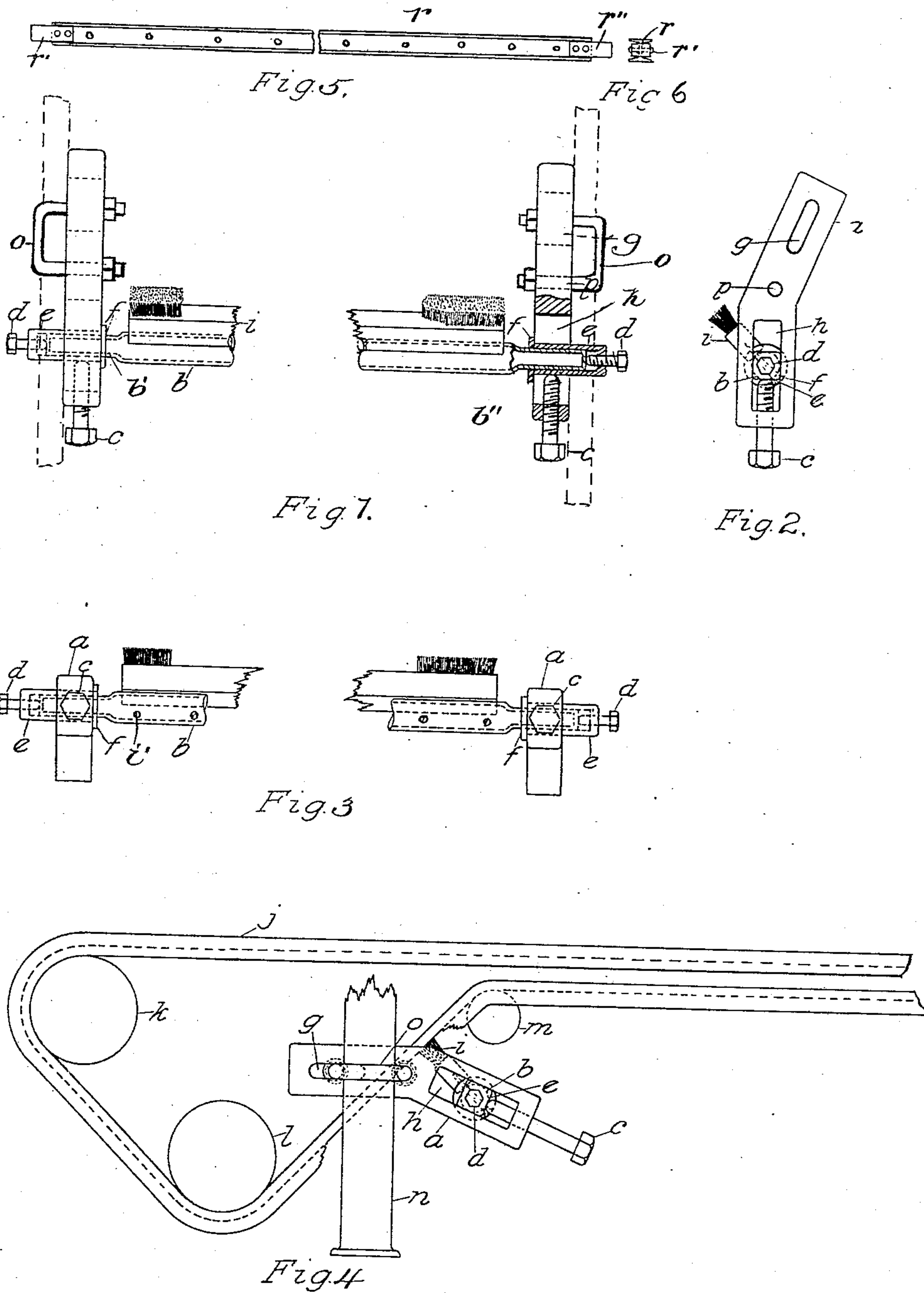


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BELT CLEANER.

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Patented Oct. 12, 1909.



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JOHN A. 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 A. BOWEN, 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 and be susceptible of adjustment toward and from the belt and laterally in respect thereto at all times.

Another object of the invention is the provision of a belt cleaner arranged to clean the same during the movement of the belt in operation and broadly similar to applicant's co-pending application #445,620, filed July 27, 1908.

A further object of the invention is the provision of a belt cleaner that has a specified point for cleaning the belt as the same moves and discharging the matter removed from the belt at a particular point.

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 my improved belt cleaner, certain parts being broken away to better disclose the construction. Fig. 2 is an end view of the structure shown in Fig. 1. Fig. 3 is a bottom plan view of the structure shown in Fig. 2. Fig. 4 is an end view of my improved belt cleaner shown in position and in connection with a belt. Fig. 5 is a plan view of a slightly modified form of brush carrying bar. Fig. 6 is an end view of Fig. 5.

In concentrating machines that use moving belts it is very desirable to continuously move the belt and to have means that will clean the belt during its movement so as to present a clean belt to the new matter to be concentrated. My improved belt cleaner is adapted to be used in connection with concentrating machines and will accomplish the above desirable result suggested and not

only clean the belt but deposit the matter removed from the belt at a particular place from which it may be carried or removed to any desired place.

In the accompanying drawings I have disclosed an embodiment of my invention in which *j* indicates a belt upon which is concentrating any desired material and which is adapted to pass around rollers *k*, *l* and *m* at one end and at the other end around suitable rollers not shown. The position of the roller *k* causes the material or matter washed during the concentrating period to be projected from the belt as the same begins its return movement and the rollers *l* and *m* cause the belt to travel at a considerable angle, preferably at a 45 degree angle past the brush *i* which is adapted to remove all of the matter clinging to the belt and to deposit the same substantially directly below the point at which the brush engages the belt. Fig. 4 shows a preferred arrangement but some other arrangement could be used within the spirit of the invention, the main feature being the way the brush *i* is caused to engage the belt and the various means for supporting and manipulating the brush.

The brush *i* may be of any desired kind and is arranged to be secured by any desired means as screws *i'* to a cross bar *b* which may be hollow or solid as most desirable but formed with reduced ends or mandrels *b'* and *b''*. The ends *b'* and *b''* are squared or formed with flat sides for engaging thimbles or sleeves *e*, *e* which are provided with suitable flanges *f*, *f*. The sleeves or thimbles *e*, *e* are adapted to fit the reduced ends of bar *b*, and also to have two faces of their outer surfaces engage the sides of opening *h* in the supporting brackets *a*, *a* so as to permit a free sliding movement of the sleeves in the slot under the action of set screws *c*, *c* and yet be prevented from turning so as to always hold the brush *i* at a proper angle in respect to belt *j*. The sleeves *e*, *e* are provided with set screws *d*, *d* that engage the ends of the reduced portions *b'* and *b''* and are turned until the ends of the set screws have engaged the ends of the reduced portions of bar *b* and also the flanges *f*, *f* have engaged the brackets *a*, *a*. After the sleeves and bar *b* have taken this position bar *b* may be adjusted longitudinally or transversely of the belt *j* by loosening up on one of the set screws *d* and tightening up on the other.

The respective sleeves *e, e* are engaged by set screws *c, c* so as to push the same transversely along slots *h* for adjusting the brush *i* toward or from belt *j*. It will be observed
 5 that the set screws *c, c* simply force the brush *i* toward the belt and in order to relieve any pressure of the brush against the belt set screws *c, c* must be turned in a reverse direction.

10 In mounting the belt cleaner the belt *j* is preferably caused to pass around roller *k* so as to discharge water and dirt at that point and to then cause the belt *j* to move downward around the roller *l* for causing the same
 15 to pass brush *i* at a considerable angle. The brush *i* is then secured to bar *b* and bar *b* secured in brackets *a, a* as heretofore set forth. The brackets *a, a* are then mounted upon supports *n, n* positioned on each side of the
 20 belt *j* by means of U shaped bolts *o* passing through slots *g* and apertures *p*. By the use of U shaped bolts *o* and slots *g* the brackets may be supported at any desired place upon support *n* and the support *n* may be of vary-
 25 ing sizes, the slot *g* accommodating the spreading of the bolt *o* in case of increase in size of support *n*. After the brackets have been properly secured to their supports *n* the set screws *c, c* are adjusted for supporting
 30 the brushes *i* against the belt *j* and by this construction the brushes may be pressed against the belt *j* to any desired extent for removing matter therefrom. Also it will be
 35 observed that the pressure of the brush *i* against the belt may be varied as occasion may require and consequently save the wear upon the brush and belt, a heavy pressure being used when the matter sticks closely to the belt and a light pressure being used when
 40 the adhesion to the belt is only light.

In Figs 5 and 6 will be seen a slightly
 45 modified form of bar *r* which may be used in place of bar *b*. The bar *r* is made in the form of an I beam and has secured to the ends thereof blocks or mandrels *r'* and *r''* which are adapted to take the place of reduced portions *b'* and *b''* which when used fit into the sleeves *e, e*. The blocks *r'* and *r''* may be of
 50 any desired length for accommodating the length of the sleeves *e, e* and it will be of course evident that the sleeves *e, e* may be of any desired length for permitting any desired amount of lateral adjustment of the brush in regard to the belt. The bar *r* is
 55 provided with any desired number of aper-

tures through which the securing screws *i'* may pass in securing the brush *i* in place.

My improvement in belt cleaners has been specifically set forth in regard to cleaning
 60 belts for concentrators, but it will be evident that the same will be of equal advantage in cleaning belts for other purposes. The means for clamping the supporting brackets in place and also the means for adjusting the
 65 brush transversely in respect to the belt and toward and from the same presents a device that is adapted to cause the brush to exert the proper pressure against the belt at the proper place for cleaning the same regard-
 70 less of what kind of a belt is being cleaned. In case one brush is not sufficient for thoroughly cleaning any particular belt a second brush could be used which would be simply a duplication of the showing disclosed in
 75 Fig. 4.

What I claim is:

1. In a device of the class described, the combination with a brush, of spaced up-
 rights, brackets adapted to be adjusted verti-
 80 cally upon the uprights, and provided with inclined slots, sleeves inserted through the slots, flanges formed upon the inner extremities of the sleeves positioned to bear against the brackets, a mandrel inserted within the sleeves for supporting said brush, and ten-
 85 sion means inserted through the sleeves and bearing against the mandrel.

2. In a device of the class described, the combination with a brush, of spaced up-
 rights, brackets adjustable vertically upon
 90 the uprights, means adapted to permit horizontal adjustment of the brackets relative to the standards, said brackets being provided with inclined slots, sleeves each having a
 95 flange at one end inserted through the slots with the flanges in engagement with the brackets, a mandrel for supporting said brush having its opposite ends inserted within the sleeves, and tension means in-
 100 serted through the brackets and bearing upon the ends of the mandrels, and positioned to bind the flanges in engagement with the brackets.

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

JOHN A. BOWEN.

Witnesses:

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