No. 614,087. Patented Nov. 15, 1898.

C. CHATBURN & J. ASHCROFT.

APPARATUS FOR WASHING PRINTERS' BLANKETS.

(Application filed Mar. 8, 1898.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 3.

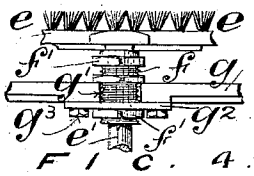


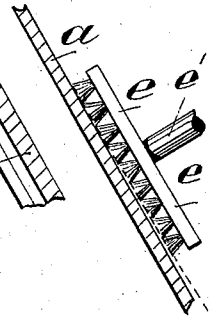
FIG. 4.



FIG. 6.

FIG. 1.

FIG. 7.



WITNESSES.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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FIG. 5.

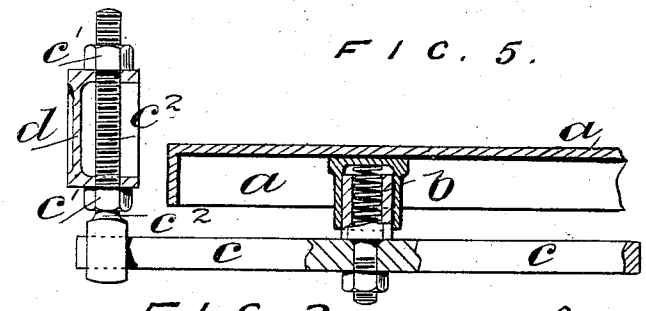
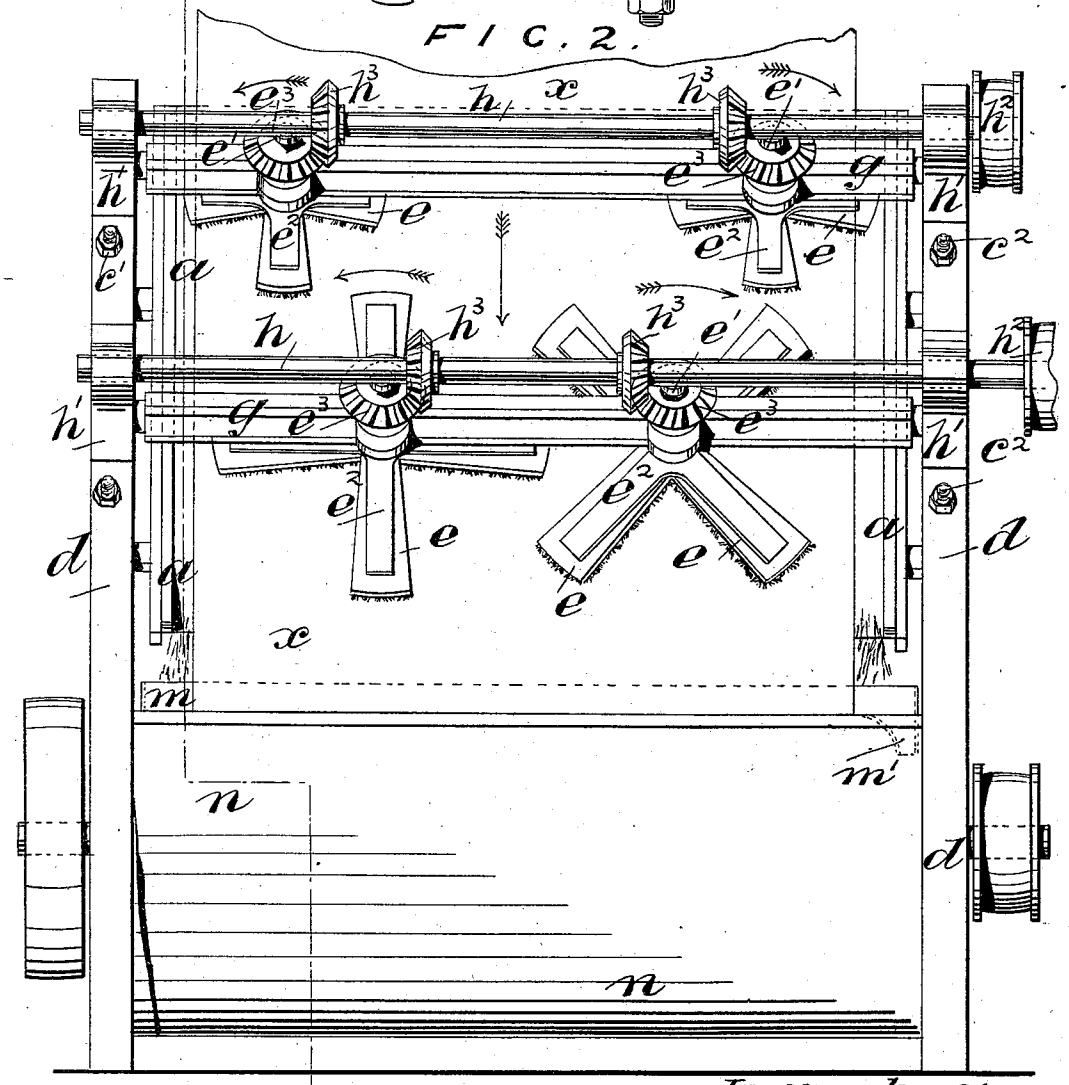


FIG. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CAREY CHATBURN AND JOHN ASHCROFT, OF WHALLEY, ENGLAND, ASSIGNORS TO THOMAS OWEN ARNFIELD, OF NEW MILLS, ENGLAND.

APPARATUS FOR WASHING PRINTERS' BLANKETS.

SPECIFICATION forming part of Letters Patent No. 614,087, dated November 15, 1898.

Application filed March 8, 1898. Serial No. 673,142. (No model.)

To all whom it may concern:

Be it known that we, CAREY CHATBURN, engineer, residing at 8 Cockerill Terrace, Barrow, Whalley, and JOHN ASHCROFT, foreman machine printer, residing at Bramley View, Whalley, in the county of Lancaster, England, subjects of the Queen of Great Britain and Ireland, have invented certain new and useful Improvements in Apparatus for Washing and Cleansing Calico-Printers' and Paper-Stainers' Blanketing and the Like, (for which we have made application for a patent in Great Britain, No. 30,438, dated December 23, 1897,) of which the following is a specification.

Our said invention relates to improvements in apparatus for washing and cleansing calico-printers' and paper-stainers' blankets and the like; and it consists in the employment of flat brushes carried upon the outer faces of disks or arms mounted upon the extremities of shafts or spindles rotated by bevel or other convenient wheel gearing. We may employ any number of such rotating flat brushes, but at present find it answers our purpose to employ two larger ones, arranged side by side, whose combined surfaces practically cover the full width of the blanketing, and two smaller ones, (arranged in front of the larger ones,) which, first of all, scrub or brush up the dirt or coloring-matter deposited by the printing roller or rollers on the surface of the blanket. The blanket is caused, by means of suitable rotating rollers, to traverse between a table or plate and the flat faces of the revolving brushes, the usual "spurt" or perforated pipes being employed to supply the necessary water to the brushes to facilitate the washing operation.

In order that our invention may be clearly understood, we will now proceed to particularly describe the same, reference being had to the annexed two sheets of drawings, in which—

Figure 1 on Sheet 1 is a vertical longitudinal section of one form of blanket-washing apparatus constructed in accordance with our invention. Fig. 2 on Sheet 2 is a front view of the washer at right angles to Fig. 1. Figs. 3, 4, 5, 6, and 7 are detail views.

In the type of washer shown in the drawings we provide an inclined backing plate or table a, over which the blanketing is drawn in its passage through the washer. This backing plate or table is preferably made of cast-iron (although we may employ any other suitable metal or material) and is sustained on elastic bearings b, carried from cross-bars c, supported by the side frames d. By manipulating the nuts c' on the screws c^2 any requisite adjustment of the backing plate or table may be readily effected, as is clearly indicated in the detail view Fig. 5.

We employ flat brushes e to act upon the blanketing in its passage over the backing plate or table a and we impart rotary motion to such brushes. These flat brushes are carried by short shafts or axles e', connected to the flat brush-backs by cross or star extensions e^2, projecting from the lower ends of the shafts, the upper ends of the shafts having bevel-pinions e^3 keyed thereto. The shafts e' are supported in bearing-sleeves f, carried in the fixed cross-stays g. (More clearly seen in the detail views Figs. 3 and 4, to which the reader is for the moment referred.) These bearing-sleeves, with the short shafts e', are readily slipped into position in the bearing-ways g', formed in the cross-stays g, the caps g^2 being then secured by the bolts g^3 and the final adjustment of the bearing-sleeves obtained by operating the lock-nuts f'. In a similar manner and within limits by adjusting the lock-nuts f' the brushes e may be caused to bear with any required degree of pressure upon the blanketing, and the wear on the bristles consequent on use may be compensated for. The same results may also be obtained by setting up the backing plate or table a. The backing plate or table might, however, be made rigid, as is indicated in Fig. 6 of the drawings.

Across the width of the machine we arrange a couple of shafts h, capable of being revolved in bearings h' by driving the fast pulleys h^2. The two driving-shafts h carry bevel-pinions

h^3, which mesh with the bevel-pinions e^3, so that on the shafts h being caused to revolve the bevels h^3 drive the bevels e^3, rotating the short shafts e' in the fixed sleeves f, and consequently the flat scrubbing-brushes e.

The first and smaller pair of brushes e are designed to operate more directly on the outer edges or selvages of the blanketing, which are the parts most apt to become foul in practice, the full width of the blanketing afterward coming under the action of the wider pair of brushes, as clearly indicated in the drawings. One of the brushes of the larger pair is set somewhat in advance of the other to allow of uninterrupted movement, the field of operation of one brush overlapping the field of operation of the other, the brushes of each pair revolving in opposite directions and toward the selvages of the blanketing, so that the blanketing is not only kept perfectly flat, but is slightly stretched while under the action of the brushes. If necessary, the brushes e could be very slightly canted, so as to increase the said stretching effect, as indicated in the diagram Fig. 7.

The necessary supply of water or other cleansing fluid is delivered to the brushes through one or more spurt-pipes i, as shown in Fig. 1 of the drawings.

The constantly-revolving flat brushes e exercise a circular scouring action on the passing blanketing supported by the backing-plate a and effectually dislodge the coloring and printing matter without glazing or polishing the surface of the blanketing, which is so serious an objection following the use of the revolving roller-brushes at present largely used in blanket-washing machines.

Although we have shown the scrubbing-brushes in the drawings as being somewhat of a Maltese-cross or star formation, it will be obvious that the exact contour of the brushes is not material so long as a flat face of bristles is presented to the blanketing. The form of brush indicated in the drawings has, however, been found to give good results.

We might impart the requisite rotary motion to the short shafts e' otherwise than through bevel-gear, and we might, of course, employ more than two pairs of circular scrubbing-brushes.

We may now with advantage describe the passage of the blanketing through the washer.

The blanketing x, leaving the printing-machine, is led over suitable guiding-rollers (not shown) to the washer and immediately comes under the action of the first pair of scrubbing-brushes e, the requisite moisture being supplied to the brushes through the spurt-pipe i. Continuing, the blanketing receives a further scrubbing from the larger pair of brushes e, leaving which it passes around the backing-drum j, where it is subjected to a further douche of water from a spurt-pipe i'. The blanketing is finally acted on by the rapidly-revolving drying-brush k, after which it passes over the guide-rollers l to the drying-cylinders and again to the printing-machine. The water and loosened coloring-matter removed from the blanketing and trickling down the inclined table a are drained along a gutter m, from whence they fall through the delivery-spout m' into the trough n of the washer and are so carried away.

We claim as our invention—

1. In blanket-washing machines, an elastically-supported and adjustable inclined flat backing-plate a in combination with flat scrubbing-brushes caused to revolve in opposite directions in the same plane in such a manner as to tend to extend or stretch the blanketing from the center toward the selvages, as herein set forth.

2. In a blanket-washing machine, an inclined flat backing-plate in combination with flat scrubbing-brushes, with means for revolving the same in opposite directions in the same plane so as to extend or stretch the blanketing from the center toward the selvages, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CAREY CHATBURN.
JOHN ASHCROFT.

Witnesses:
THOMAS COOPER,
RICHARD IBBERSON.