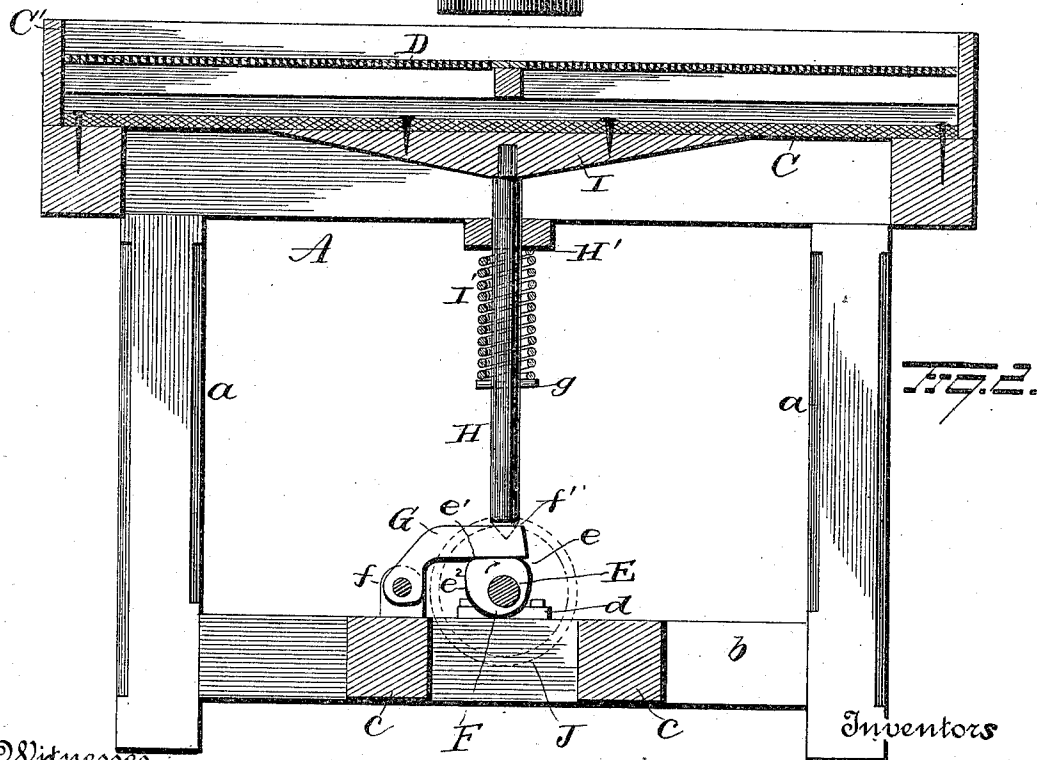
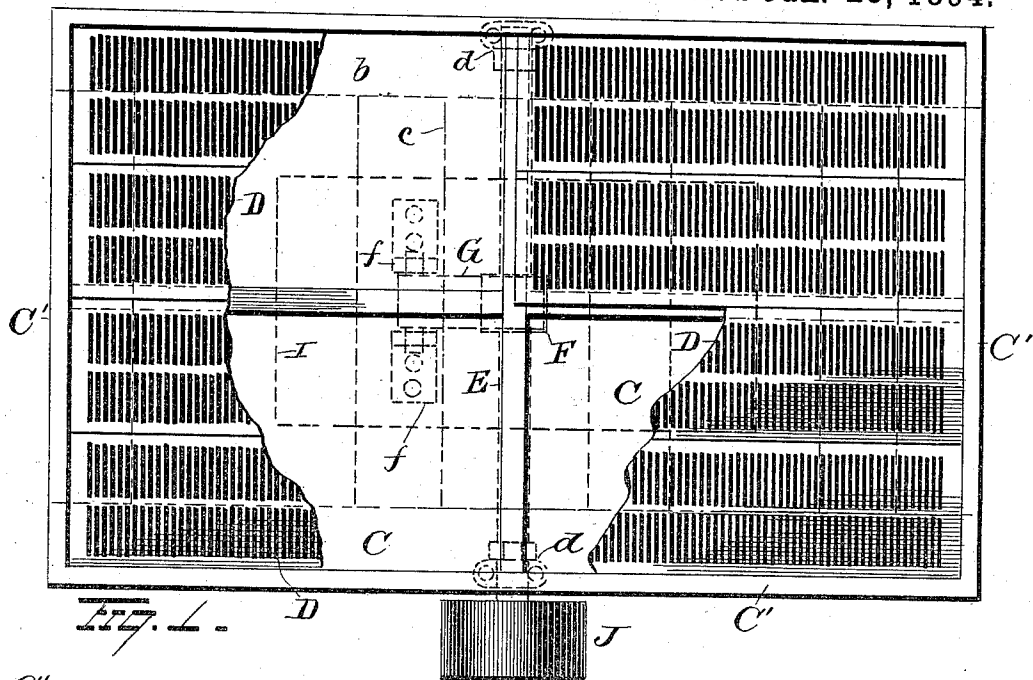


(No Model.)

W. N. CORNELL & J. W. McCULLOCH.
PULP STRAINER.

No. 513,454.

Patented Jan. 23, 1894.



Witnesses
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G. F. Downing.

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UNITED STATES PATENT OFFICE.

WILLIAM N. CORNELL AND JOHN W. McCULLOCH, OF BROWNVILLE,
NEW YORK.

PULP-STRAINER.

SPECIFICATION forming part of Letters Patent No. 513,454, dated January 23, 1894.

Application filed January 18, 1893. Serial No. 458,811. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM N. CORNELL and JOHN W. McCULLOCH, of Brownville, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Pulp-Strainers; and we 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.

Our invention relates to an improvement in appliances for screening paper stock.

In screens of this type the trouble has heretofore been to keep the plates clean, there being no movement or jar to the plate, but depending on the suction caused by the movement of the rubber diaphragm. The movement and suction of the diaphragm have heretofore been of equal length, upward and downward, or one short blast, which has failed to clean the fine slots in the plates and has not proven satisfactory.

The object of our invention is to obviate these defects and to provide simple and efficient means whereby to sub-divide the upward blasts of the diaphragm, whereby two or more quick and sudden blasts are driven through the screen plates, thereby lifting the stock and giving an ample clearance to the plate.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a plan view portions of the screen plates being broken away. Fig. 2 is a longitudinal sectional view.

A represents a frame supported by standards *a*, which latter are connected together in proximity to their lower ends, by means of bars *b* and the bars *b* are connected between their ends by means of cross bars *c*.

To the top of the frame *A*, a flexible diaphragm *C* is secured, and above this diaphragm, the plate or screen supporting frame *C'* is located and adapted to receive the screens or plates *D*, as shown in Figs. 1 and 2.

Mounted in suitable bearings *d* on the bars *b* is a shaft *E*. Secured to the shaft *E*, preferably

midway between its ends, is a cam *F*, constructed so as to have two abrupt cam shoulders *e*, *e'*, and a comparatively long cam face *e²*,—the cam shoulder *e* preferably being nearer to the shaft *E* than the cam shoulder *e'*. A shoe *G* is pivotally supported at one end in suitable brackets *f* located on one of the cross bars *c* and at its other end rests upon the cam *F*. The free end of the shoe *G* is provided with a recess *f'* for the accommodation of a vertical follower rod *H*. The follower rod *H* passes loosely through a cross rod *H'* secured to the under side of the frame *A* and at its upper end is connected with a block or plate *I*,—which latter is secured to the rubber diaphragm *C*, preferably in its center. A spring *I'* encircles the follower rod *H*, said spring bearing at one end against the cross bar *H'* and at its other end against a pin *g* projecting from the follower rod, said spring being thus adapted to cause the diaphragm to return to its normal position when the device is in operation. The shaft *E* is provided with a pulley *J* for the reception of a strap from any convenient source of power. From this construction and arrangement of parts it will be seen that when the shaft *E* is rotated the cam *F* thereon will cause a vibration of the diaphragm *C*, through the medium of the devices above described, and that, owing to the peculiar formation of said cam the diaphragm will be given two quick upward movements or vibrations and one full and comparatively long downward movement or vibration.

The successful working of a screen of the class to which this invention relates, depends largely upon the slots or openings thereof being open. By means of the devices above described, this is accomplished and the amount of clearance gained is at least double that accomplished by prior constructions of which we are aware, as sudden and quick blasts are more effectual than a long blast.

Our improvements are very simple in construction, comprise a small number of parts and are effectual in the performance of their functions to keep the screens clear by the air blasts and suction caused by the quick vibrations of a flexible diaphragm.

Having fully described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for screening paper pulp, the combination with a frame and
5 screen, a flexible diaphragm beneath the screen, and a spring actuated slide rod connected with the diaphragm, of a rotary cam having a series of abrupt cam faces, and a
10 long cam face whereby a double or subdivided upward blast and a long suction downward are created by each revolution of the rotary cam, substantially as set forth.

2. In an apparatus for screening paper stock, the combination with a frame, a flexible
15 diaphragm secured thereto and a frame

for supporting the screens, of a shaft, a cam on said shaft having a series of abrupt cam faces and a long cam face, and devices interposed between said cam and the diaphragm for imparting motion to the latter, substantially as and for the purpose set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILLIAM N. CORNELL.
JOHN W. McCULLOCH.

Witnesses:

CHAS. C. PHELPS,
GRACE A. WALRATH.