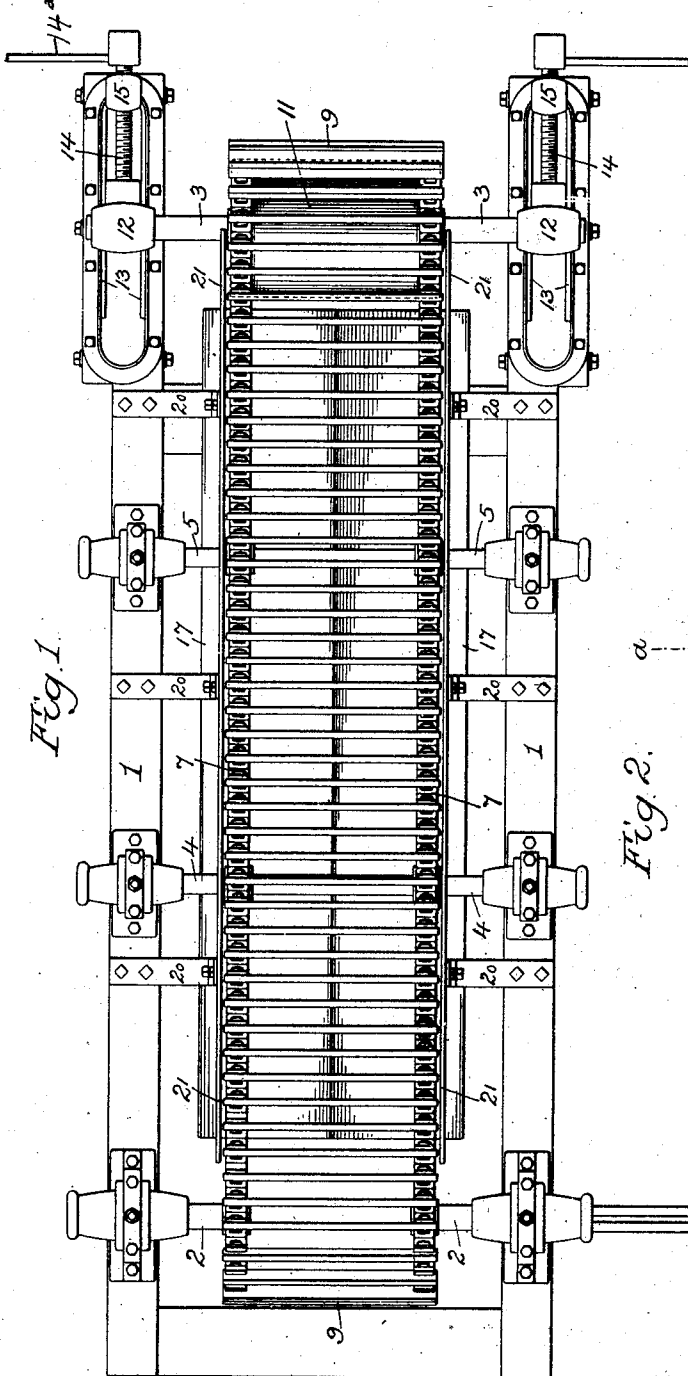


Fig. 1.

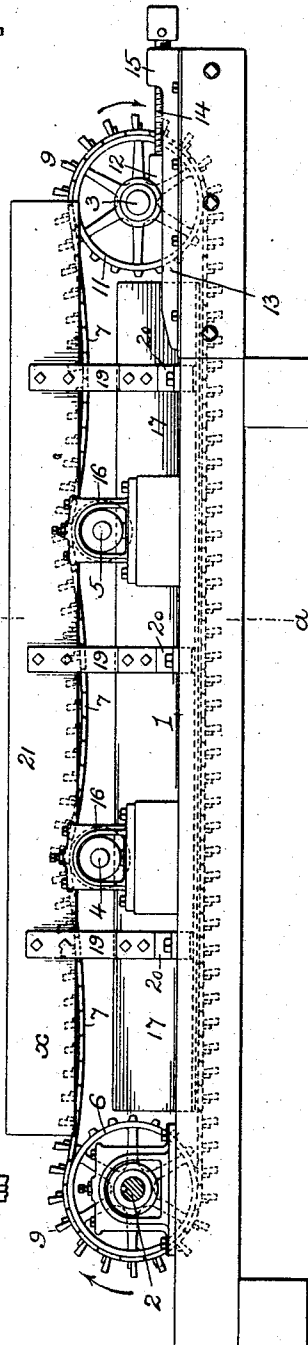


Fig. 2.

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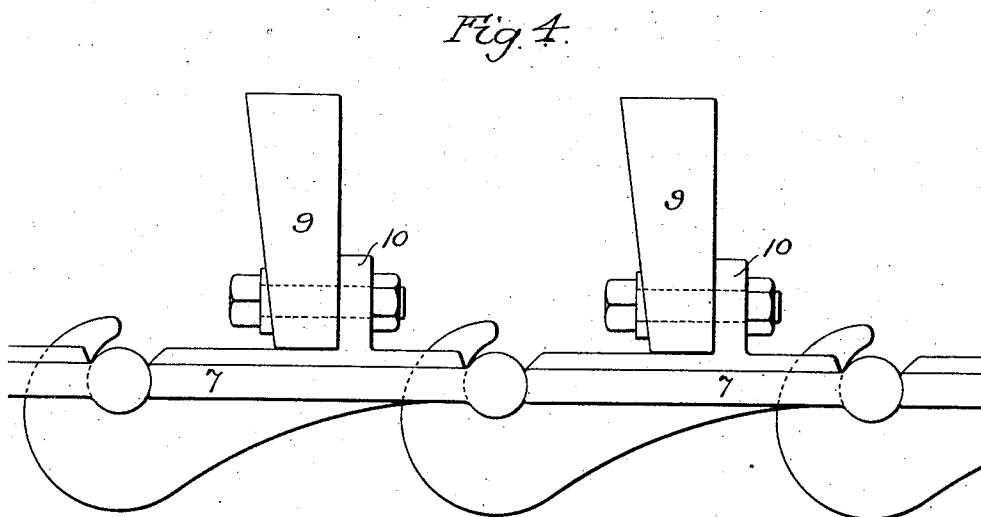
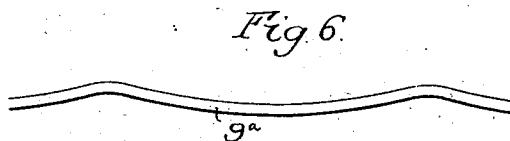
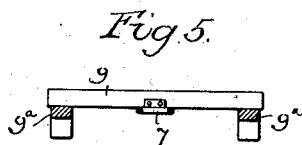
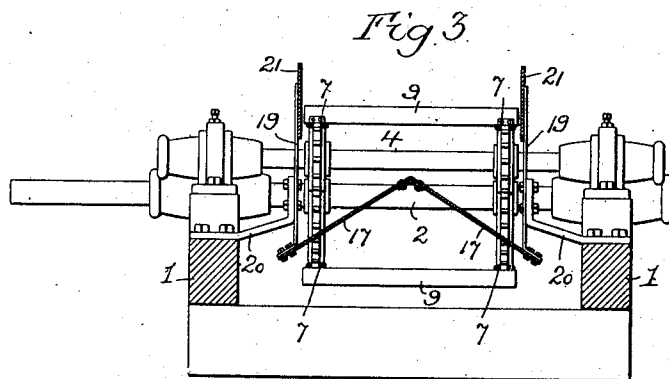
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by his Attorneys
Smith & Rogers

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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

UTLEY WEDGE, OF ARDMORE, PENNSYLVANIA.

SCREENING-CONVEYER.

973,597.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed May 12, 1908. Serial No. 432,522.

To all whom it may concern:

Be it known that I, UTLEY WEDGE, a citizen of the United States, residing in Ardmore, Pennsylvania, have invented certain

Improvements in Screening-Conveyers, of which the following is a specification.

The object of my invention is to provide a screening conveyer possessing qualities of strength and durability which will adapt it for use in the screening and conveying of ores and other rough and heavy material, the conveyer being also constructed with special reference to preventing clogging of the screening surface.

In the accompanying drawings Figure 1 is a top or plan view of a screening conveyer constructed in accordance with my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a transverse section, on the line *a-a*, Fig. 2; Fig. 4 is a side elevation, on an enlarged scale, of part of the screening and conveying member of the machine; Fig. 5 is a transverse section of part of a modified form of the conveyer, and Fig. 6 is a side elevation of part of one of the members of the same.

The frame of the conveyer consists of a pair of oppositely disposed longitudinal beams 1, suitably supported and laterally braced, these beams carrying bearings for a series of shafts 2, 3, 4 and 5, the shaft 2 being the driving shaft of the machine and having power applied to it in any convenient way in order to effect its rotation in the direction of the arrow, Fig. 2.

The shaft 2 carries a pair of sprocket wheels 6 properly spaced and serving to impart movement to a pair of endless chains 7, preferably of the detachable link type, these chains being connected by transverse bars 9 suitably secured at their opposite ends to corresponding links of the chains, this result being attained in the present instance by providing each link with a flange 10 to which the bar 9 is rigidly bolted. (See Fig. 4.)

A conveyer of greater capacity may have more than two chains, each with corresponding sprocket wheel on the shaft 2, or the conveyer may have but a single central chain, as shown in Fig. 5, the outer ends of the bars 9 being supported upon bars 9^a, which may be of such conformation (see Fig. 6) as to permit any desired sag of the upper run of the conveyer.

The shaft 3 carries a drum 11, at the ends of which are located sprocket wheels for en-

gagement with the chains 7 and said shaft is adapted to bearings 12, which are adjustable longitudinally in guides 13 mounted upon the beams 1, such adjustment being effected by means of screws 14 which are provided with handles 14^a, have swivel connection with the bearings 12 and are adapted to nuts 15 secured to or forming part of the outer portions of the guide structures 13, as shown in Fig. 1.

The intermediate shafts 4 and 5 are at a higher level than the end shafts 2 and 3, and said shafts 4 and 5 are provided with sheaves 16 for supporting the upper runs of the endless chains 7. The chains and their connecting bars 9 thus form a combined conveyer and screen, since, if a mixture comprising large and small lumps is dumped upon the upper run of the conveyer, say at or about the point *x* in Fig. 2, said mixture will be carried forwardly by the upper run of the conveyer and during its passage the smaller lumps will pass through the spaces between the bars 9, only the larger lumps remaining upon the surface of the conveyer and being delivered at the point where said conveyer passes around the drum 11.

The finer lumps, after passing through the upper run of the conveyer, fall upon a deflector 17 of inverted V-shape, located between the upper and lower runs of the conveyer and supported upon vertical bars 19, which are mounted by means of brackets 20 upon the longitudinal beams 1 of the frame, the upper ends of said bars 19 carrying guard plates or shields 21, which extend longitudinally throughout the upper run of the conveyer, outside of, but comparatively close to, the ends of the bars 9, in order to insure the lateral confinement of the mass of material under treatment within the limits of said upper run of the conveyer. The deflector 17 discharges the finer lumps falling thereupon into any suitable receptacle located below it.

Any lumps passing through the upper run of the screen when it is approaching the delivery end of the conveyer, will strike the drum 11, and will be directed thereby onto the deflector 17, and thus prevented from falling onto the inner side of the lower run of the conveyer, where they would otherwise accumulate and interfere with the operation of the conveyer.

As the driving shaft is at the rear or receiving end of the conveyer, the lower run

of the latter is under tension and is drawn tight, while the upper run is slack, and the drum-carrying shaft 3 can be so adjusted in respect to the driving shaft 2 of the machine that said upper run of the conveyer may have any desired degree of slack and will therefore sag between the supporting sheaves 16 and between the latter and the sprocket wheels 6 or drum 11, the result being that the bars 9 are continually changing their positions in respect to one another, so as to work out from between them lodged lumps approximating in size to the width of the spaces between the bars, thereby preventing these lumps from being caught and held between successive bars, where they would eventually clog the conveyer and prevent or interfere with the proper performance of its intended separating function.

By adjusting the bearings which carry the drum shaft 3, the amount of slack in the upper run of the conveyer may be regulated so as to best insure the performance of its self-cleaning function in connection with the particular kind of material which is being acted upon.

I claim:

1. The combination, in a screening conveyer, of one or more endless chains, spaced and upstanding transverse bars carried thereby, and so disposed that the bars of the upper run of the conveyer constitute the sole supporting, screening and conveying means for the material under treatment,

supporting and operating means for the chains, and a deflector interposed between the upper and lower runs of the conveyer.

2. The combination, in a screening conveyer, of one or more endless chains, spaced and upstanding transverse bars carried thereby, and so disposed that the bars of the upper run of the conveyer constitute the sole supporting, screening and conveying means for the material under treatment, supporting and driving means for the chains so disposed that the upper run of the conveyer is caused to sag between its supports, and a deflector interposed between the upper and lower runs of the conveyer.

3. The combination, in a screening conveyer, of one or more endless chains, spaced and upstanding transverse bars carried thereby and so disposed that the upper run of the conveyer constitutes the sole supporting, screening and conveying means for the material under treatment, supporting and driving means for the chains at the ends of the conveyer, and intermediate supporting devices for the upper run of the conveyer so disposed that said upper run of the conveyer is caused to follow an undulating course.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

UTLEY WEDGE.

Witnesses:

HAMILTON D. TURNER,
KATE A. BEADLE.