No. 780,145. PATENTED JAN. 17, 1905.

L. K. VAUGHAN.

BELT CONVEYER.

APPLICATION FILED AUG. 18, 1904.

Fig. 1.

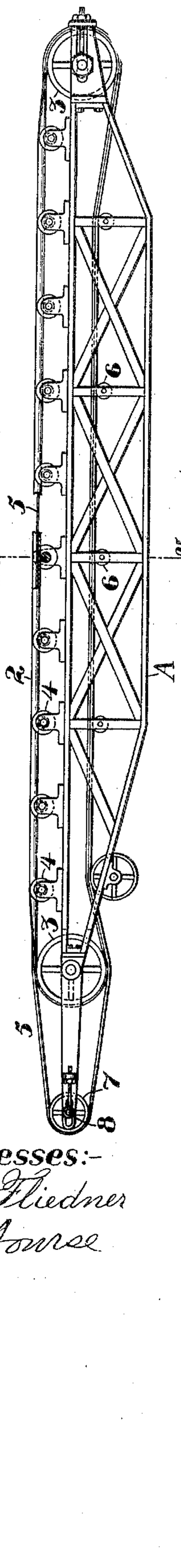


Fig. 4.

Fig. 3.

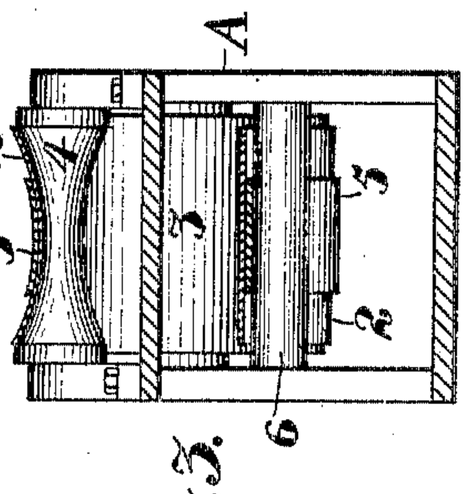
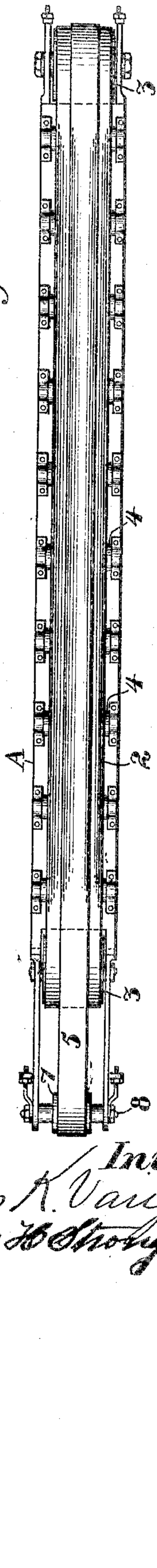


Fig. 2.



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No. 780,145. Patented January 17, 1905.

UNITED STATES PATENT OFFICE.

LOUIS K. VAUGHAN, OF OROVILLE, CALIFORNIA.

BELT CONVEYER.

SPECIFICATION forming part of Letters Patent No. 780,145, dated January 17, 1905.

Application filed August 18, 1904. Serial No. 221,226.

To all whom it may concern:

Be it known that I, LOUIS K. VAUGHAN, a citizen of the United States, residing at Oroville, in the county of Butte and State of California, have invented new and useful Improvements in Belt Conveyers, of which the following is a specification.

My invention relates to improvements in belt conveyers for handling coal, sand, gravel, and like coarse heavy granular matter, and pertains especially to tailings-stackers for gold-dredgers.

The object of the invention is to prevent the disastrous wear that now occurs with belt carriers of the above type, and thereby save or lessen to a great degree the expense of frequent renewal of the belts.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which--

Figure 1 is a side elevation of an apparatus, showing application of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a section on line // // of Fig. 1 on a larger scale. Fig. 4 is a section through conveyer and pad, showing latter with both sides adapted as wearing-surfaces.

A represents the frame or boom of an ordinary tailings-stacker having the usual troughed conveyer-belt 2, supported at the ends on drums 3 and intermediately on the troughing-rollers 4, which latter give the belt its trough or crescent shape. These belts being usually of rubber and of considerable length and breadth are very expensive. Where all the wear from the incumbent gravel and sands comes directly on the belt, it is only a few months before the belt is worn out and has to be discarded. This wear, of course, comes principally in the middle or bottom of the belt-trough, and no sooner does a hole appear in the belt than the entire belt is rendered useless and has to be replaced by a new one, although the sides of the belt show little or no wear. I have discovered that if a second belt 5 is employed and made to inclose the first belt, with the upper plane of the second belt resting centrally on and lying parallel with the upper plane of the first belt, and the two belts driven in unison practically the whole wear from the rocks, sand, and gravel will be taken by this second belt, which latter constitutes, in fact, an endless shoe or wearing-pad. Since this shoe or wearing-pad need not be of first-quality material nor wider than sufficient to support the bulk of the load on the traction-belt 2, it is possible to use belt-scraps of all sorts of the proper width and also to use the lateral unworn portions of a cast-off main belt, like belt 2. When one of these shoes is worn out, a new one can be put on at small expense compared with the cost of the single broad belt now solely depended on. If desired, this protective belt may be heavily coated with rubber on both sides, so that when one side has become worn to a considerable extent the belt may be turned over and made to last twice as long. Being only half as wide as the main belt 2 or wide enough sufficient only to support the load, (the sides of belt 2 being subject to very little wear need no protection,) the cost of a protective belt even of this character is far less than the broad main belt 2. This protective belt 5 lies generally contiguous to the upper and lower planes of belt 2, both belts passing together around one of the drums 3 and being supported along their lower planes of travel on rollers 6. The opposite end of belt 5, however, is independently supported on a drum 7, mounted on a shaft 8, which is journaled in boxes adjustable longitudinally of the frame A to maintain the tension of belt 5 and keep it central of belt 2. Power may be applied to either of drums 3 to operate both belts in unison. This protective belt or shoe may be applied to all endless-belt carriers for handling coal, sand, gravel, or other heavy gritty matter. It will not only take the major part of the wear and tear, but the two belts will give a stiffened support for the load traveling over the rollers, and so prevent sagging or bagging of the conveyer between the rollers, thereby reducing friction and wear and requiring less power to move a given load.

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

1. The combination with a conveyer-belt, of a traveling protective shoe of less width than the belt and lying centrally within the belt and readily separable therefrom.

2. The combination with a conveyer-belt, of a removable and reversible shoe lying centrally of said belt and serving as a protection therefor.

3. A protective shoe for endless-belt conveyers comprising a second belt inclosing and lying centrally of and traveling with the main belt, said protective belt having both sides adapted as wearing-surfaces.

4. A protective shoe for endless-belt conveyers comprising a second belt inclosing and lying centrally of and traveling with the main belt, said protective belt of lesser width than the main belt.

5. A protective shoe for endless-belt conveyers comprising a second belt inclosing and lying centrally of and traveling with the main belt, said protective belt of lesser width than the main belt and having both sides adapted as wearing-surfaces.

6. The combination with a suitable support, of a series of three parallel drums journaled therein upon independent axes, an endless conveyer-belt passing around one of said drums at the end of the series and around the intermediate drum, and a second belt, independent of the first belt, passing around both outer drums and lying centrally on and movable in unison, and parallel with the first-named belt.

7. The combination with a suitable support, of a series of three parallel drums journaled therein, an endless conveyer-belt passing around one of said drums at the end of the series and around the intermediate drum, and a second belt passing around both outer drums and lying centrally on and movable in unison, and parallel with the first-named belt, said second belt being of lesser width than the first belt.

8. The combination with suitable supporting means of an endless traction-belt, and a protective shoe for said traction-belt comprising an endless belt of less width than the traction-belt and inclosing the latter and arranged central thereof and parallel therewith.

9. A tailings-stacker comprising a frame, an endless trougned belt supported thereon, and a second endless belt inclosing and extending beyond, and traveling in unison with the first, said second belt being disposed centrally of the first belt and having a wearing-surface on both sides adapting it to be turned over and used.

10. An endless-belt conveyer having a separate and readily-removable central protective shoe or wearing-pad on its supporting-surface.

11. An endless-belt conveyer having a separate and readily-removable central protective shoe or wearing-pad on its supporting-surface, said pad of lesser width than the conveyer.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LOUIS K. VAUGHAN.

Witnesses:
J. W. WILSON,
CHARLES TWOONEY.