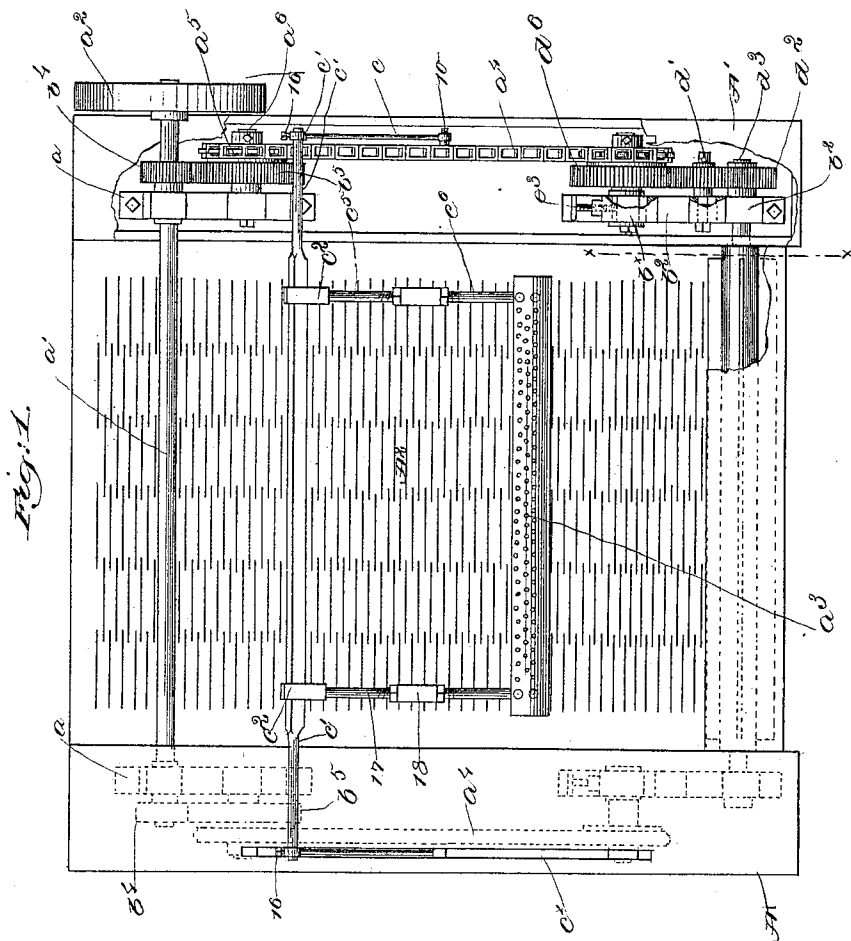


2 Sheets—Sheet 1.

SCREEN CLEANER FOR PAPER MACHINES.

Patented Mar. 29, 1887.



witnesses
Thomas Hobday.
John F. C. Prinkett

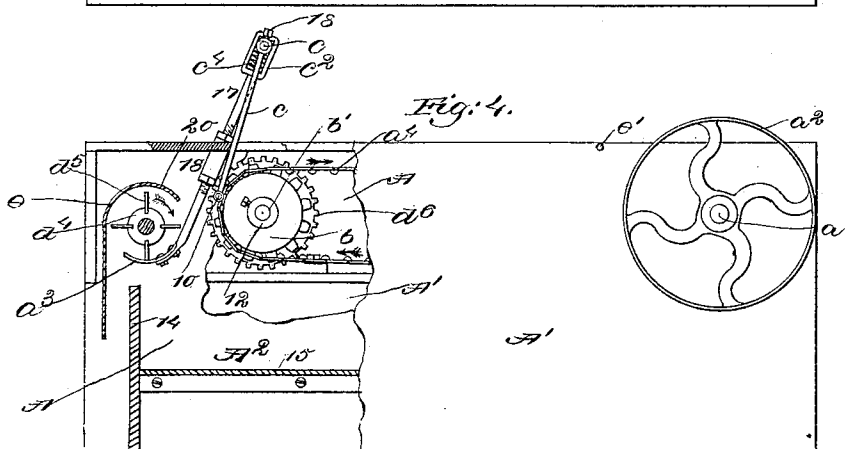
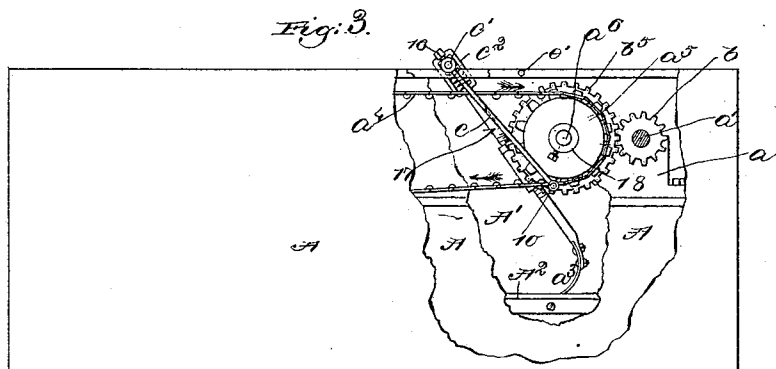
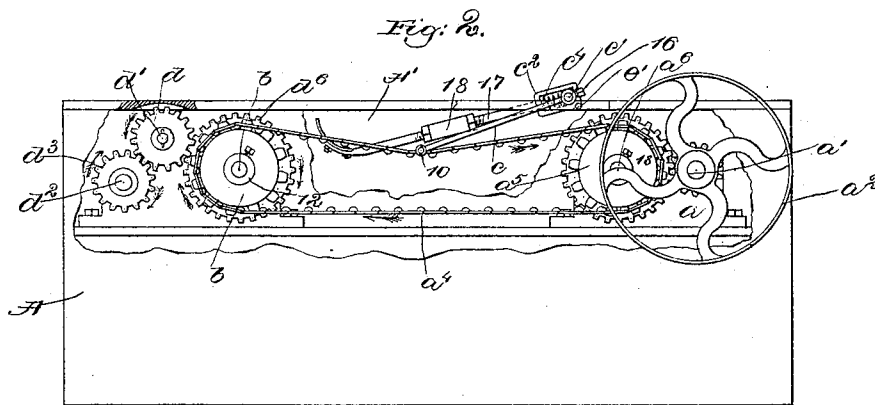
Inventor:
Frank M. Edmunds.
by Crosby & Gregory attys.

F. M. EDMUNDS.

SCREEN CLEANER FOR PAPER MACHINES.

No. 360,089.

Patented Mar. 29, 1887.



Witnesses
Thomas Hobday.
John F. C. Pritchard

Inventor
Frank M. Edmunds,
by Leroy & Gregory attys.

UNITED STATES PATENT OFFICE.

FRANK M. EDMUNDS, OF FRANKLIN FALLS, NEW HAMPSHIRE.

SCREEN-CLEANER FOR PAPER-MACHINES.

SPECIFICATION forming part of Letters Patent No. 360,089, dated March 29, 1887.

Application filed July 26, 1886. Serial No. 239,067. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. EDMUNDS, of Franklin Falls, county of Merrimac, and State of New Hampshire, have invented an Improvement in Screen-Cleaners for Paper-Making, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object to provide a cleaner or scraper by which the slits or interstices of screens in dressers for pulp made from wood or other fiber and employed in paper-making may be prevented from becoming clogged or stopped up by large particles or knots of pulp, the said knots or large particles being removed from the surface of the screen by the said cleaner or scraper.

15 My invention consists, essentially, in the screen, the links *c*, and the chains on which they are pivoted, combined with the scraper or cleaner actuated by the said links, the scraper scraping the screen when moved in one direction and not touching the said screen when moved in the opposite direction, substantially as will be described.

20 Figure 1 is a top or plan view of a pulp-dresser, the screen contained therein, the cleaner or scraper, and mechanism to operate the same, one of the boxes inclosing the said mechanism being broken out to show the driving-chain, means to operate it, and the devices actuated by it, like gearing in the box at the opposite side being shown by dotted lines.

25 Fig. 2 is a side elevation, partially broken out, of a pulp-dresser to show my improved cleaner or scraper for cleaning the screen and the mechanism for operating the said scraper, the scraper traveling on its back-stroke; Fig. 3, a side elevation of the pulp-dresser with one of its sides partially broken to show the gearing at that side, the opposite wall, and the screen cleaner or scraper in operative position or traveling in its forward stroke; and Fig. 4 is a like elevation of the pulp-dresser broken out near its front end to show the cleaner or scraper in position to have the particles of pulp carried thereby removed from it by a wiper, the end of the screen being shown in section along the dotted line *x*, Fig. 1.

30 The pulp-dresser, into which wood or other

pulp is discharged, has its sides, as herein shown, composed of boxes *A A'*, or double partitions, between which is placed the metal screen *A²*, which may be of any usual or ordinary construction, the pulp from any usual vat descending upon and passing through the said screen into the paper-making machine. (Not shown.)

35 The boxes *A A'* support journal-bearings *a* for a main shaft, *a'*, provided with a belt-pulley, *a²*, the said shaft, through mechanism to be hereinafter described, causing a cleaner or scraper, *a³*, to travel backward and forward above the screen *A²*, the cleaner coming in contact with the screen only during its forward movement, as best shown in Fig. 3.

40 The actuating mechanism for the said cleaner or scraper is identical at both sides of the apparatus, and therefore only the parts comprising said mechanism at one side need be specifically referred to.

45 The shaft *a'* has two like gearings, *b¹*, each of which engages and rotates a toothed gear, *b²*, loose on a stud, *a⁴*, secured to the bearing *a*, the said toothed gear *b²* having an attached sprocket-wheel, *a⁵*, which drives the chain belt *a⁶*, extended also above a sprocket-wheel, *b*, attached to a toothed gear, *d⁶*, also loose on a stud, *b¹*, held in a bearing-block, *b^x*, placed in a slot of the bearing *b²*, and made adjustable therein by a suitable adjusting-screw, *c²*, to thus enable the chain to be kept taut.

50 The gears *b²* and *d⁶* and their attached sprocket-wheels are retained on the said studs by collars 10 and 12, confined by set-screws. The gear *d⁶*, through an intermediate, *d*, on a stud, *d¹*, drives the gear *d²*, fast on the shaft *d³* of the wiper *d⁴*, provided with flexible or india-rubber blades *d⁵*, the latter acting to wipe from the cleaner or scraper *a³*, when in the position Fig. 4, all the material collected upon it, throwing the said material over the front end, 14, of the box containing the screen-plate, a hook, *e*, preventing the said material from being thrown centrifugally from the wiper out into the room.

55 The endless sprocket-chain *a⁴* has jointed to it, as at 10, one end of a link, *c*, which is extended through a longitudinal slot, *c^x*, (see Fig. 1,) in the top of the box, the upper end of each link being connected by a set-screw, 16, to one end of a bar, *c'*, extended across the

apparatus, the said cross-bar c' traveling above the boxes A A', and for part of its movement resting upon the said boxes.

The cross-bar c' , made quadrangular, (see Fig. 1,) enters loosely slots in the heads c^2 of the side arms, 17, of the cleaner or scraper a^3 , the slots of each head receiving a spring, c^4 , which acts against the cross-bar c' , and normally keeps it at the outer end of the slot in the said head c^2 .

The cleaner or scraper a^3 is composed of side arms, 17, preferably divided and made adjustable by a nut, 18, and right and left screw-threads, and of a concaved plate or sheet of metal attached to the said side arms. The rotation of the nut 18 adjusts the position of the scraper a^3 with relation to the surface of the screen or dresser A², as may be desired.

The pulp to be screened or dressed is discharged upon the rear end of the screen A². That portion of the pulp which is in a finely-divided state and fit to be used in the manufacture of paper passes through the slits or interstices of the screen, while the knots or larger particles of pulp or foreign matter lie upon the surface of the screen and clog the slits or interstices thereof.

The cleaner or scraper a^3 , moved through the mechanism above described, when moved from the position shown in Fig. 2 to that shown in Fig. 3, scrapes over the screen A² and removes from it the knots or large particles of pulp thereon, leaving the slits or interstices free and open for the passage through them of more pulp. The cleaner or scraper during its forward movement occupies the position shown in Fig. 3, and maintains such position until the link c strikes the outer end of the slot c^x , and on further movement of the chain a^4 the scraper or cleaner will be turned to occupy the position shown in Fig. 4. When in the position shown in Fig. 4, the scraper or cleaner a^3 will be itself cleansed from any pulp adhering to it by means of the revolving wiper previously described. After passing beyond the wiper the cleaner or scraper falls over backward, and the chain in its further movement carries the scraper or cleaner a^3 backward, the said scraper or cleaner occupying the position shown in Fig. 2, the cross-bar c' at such time resting upon the top of the boxes

A A'. The scraper or cleaner a^3 is carried backward, or to the right in Fig. 1, until the link c meets a suitable pin or stop, e' , at or near the rear end of the slot c^x , the said stop causing the link to be arrested, while the chain continues to move, which results in lifting the links c and cross-bar and placing the scraper or cleaner in operative position, as shown in Fig. 3, the jointed end 10 of the link during such change of position passing around the sprocket-wheel a^5 .

Instead of a chain, I might employ a belt of any other suitable or well-known construction, which will move both ends of the cross-bar c' equally.

I claim—

1. The screen, the links c , and the chains on which they are pivoted, combined with the scraper or cleaner actuated by the said links, the scraper scraping the screen when moved in one direction and not touching the said screen when moved in the opposite direction, substantially as described.

2. A screen upon which pulp is discharged, a cleaner or scraper to act upon the surface of the said screen, and a wiper to cleanse the said scraper or cleaner, combined with means, substantially as described, to actuate both the scraper or cleaner and the wiper, substantially as set forth.

3. A vat, a fixed screen located therein and upon which pulp is discharged, and a cleaner or scraper to act upon and adjustable with relation to the surface of the said screen, combined with belts or chains outside of and on opposite ends of the said vat, and to which the cleaner or scraper is connected, substantially as described.

4. The screen, the adjustable scraper or cleaner a^3 , the cross-bar c' , the chains or belts a^4 , and the pivoted links c , combined with gearing, substantially as described, to move the chains or belts and actuate the cleaner or scraper, substantially as described.

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

FRANK M. EDMUNDS.

Witnesses:

W. D. HARDY,
E. B. S. SANBORN.