March 11, 1958 E. COWLES 2,826,126

SCRAPER BLADES FOR PAPER STOCK SCREENING MACHINES

Filed Dec. 9, 1953

Fig. 1

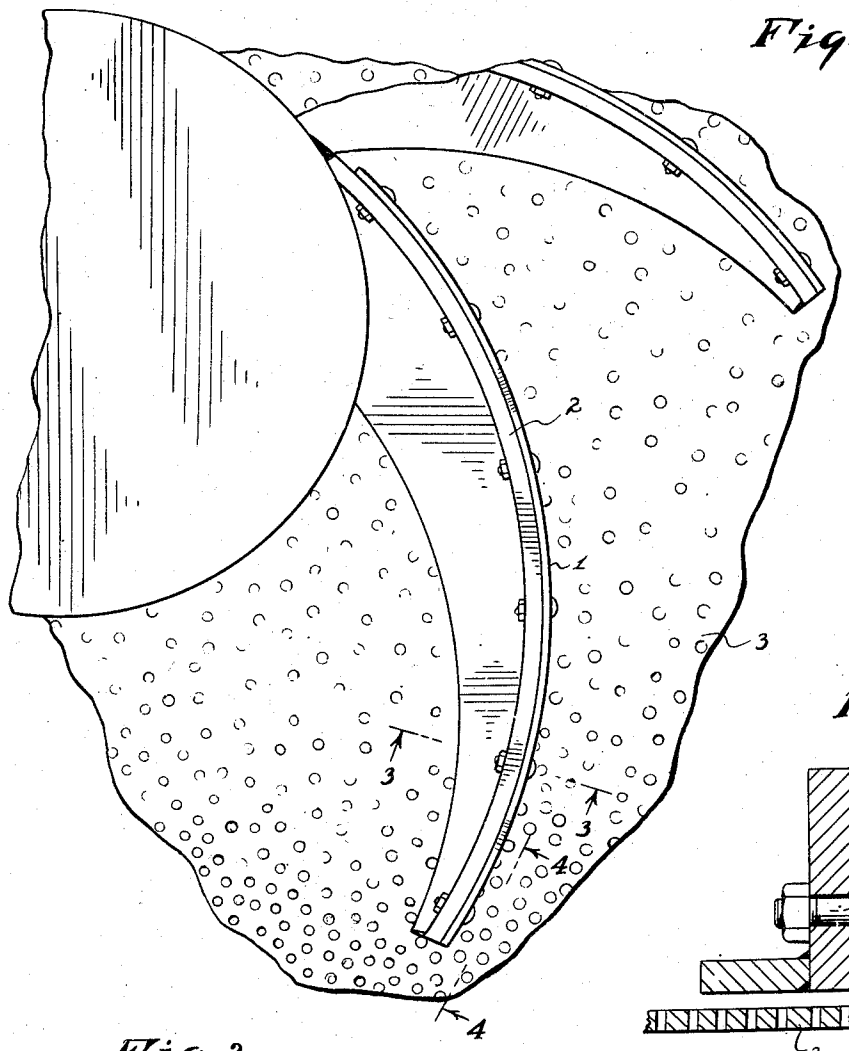
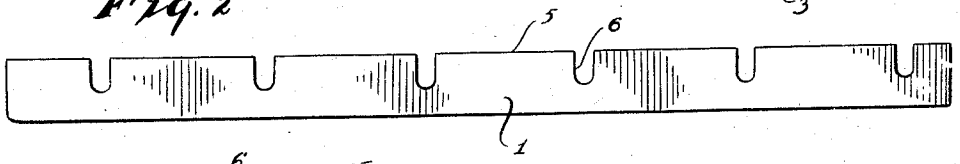


Fig. 3

Fig. 2



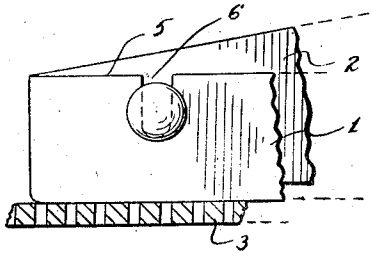


Fig. 4

INVENTOR.

Elmer Cowles

BY

Emery, Vanney, Whittemore & Dix.

ATTORNEYS

United States Patent Office

2,826,126

Patented Mar. 11, 1958

2,826,126

SCRAPER BLADES FOR PAPER STOCK SCREENING MACHINES

Edwin Cowles, Cayuga, N. Y., assignor to The Cowles Company, Princeton, N. J., a corporation of New Jersey

Application December 9, 1953, Serial No. 397,120

1 Claim. (Cl. 92—29)

This invention relates to scraper blades for paper stock screening machines of the type illustrated in a copending application of Arthur W. Infanger, Serial No. 311,119, field September 23, 1952, now Patent No. 2,682,811.

In such machines a rotating hub member carries a plurality of arms which, in turn, carry scraper blades which engage a perforated screen. As the arms rotate, the scraper blades repeatedly clear the screen perforations which otherwise tend to become plugged with fibrous material. It is of the utmost importance to the efficient operation of such machines that all of the screen perforations be kept clear at all times. Therefore, the scraper blades should contact the screen throughout their length, that is, across the entire width of the perforated area of the screen, so that all of the screen perforations will be cleared on each sweep of each blade.

In actual commercial manufacturing practice, working within usual foundry and machine shop tolerances, it has been found to be extremely difficult to mount the perforated screens in the casings of such machines in such manner as to insure that the entire area of the surface which is engaged by the scraper blades lies in a single plane. Various dimensional discrepancies in casting or in machining contribute, sometimes cumulatively to slight bending or warping of the screen surfaces, sometimes in one direction and sometimes in another, with the result that a scraper blade set correctly to sweep a single plane surface will not contact portions of the warped screen surface and some perforations will not be cleared. Moreover, in the operation of the machine, wear occurs more rapidly at the outer end of the blades than at the inner ends. When this occurs the clearing of the outer perforations is less effective. Various expedients such as hinged scrapers, flexible scrapers and the like have been tried but have not proved satisfactory.

It is an object of the present invention to provide an improved scraper which can be adjusted to the contour of a slightly warped screen a swell as to a correct screen.

Other objects and advantages of the invention will appear hereinafter.

A preferred embodiment of the invention selected for purposes of illustration is shown in the accompanying drawings, in which,

Figure 1 is a plan view of a portion of a rotating hub member carrying arms having scraper blades mounted thereon.

Figure 2 is a front elevation of a scraper blade.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a section on the line 4—4 of Figure 1.

Referring to the drawings, the scraper blade of the invention comprises an elongated steel strip **1** of a length such that when secured to the front face of one of the rotating arms **2**, as hereinafter described, it will extend across the entire width of the perforated area of the screen **3**. Preferably the lower front edge **4** of the blade which is in contact with the screen is hardened.

The upper edge **5** of the blade is provided with a series of slots **6** which receive the bolts **7** which are used to secure the blade to the arm. The slots are distributed along the blade at regular intervals of three to six inches. Said slots extend rather deeply into the blade, as for example, in the blade illustrated, the depth of the slots is at least half the width of the blade.

The upper and lower edges of the blade are normally substantially straight edges, but when the blades are being installed, the bolts **7** are first set up only moderately, and the upper edge **5** of the blade is then tapped with a hammer until the lower edge **4** is in contact with the screen along its entire length. The deep slots in the upper edge of the blade permit the blade to bend and warp slightly and sufficiently to accommodate itself to irregularities in the transverse contour of the screen.

It will be understood that the invention may be variously modified and embodied within the scope of the subjoined claims.

I claim as my invention:

In a paper stock screening machine having a perforated screen and rotating arms to clear said perforations, a scraper blade for each of said arms and extending across the perforated area of said screen, said blade having normally substantially straight upper and lower edges, said upper edge being provided with a series of relatively deep slots distributed along the length of the blade, bolts passing through said slots and securing said blade to said arm, said slots permitting said blade to be bent and warped to cause said lower edge to assume a curved contour to conform to the transverse contour of the screen.

References Cited in the file of this patent

UNITED STATES PATENTS

1,259,139	Salisbury	Mar. 12, 1918
1,415,859	Bates	May 16, 1922