

J. J. RIDGWAY.
BELT CLEANER.
APPLICATION FILED APR. 10, 1911.

1,013,899.

Patented Jan. 9, 1912.

3 SHEETS—SHEET 1.

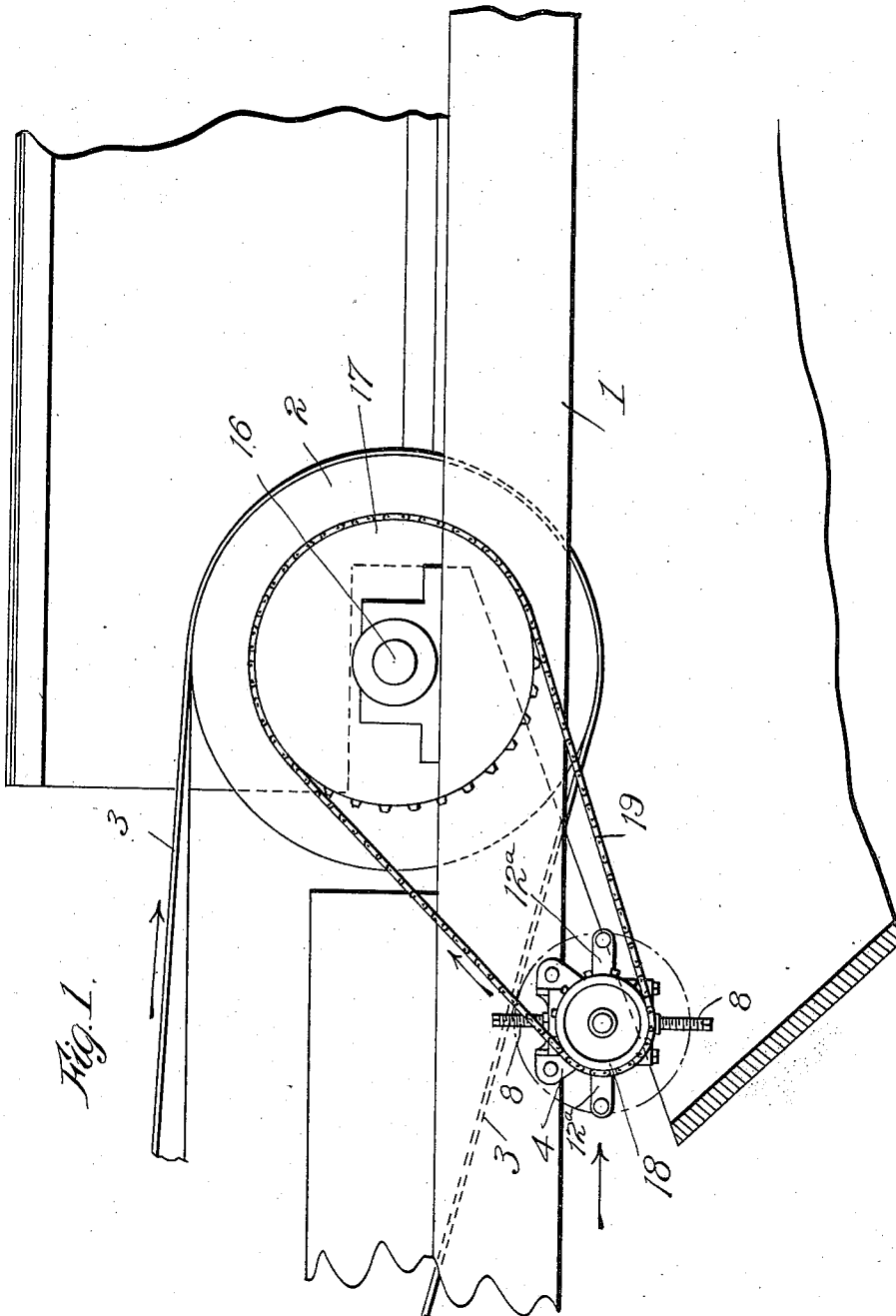


Fig. 1.

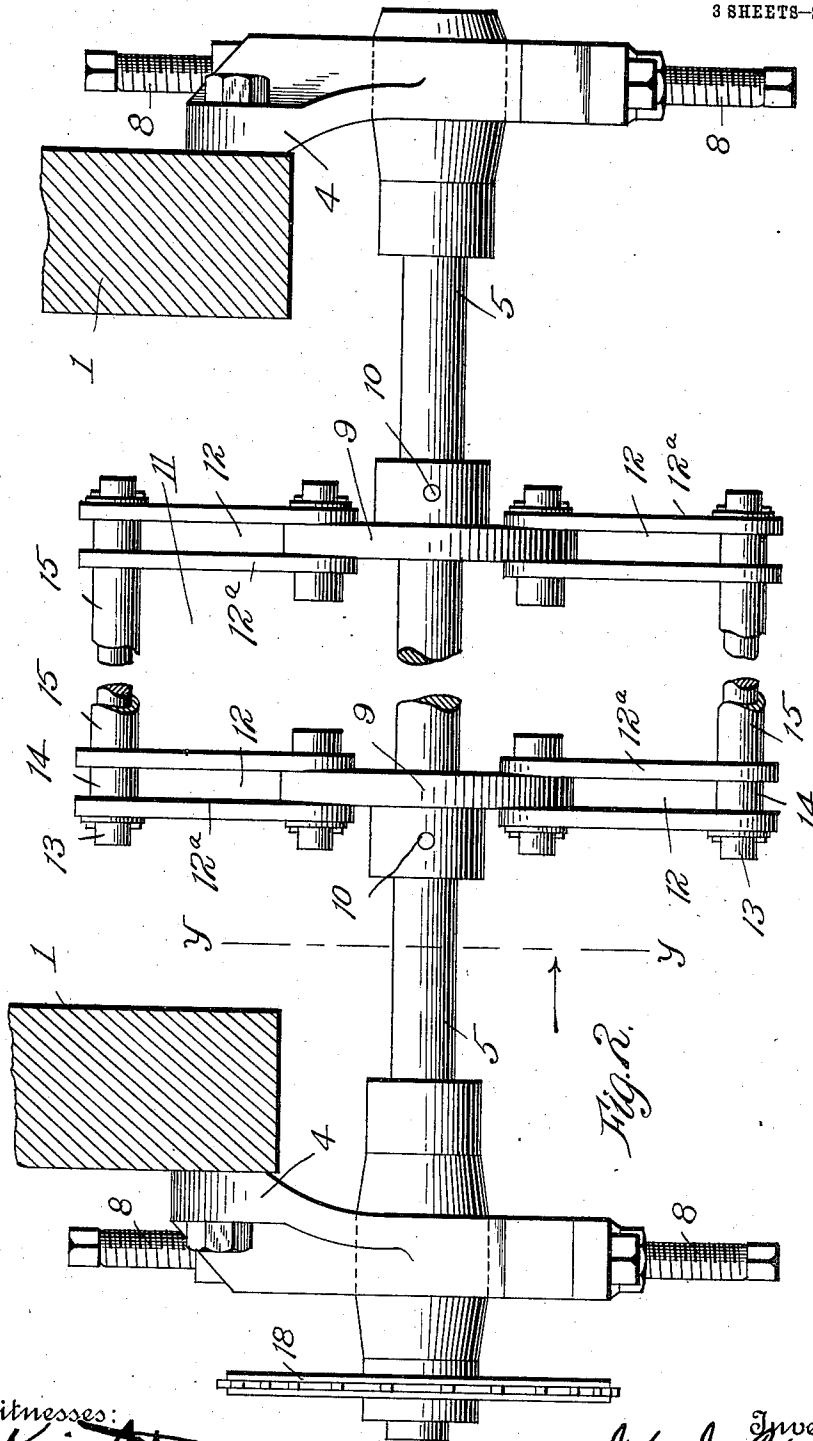
Witnesses:
H. H. Knight
H. Alfred Faulke

Inventor
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By his Attorneys
[Signature]

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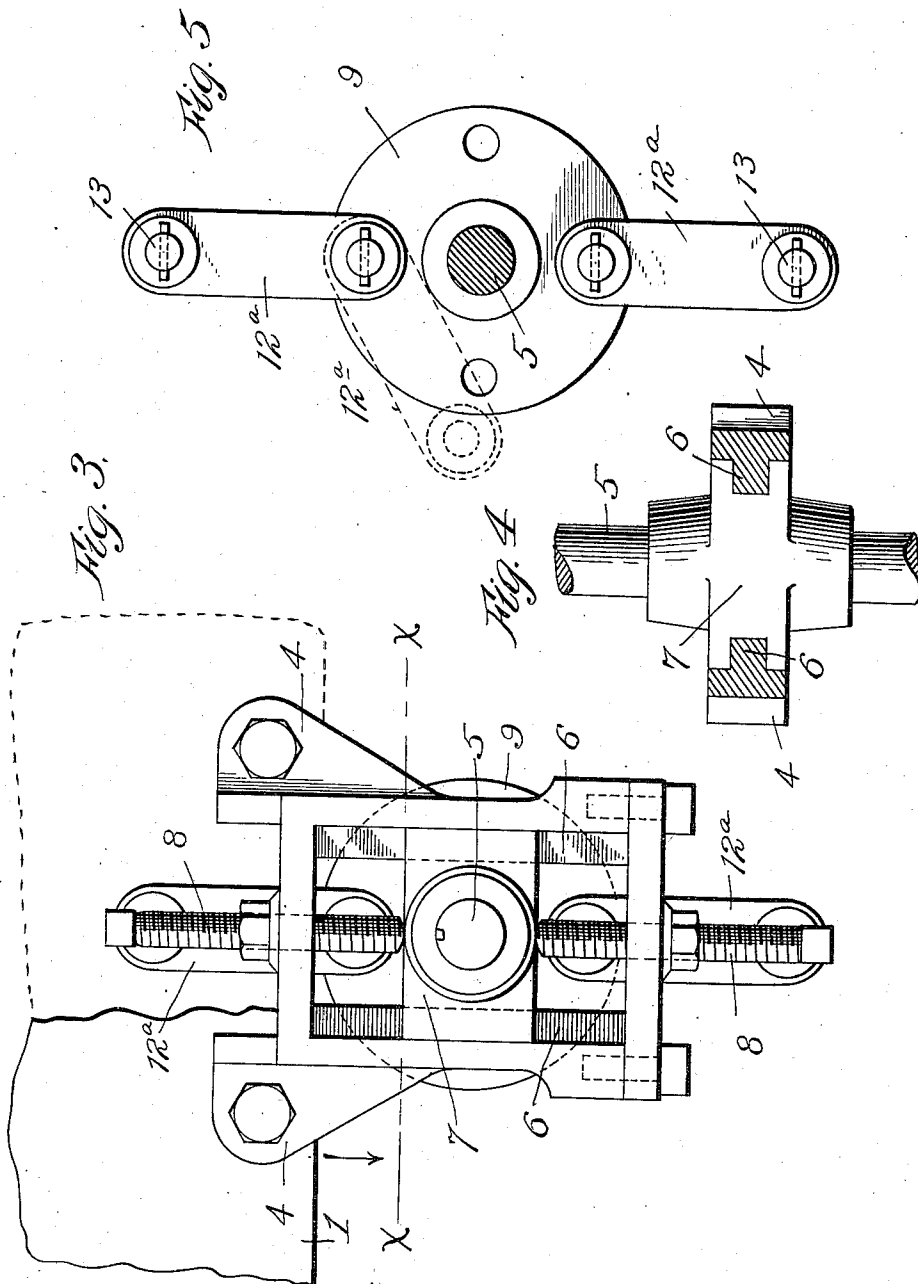
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UNITED STATES PATENT OFFICE.

JOHN J. RIDGWAY, OF NEW YORK, N. Y.

BELT-CLEANER.

1,013,899.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed April 10, 1911. Serial No. 620,077.

To all whom it may concern:

Be it known that I, JOHN J. RIDGWAY, a citizen of the United States, and resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Belt-Cleaners, of which the following is a full and clear specification, illustrated in the accompanying drawings, the particular novel features of the invention being set forth in the annexed claims.

My invention relates to belt cleaners of the type which removes foreign matter from driving or conveying belts by beating the belt, whereby such foreign matter is shaken loose from the belt surface and prevented from being rolled into the surface.

My invention is particularly adapted for so called conveyer belts which are more than other belts exposed to dust or foreign substances which are apt to stick to the belt and to be rolled into it by the pulleys.

The particular advantage of my novel construction is that the beating of the belt occurs without undue wear of the belt surface and that the strength of the blows imparted by the beater may be easily adjusted to suit the requirement. Moreover this novel construction is easily adjustable to any width of belt, within certain limits.

In the accompanying drawings Figure 1 is a side elevation of the belt beater in operative position. Fig. 2 is a front view of the device in larger scale, seen in the direction of the arrow in Fig. 1. Fig. 3 is a side view of the bearing frame of the device shown in Fig. 1, in larger scale. Fig. 4 is a plan view of the shaft bearing of the device on the line $x-x$ in Fig. 3, and Fig. 5 is a side view of the device on the line $y-y$ in Fig. 2, seen in the direction of the arrows.

Referring to Fig. 1, which illustrates the belt beater mounted adjacent to the main pulley, 1 is one of the stringers on which the main pulley 2 is mounted, over which the conveyer belt 3 runs in the direction shown by the arrows. The belt cleaner or beater is fastened to the lower edge of the stringers 1 in the manner shown in Figs. 1 and 2. To each stringer is attached a bearing frame 4 in which the two ends of shaft 5 are mounted in the manner shown in detail in Fig. 3. By this construction, I am enabled to raise or lower the shaft relatively to the stringers and thus to the lower run

of the belt for the purpose which will be set forth hereinafter. Bearing frame 4 contains a bearing block 7 sliding vertically therein on the guides 6, the vertical position of this block being adjusted and fixed by means of screws 8, threaded into the upper and lower portion of the frame. In this bearing block 7, is journaled shaft 5 which carries the beater which I shall now describe. This device consists of two disks 9, Fig. 2, each of which can be individually adjusted longitudinally on shaft 5 and fixed thereon, as for instance by taper pins 10. To these disks are attached the beaters 11 which consist of two double links 12 each pivotally attached at one end to a disk so that the pivotal axis of the two cooperating link pairs on the two disks are in line with each other. The outer ends of the two cooperating link pairs are pivotally connected with each other by a pivot rod 13. Each double link 12 has a spacing collar 14 mounted on pivot 13, between its individual links 12^a and equal to the thickness of the disk 9 as shown in Fig. 2. Moreover the two link pairs 12 are spaced at their outer ends by means of a tube 15, mounted on pivot 13 so that it can freely revolve thereon, the length of tube 15 being at least equal to, or rather greater than the width of the belt against which it is to operate in the manner to be described. Shaft 5 is driven from the main pulley shaft 16 by means of a pair of sprocket wheels 17 and 18 through chain 19 in the direction indicated by the arrow. When shaft 5 thus revolves the beaters 11, of which I have shown for example two, disposed diametrically opposite to each other on disks 9, will fly out by the centrifugal force and assume a radial position as shown in Fig. 5. If now, by means of adjusting screws 8, shaft 5 is raised sufficiently so as to bring the outer ends of beaters 11 with their tubes 15 in contact with the lower length of belt 3, as shown in Fig. 1, it will be noted that these beaters will strike continually glancing blows against this run of the belt and by raising shaft 5 sufficiently any strength of blow may be obtained. These blows, however, have no detrimental effect on the surface of the belt, such as for instance beaters with a wiping motion, because first of all, the beaters strike a yielding glancing blow against the belt and second, the beater striking the belt with roller or tube 15, will roll over the surface

of the belt and thus prevent undue abrasion of the surface. In case of conveyer belts where the carrying side of the belt 3 faces downward on the lower length of the belt 5 where the beater is attached, it is obvious that this beater will shake off this face any material or foreign matter which still clings to the belt after the goods have been discharged from it above. It is obvious that 10 though I have shown as an example, only two beaters attached to disks 9, any suitable number may be attached thereto to produce the desirable number of blows per foot of belt.

15 A particular advantage of my novel device is that by its arrangement it remains permanently in the desired degree of adjustment for months without attention, because the parts are not subject to wear in 20 the same degree as belt cleaners heretofore used.

What I claim is:—

1. A belt cleaner comprising a shaft journaled adjacent to the belt and running transversely thereto, a hub fixed on said shaft 25 having a suitable number of beaters pivotally attached to it and each extending across the whole width of the belt and adapted to be thrown out from said hub by centrifugal force when the shaft rotates to strike the 30 belt, each of said beaters having means at its outer end for effecting rolling engagement with the belt, and means for rotating said shaft.

35 2. A belt cleaner comprising a shaft journaled adjacent to the belt and running transversely thereto, a hub consisting of two disks fixed on said shaft apart from each other a distance approximately equal to the 40 belt width, said disks conjointly pivotally holding a suitable number of beaters which are thrown out from said disks by centrifugal force when the shaft rotates to strike the belt, and means for rotating said shaft.

45 3. A belt cleaner comprising a shaft journaled adjacent to the belt and running transversely thereto, a hub consisting of two disks fixed on said shaft apart from each other a distance approximately equal to the belt 50 width, said disks conjointly pivotally holding a suitable number of beaters which are thrown out from said disks by centrifugal force when the shaft rotates to strike the

belt, means for moving and securing said shaft any desirable distance away from said 55 belt to increase or decrease the force of the blow of said beaters against said belt and means for rotating said shaft.

4. A belt cleaner comprising a shaft journaled adjacent to the belt and running transversely thereto, a hub consisting of two 60 disks fixed on said shaft apart from each other a distance approximately equal to the belt width, said disks having conjointly pivoted to them a suitable number of beaters, 65 each beater comprising two double links, one double link pivotally attached to each of said disks, with its pivotal axis in line with that of the link on the other disk, a pivot rod connecting the outer ends of said two 70 double links and having a tubular roller disposed between said links, of a length approximately equal to the width of the belt, said links being thrown out from said disks by centrifugal force when said shaft ro- 75 tates whereby said rollers strike said belt a glancing blow, and means for rotating said shaft.

5. A belt cleaner comprising a shaft journaled adjacent to the belt and running transversely thereto, a hub consisting of two disks 80 fixed on said shaft apart from each other a distance approximately equal to the belt width, said disks having conjointly pivoted to them a suitable number of beaters, each 85 beater comprising two double links, one double link pivotally attached to each of said disks, with its pivotal axis in line with that of the link on the other disk, a pivot rod connecting the outer ends of said two 90 double links and having a tubular roller disposed between said links, said links being thrown out from said disks by centrifugal force when said shaft rotates whereby said rollers strike said belt a glancing blow, 95 means for moving and securing said shaft any desirable distance away from said belt to increase or decrease the force of the blow of said rollers against said belt and means for rotating said shaft against the direction 100 of travel of said belt.

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