(No Model.)

M. V. STREETER.

SCREEN SCRAPER FOR PULP OR PAPER MILLS.

No. 383,026. Patented May 15, 1888.

Fig. 1

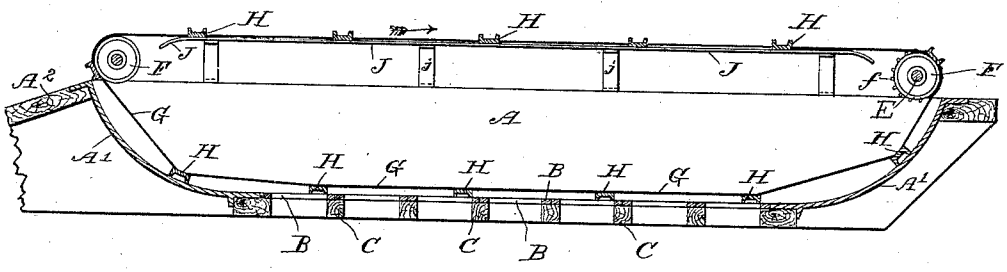


Fig. 2

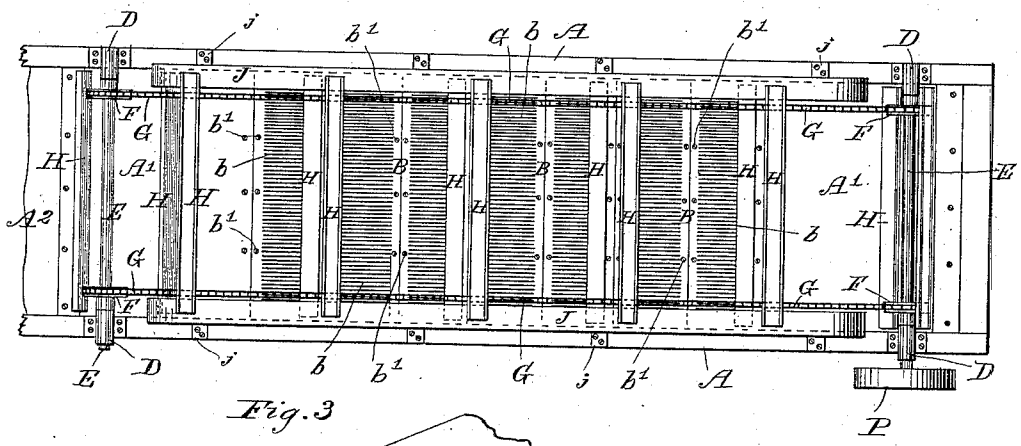


Fig. 3

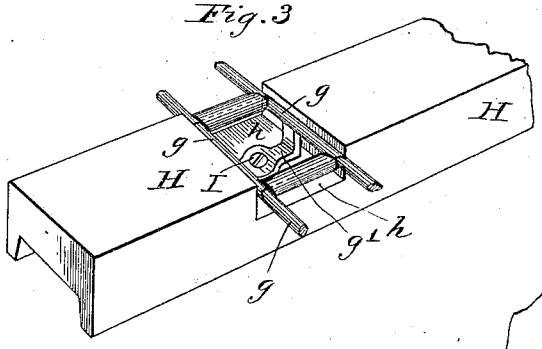
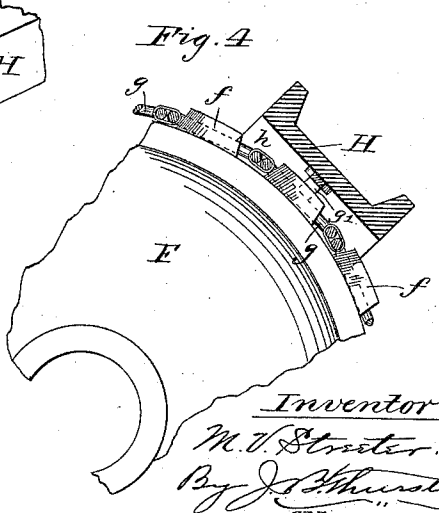


Fig. 4



Witnesses.
F. A. Merrill.
W. B. Hill.

Inventor
M. V. Streeter.
By J. S. Thurston,
Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

MARTIN V. STREETER, OF FRANKLIN FALLS, NEW HAMPSHIRE.

SCREEN-SCRAPER FOR PULP OR PAPER MILLS.

SPECIFICATION forming part of Letters Patent No. 383,026, dated May 15, 1888.

Application filed June 25, 1887. Serial No. 242,449. (No model.)

To all whom it may concern:

Be it known that I, MARTIN V. STREETER, a citizen of the United States, residing at Franklin Falls, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Screen-Scrapers for Pulp or Paper Mills, of which the following is a specification.

The object of this invention is to provide mechanism, in connection with an ordinary pulp-screen, which shall carry out all chips and small particles which will not dissolve or cannot be converted into pulp; and the invention consists of the improved devices combined and arranged as hereinafter described, and pointed out in the appended claims, and clearly illustrated in the accompanying drawings, forming a part of this specification, of which—

Figure 1 represents a longitudinal sectional view of a screen to which my improvements are applied, Fig. 2 being a general plan of same; Fig. 3, an enlarged sectional view in perspective of one of the scrapers and its chain belt; and Fig. 4 represents said scraper in cross-section, the chain belt in section, and a portion of the sprocket-wheel for carrying the same, all in their relative position.

Similar letters designate corresponding parts.

A is the vat or screen-frame, which, to serve my purpose, is preferably provided with inclined or curved ends A′, as seen best in Fig. 1. These may be composed of wood or metal, as found most desirable. Between these curved ends the ordinary screen bottom may be placed, formed of slotted plates or segments B, their slots *b* running lengthwise or longitudinally with the said screen-frame. These plates are secured by screws *b′* in the usual way to cross-bars C, connecting the vertical sides of said screen-frame A.

Near each end and upon the vertical sides of said screen-frame are secured bearings D, in which are mounted shafts E, which carry between said bearings pulleys F. For a screen of ordinary size but two of these pulleys are required for each shaft; but others may be added, if desired. Chain belts G connect one set with the other, and those pulleys which are mounted upon the shaft carrying the drive-pulley P (which in the drawings is shown at the right side) are of the form known as "sprocket" or "rag" wheels, the projections *f*, which carry the chains, being shown in Figs. 1 and 4.

Scrapers H, which are preferably cast in the form of "channel-iron," are secured at regular intervals to the chains G, the connection being conveniently made by means of a bridge, *g′*, joining the sides of a link, *g*, and adapted to be sunk and secured by a screw, I, within the groove *h* of the said scraper H, near each end thereof. These scrapers are held to their work by their own weight, this being permitted by reason of the slack in the chains G, the upper portions of which are maintained in a horizontal position by means of the supports or slideways J, (sustained at their proper heights by the bars *j*,) upon which the scrapers H rest while being moved from one to another set of pulley-wheels F in the direction of the arrows above Fig. 1, thus allowing the scrapers on the under sides of the chains G to slide along the screen-bottom B, (channel side down,) carrying all chips or waste matter which will not pass through said screen before them to the incline A^2, (shown best in Fig. 1,) where they pass into a proper receptacle.

There are several advantages in using slack chains for carrying the scrapers, among which may be mentioned the following—to wit: the scrapers are thereby enabled to follow each other along the screen and do their work, even though the said screen may have become uneven or irregular from any cause, or through accident some heavy object may have dropped into the screen, in which event, if said object is too heavy to be carried out by the scrapers, they will successively ride over it and continue to do their work to a certain extent until the difficulty be discovered by a watchman—a screen-tender; and, finally, I may add, this construction combines simplicity and economy.

I am aware that screen-scraping devices have been previously patented. Some of these employ rotary brushes driven by rack and pinion; or the brushes are attached to a leather belt which is passed taut over ordinary belt-pulleys. These, however, are continually wearing off, and as there is no means for insuring contact of the brushes and screen between the pulleys, said screen may never be thoroughly freed from the refuse matter which the

brushes are designed to carry off. This difficulty is entirely avoided by using slack belts, (which must necessarily be in the form of chain belts,) having metallic or other heavy scrapers attached, and also in providing means supporting the upper scrapers so that the lower ones may drop of their own weight and rest upon the screen while being moved across the same. Thus it is obvious that to use taut belts, or even chains, would defeat the object of my invention; hence

Having described my improvements, what I claim as my invention is—

1. The combination of a screen, a shaft carrying sprocket wheels mounted on top at one end thereof, two or more slack chains, suitable scrapers arranged at regular intervals and carried thereon, and suitable slideways for carrying the upper scrapers at a uniform height from one to another set of sprocket-wheels, for the purpose set forth.

2. The combination of a screen having inclined ends, a shaft and sprocket or rag wheels mounted on top near each end, two or more slack chains, suitable scrapers channeled on one side and arranged at regular intervals and carried thereon, and suitable slideways for carrying the upper scrapers at a uniform height from end to end of said screen, substantially for the purpose described.

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

MARTIN V. STREETER.

Witnesses:

J. B. THURSTON,

J. H. ALBIN.