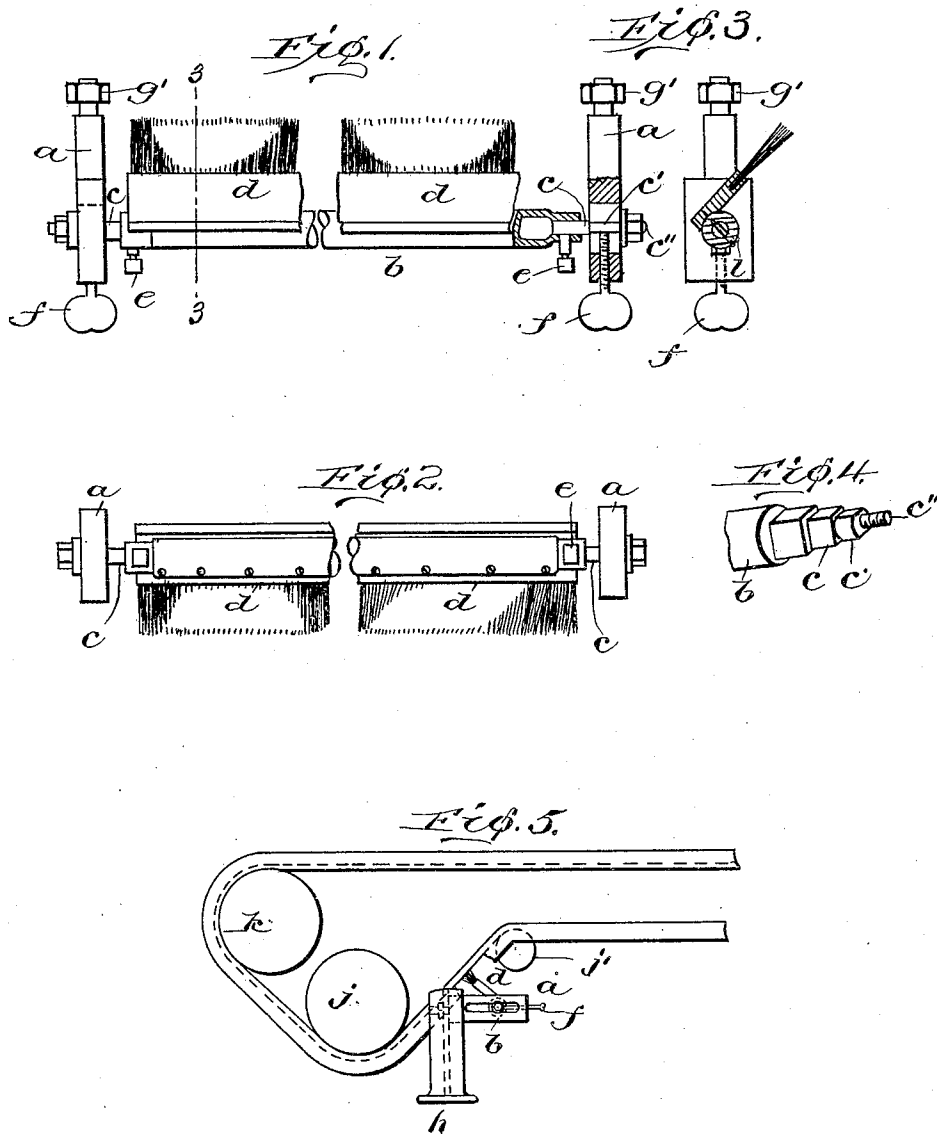


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BELT CLEANER.
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932,434.

Patented Aug. 31, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ANDREW BOWEN, OF SALT LAKE CITY, UTAH.

BELT-CLEANER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN ANDREW BOWEN, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Belt-Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in belt cleaners, and particularly to belt cleaners for concentrating machines, and has for an object the provision of means that will automatically and continuously clean the belt of a concentrating machine or other device as the belt passes thereover.

Another object of the invention is the provision of a belt cleaner arranged to be adjusted toward or from the belt, and also provided with means for being adjusted transversely of the belt.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a top plan view of the brush and holding means, part of the holding means being shown in section. Fig. 2 is a side elevation of brush and holding means shown in Fig. 1. Fig. 3 is a section through Fig. 1, approximately on line 3—3. Fig. 4 is a detail fragmentary view of one end of a mandrel and brush carrying shaft. Fig. 5 is a side elevation of part of a concentrating belt and means for supporting the same, a brush and support being shown in connection therewith.

In concentrating machines it is desirable to remove as much as possible of foreign matter from the ore, and also to remove some of the less valuable matter preparatory to smelting the ore. In accomplishing this various means as for instance washing of the ore is used but difficulty has been experienced in removing the concentrated matter from the undesirable matter, and also difficulty has been experienced when the concentrator uses a belt in removing the concentrated material at a desired point and preventing such material from passing through the concentrator a second time.

In the present invention means are pre-

sented that are designed to be used with a belt on a concentrating machine and to overcome the objections suggested. In this invention a brush is provided at any desired point at which the concentrated material is designed to be removed. A holder for the brush is arranged for permitting the brush to be adjusted toward or from the belt so as to vary the pressure of the brush against the belt. In order to positively arrange the brush so as to not miss or fail to contact with the belt a pair of mandrels or what might be more properly termed a divided member are connected with the brush so that the brush may be adjusted laterally or transversely of the belt.

In order to disclose one embodiment of the invention I have disclosed one complete operative device in the accompanying drawings in which—

a—a indicate supporting brackets in which are formed slots or elongated slides *a'—a'* in which mandrels *c—c* are adapted to slide or reciprocate. The mandrels *c—c* are arranged with squared portions that fit into a hollow shaft *b* which carries a brush *d*. The squared portions of the mandrels *c—c* may be adjusted to any desired position in the shaft *d* and then locked or positively secured in that position by set screws *e—e*. In order to prevent the mandrels *c—c* from rotating the same are provided with extensions *c'—c'* that have flattened sides which engage slots *a'—a'*. In order to properly hold the mandrels *c—c* in their supports *a—a* reduced portions *c''—c''* are formed thereon that are adapted to receive suitable nuts.

The supports *a—a* are secured to uprights *g—g* by any desired means as for instance nuts *g'—g'*. The supports *g—g* are provided with suitable bases *h—h* for preventing the same from being moved out of place and for affording means through which securing bolts may be passed if desired for positively securing the supports in position. The supporting brackets *a—a* are arranged substantially at right angles to their supports *g—g* (Fig. 5) so that brush *d* may engage belt *i* at a right angle while the same is passing from roller *j* to roller *j'*. The belt *i* is at this point traveling in an upward direction so that as the brush contacts with the same the material brushed off the belt may easily fall directly downward into a box or receptacle provided therefor. When it is desired to bring a greater or less amount of

pressure on brush *d* the same may be adjusted toward or from belt *i* by moving adjusting set screws *f-f*.

In operation the material to be concentrated is placed upon the upper part of the belt and is concentrated in the usual manner as for instance by washing and the undesirable matter, together with the water, passes over pulley or roller *k* and from thence is precipitated downward through the air to any desired place and from thence may be removed as desired. The concentrated matter, however, will cling to the belt and will be scraped off by brush *d*. After having been scraped off by brush *d* the concentrated material will be precipitated into a suitable box or other receptacle and from thence removed to any desired point. The brush *d* may be given the proper tension by set screws *f-f* in order to cause the same to brush off or scrape from the belt *i* all of the concentrated material so that as belt *i* passes over brush *d* toward the front end of the concentrating machine the same will be cleaned and ready for receiving new matter to be concentrated.

The brush *d* may be held in position upon shaft *d* which is preferably hollow by any desired means as for instance screws *d'*. Preferably the screws *d'* are inserted or passed through shaft *d* from the opposite side of the same to which the brush is positioned so that as the respective screws enter the brush, the brush will be drawn tightly against the shaft and held firmly in that position. It is, of course, obvious that bolts or other securing means might be substituted for the screws *d'*.

The invention has been described in connection with a concentrating machine as the means set forth are particularly desirable in

such machines but it will be obvious that the device may be used for cleaning belts used in other machines, and also other traveling surfaces.

What I claim is:

1. In a device of the class described, the combination of an element having a moving surface, a brush for engaging and cleaning the same, a hollow mandrel for supporting said brush formed with a hollow end square in cross section, a bar formed square in cross section positioned in each end of said mandrel, a set screw adjustably clamping said bar in position in the mandrel, a bracket formed with a slot for adjustably sustaining said bar, and a member threaded into said bracket and engaging said bar for varying the tension of the brush against said moving element.

2. In a device of the character described, the combination of a moving element, a brush for engaging and cleaning the same, a mandrel for supporting said brush formed with hollow ends square in cross section, a bar formed square in cross section positioned in each end of said mandrel and projecting therefrom, means for adjustably securing said bars in said mandrel, a bracket for each of said bars formed with a rectangular slot for accommodating the ends of said bars, and an adjusting member for varying the position of said bars in said slots whereby the tension of said brush against said moving element is varied.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ANDREW BOWEN.

Witnesses:

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W. A. SLATER.