

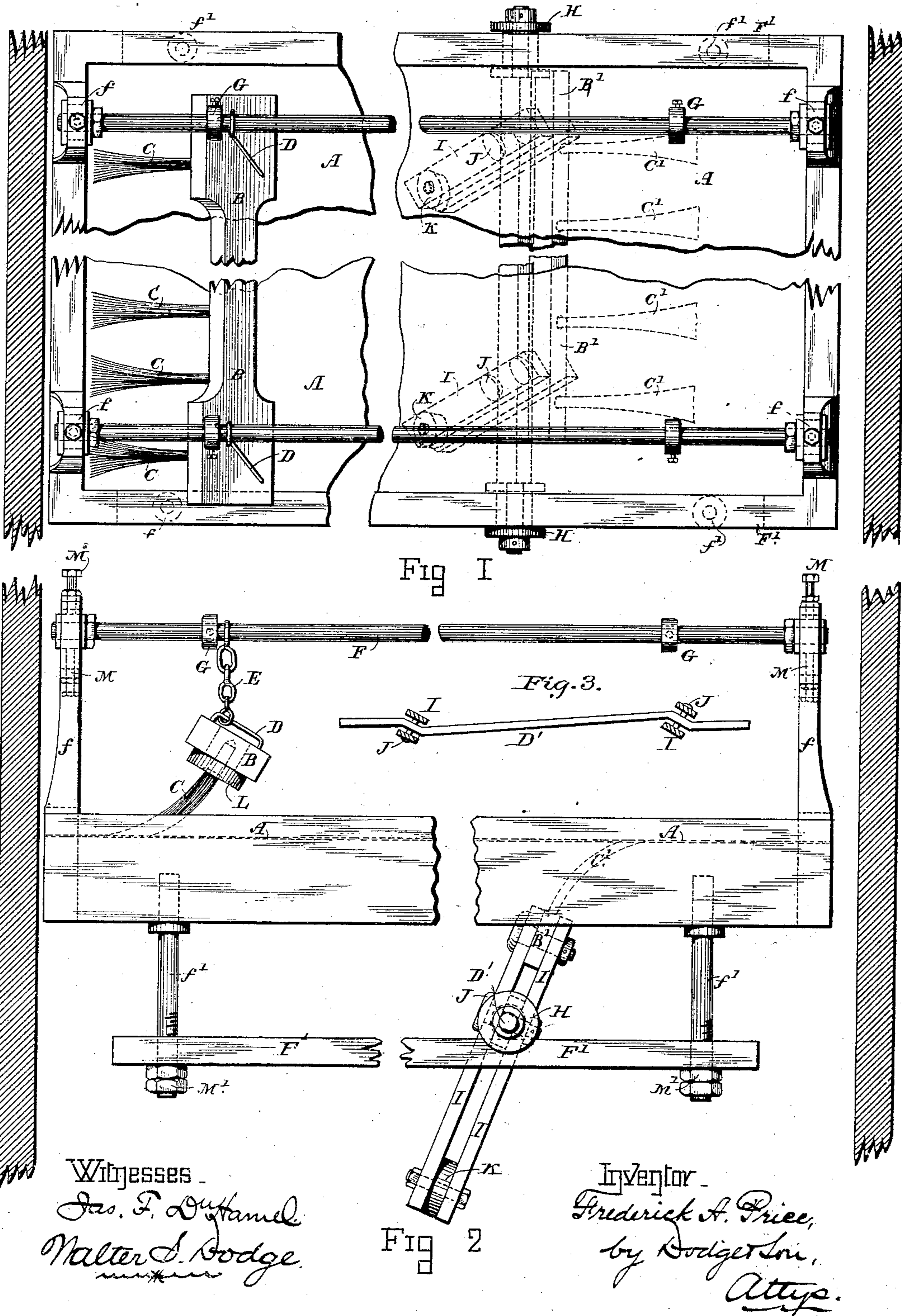
(No Model.)

F. A. PRICE.

BRUSHING APPARATUS FOR SIEVES.

No. 315,066.

Patented Apr. 7, 1885.



Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK A. PRICE, OF GRESFORD, NEAR WREXHAM, COUNTY OF
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BRUSHING APPARATUS FOR SIEVES.

SPECIFICATION forming part of Letters Patent No. 315,066, dated April 7, 1885.

Application filed November 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK ANDREW PRICE, a subject of the Queen of Great Britain, residing at Gresford, near Wrexham, in the
5 county of Denbigh, and Kingdom of Great Britain, have invented certain new and useful Improvements in Brushing Apparatus for Sieves, of which the following is a specification.

10 This invention has for its object the brushing of sieves, both above and below, by means of self-acting brushes, such as that set forth in my Patent No. 301,154; but instead of the brush having widely different forward and
15 return paths, as in said former patent, my present invention is designed to enable it to traverse the same or almost the same path in each journey.

20 In the drawings, Figure 1 is a plan, and Fig. 2 an elevation, of the apparatus; Fig. 3, a small diagram hereinafter to be explained.

In these, A is the sieve, shaken longitudinally by any convenient apparatus.

25 B is the back plate of a brush, having bunches of bristles C, so spread as to cover, preferably, about half of the sieve in any transverse line that it may pass over; or, in other words, I prefer to make the brush almost the width
30 of the sieve and make the spaces between each bunch and the next nearly as wide as the diameter of the bunch; but a continuous row of bristles can be used, if desired.

35 D is a wire arranged obliquely on the brush-back with ends bent down and firmly fixed therein. E is a chain linking into this slanting wire D. The link of the chain in traveling from one end to another of this wire measures on the length of the brush a space
40 just equal to half the distance apart of the bunches of bristles.

45 F F are two long rails or bars, extending from one end of the sieve to the other parallel with the axis of the sieve and supported on uprights or brackets *ff*. G are stops on same. The chains E are loosely linked to these rails and free to slide on them, and are of such length that the brush shall rest in a slanting position when resting on the chain and sieve when freely
50 suspended by the chains.

F' F' are two bars, supported on the frame

of the sieve by uprights or brackets *f' f'*. These bars, being shorter than bars F, require no stops, the uprights or brackets *f* themselves acting as stops.

B' is the back plate of a brush, and C' bristles, 55 preferably spread a distance apart, as in the top brush.

D' is the axis-bar or carriage upon which the brush is pivoted. This bar or carriage has runners H at its ends running upon rails F' at 60 each end.

I I are bars carrying brush and pivoted to the axis-bar D' by pins J, so that they are free to rotate in a direction transverse to the
65 sieve.

K are leaden weights, serving to keep the brush pressing against the sieve.

L are other leaden weights, serving to over-
70 balance the brush when it gets to the end of its travel, as hereinafter to be described. If the brush-back is heavy enough, these are not necessary.

The lower brush, as shown in Fig. 2, is hung so as to have no special cause to take a slightly-
75 different path in the forward journey to that taken in the return journey. In practice, however, I find that this is of little consequence and that where it is of material importance instead of having a straight bar, D, I bend the bar laterally, somewhat in one di-
80 rection at the two points where the suspension-bars are pivoted, as shown in very small scale in Fig. 3.

85 It will be seen that as the brush is not quite as wide as the sieve and the suspension-bars are freely pivoted so as to have a lateral motion, if they be pivoted on the plan shown in Fig. 3 as the brush falls over, as hereinafter described, it will sway to one side in going one way and to the other side when going the re-
90 verse way; and if the brush be of less breadth than the sieve by half the distance between one bunch of bristles and the next, the bristles in one journey will brush the strips of sieve left unbrushed in the preceding journey. 95 In practice, however, I find that this change of sides usually takes place in the bottom brush, whether the plan sketched in Fig. 3 be adopted or not, and it is still more certain to take place if the bars F' be made of equal 100

length, but one of them beginning a little nearer one end than the other, so that the brush as it arrives at the stops shall take a position slightly oblique to the axis of the screen at each end of its journey.

The operation of the device is as follows: As the sieve is reciprocated or shaken longitudinally with the bristles standing at an oblique angle to its surface, the bristles catch in the sieve when moved in one direction, but glide over it when shaken in the opposite direction. Consequently they slowly travel along. When, however, their supporting-pieces come to the stops $f f'$, the brushes, traveling on after their supporting-pieces are stopped, gradually attain the vertical position and fall over when their position in relation to their sieve is reversed and they commence their return journey.

The *vis inertiae* of the brush is usually quite sufficient, in combination with the shaking, to cause the brush to travel at a sufficient speed; but if the brushes are too light they can be weighted at L. If, too, they are hung obliquely, as in the case of the top brush in Figs. 1 and 2, or if the support of the bottom brush be as in Fig. 3, or the brush be arranged, as otherwise described, to turn over in an oblique position, the brush slides sidewise to that side where it can lag behind most, and which is the side opposite to that taken by it in its previous journey, and thus each set of bristles brushes the unbrushed ground on one side of it omitted in its previous journey. The weights K serve to keep the brush against the sieve; but a heavy block of wood or other weight can be substituted therefor. Of course, if desired, the brush can have a continuous row of bristles, and be made to follow a uniform path. In such case chains E are attached to a fixed point on Band wire D omitted.

As the brushes wear, the distance of the rails $F F'$ from the sieve can be adjusted. This is done in the case of pedestal f' by screw and nut M' , and in the case of rail F in the pedestal f by screw M.

It will be seen also that while the flexibility of the chain E allows the brush to take any angle from maximum obliquity to the vertical, the levers I by swiveling on their center pins, J, and being linked to the brush by a similar joint allow a similar freedom to brush $B' C'$ by rotating like the bars of a parallel ruler.

I do not claim herein anything shown or described in my former Patent No. 301,154.

I claim as my invention—

1. In combination with a reciprocating sieve, rods or bars mounted thereupon above its surface and extending longitudinally thereof, and a brush extending transversely across the sieve and loosely suspended at each end from the rods or bars, as set forth.

2. In combination with a reciprocating sieve, bars or rods mounted thereupon above its surface and extending longitudinally there-

of, a brush extending transversely across the sieve, and of a length less than the width thereof, said brush being provided with oblique staples and loosely suspended from the bars or rods, as shown.

3. In combination with a reciprocating sieve, a rail, F, parallel to the axis of the sieve and having a brush suspended at its ends therefrom resting on the sieve obliquely, but free to travel longitudinally along the sieve.

4. In combination with a reciprocating sieve, a brush, means whereby the latter is loosely suspended thereon so as to be free to take a given path and so that the bristles shall generally lie against the sieve in an oblique direction so as to secure motion therefrom, and a stopping device in the path of the suspension apparatus, whereby the center of gravity of the brush travels on after its point of suspension has stopped and the brush is caused to rise and turn over.

5. In combination with a reciprocating sieve, bars or rods extending longitudinally thereof above and below its surface and carried by the sieve, and brushes suspended from or carried by the bars or rods and resting obliquely against the sieve, as and for the purpose set forth.

6. In combination with a reciprocating sieve, longitudinal bars or rods mounted thereon above its surface and provided near their ends with offsets or shoulders, a brush shorter than the width of the sieve and lying transversely thereon, and a flexible suspension device connecting the brushes and rods or bars, as set forth.

7. In combination with a reciprocating sieve, longitudinal bars or rods mounted thereon above its surface and provided near their ends with offsets or shoulders, a brush shorter than the width of the sieve and lying transversely thereon, said brush having bunches of bristles arranged a distance apart equal to the width of a single bunch, and a suspending device for said brush, all arranged as shown, whereby when the brush moves in one direction over the sieve it will travel over a portion not covered by the brush in its previous travel.

8. In combination with a reciprocating sieve, bars or rods extending longitudinally thereof below its surface and carried by the sieve, a carriage adapted to be moved upon said bars or rods by the reciprocation of the sieve, counterweighted arms carried by the carriage, and a brush attached to said arms at their upper ends and bearing obliquely against the sieve, as set forth.

9. In combination with a reciprocating sieve, rods or bars secured thereto, as shown, a brush traveling on and guided by the latter, and adjusting devices, whereby the guides or bars may be raised or lowered to compensate for the wear of the bristles of the brush, as set forth.

10. In combination with a reciprocating

sieve, longitudinal bars or rods thereon, a brush loosely suspended at each end from said bars or rods, and a device for causing the said brush to take a path in its return journey different from that taken in its forward journey.

11. The combination of the rails F and stops G with the chains E, brush B C, and reciprocating sieve A, substantially as and for the purposes described.

12. In a sieving apparatus, the combination of the sieve, the rail F', attached to the sieve and having stops f', a carriage traveling freely thereon, and counterweighted brush B C, pivoted on said carriage at a point above its center of gravity by which means when the carriage strikes against the stops the *vis inertiae* of the counter-weight of the brush assists the brush in turning over.

13. In a sieving apparatus, the combination of the adjustable rails F', the runners J, and axle D', with the brush B' C' and the pivoted counterweighted levers I, carrying the brush B' C' pressed against the sieve.

14. The combination of the sieve A, the brush B C, counterweighted levers I, and the carriage-axle H, said counterweighted levers being pivoted to the axle H so as to be free to rock both laterally and longitudinally of said axle.

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

FREDK. A. PRICE.

Witnesses:

W. P. THOMPSON,

I. O. O'BRIEN.