(No Model.)

J. FARMER & A. LALANCE.

APPARATUS FOR WASHING AND DYEING FABRICS.

No. 345,492. Patented July 13, 1886.

FIG: 2.

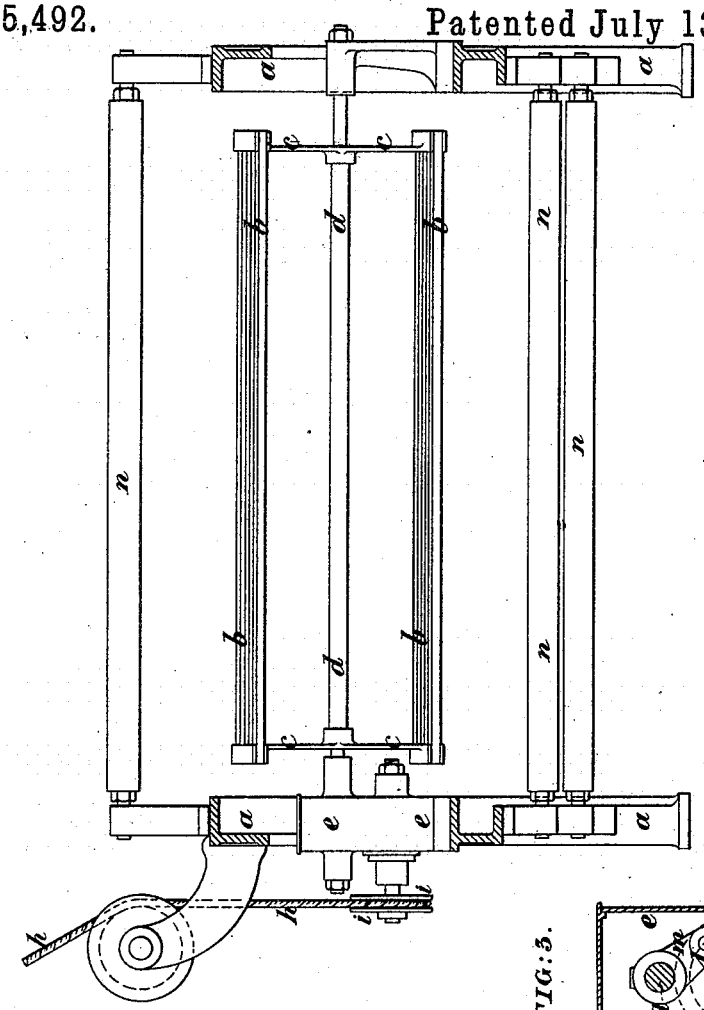


FIG: 3.

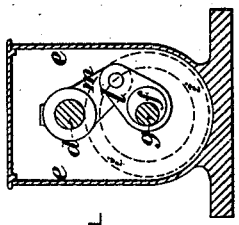
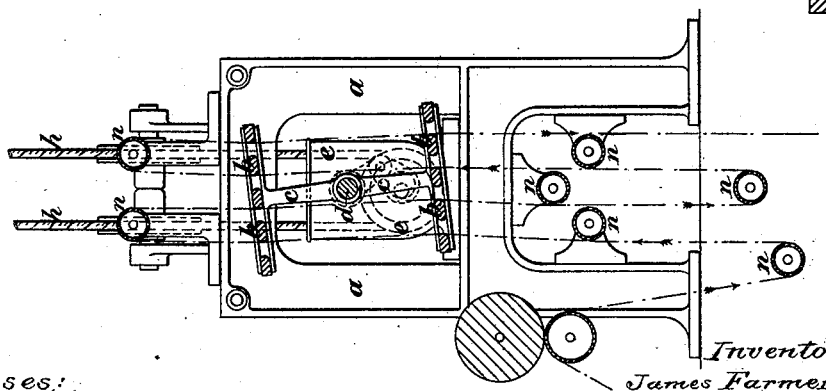


FIG: 1.



Witnesses:
David S. Williams
William F. Davis

Inventors:
James Farmer &
Auguste Lalance
by their Attorneys:
Howson and Sons

UNITED STATES PATENT OFFICE.

JAMES FARMER, OF SALFORD, COUNTY OF LANCASTER, ENGLAND, AND AUGUSTE LALANCE, OF MULHOUSE, GERMANY.

APPARATUS FOR WASHING AND DYEING FABRICS.

SPECIFICATION forming part of Letters Patent No. 345,492, dated July 13, 1886.

Application filed October 20, 1885. Serial No. 180,445. (No model.) Patented in England April 2, 1885, No. 4,148; in Austria January 31, 1886, No. 36,354, and in France March 1, 1886, No. 172,596.

To all whom it may concern:

Be it known that we, JAMES FARMER, a subject of the Queen of Great Britain, and residing at Salford, in the county of Lancaster, England, and AUGUSTE LALANCE, a subject of the Emperor of Germany, and residing at Mulhouse, in the Empire of Germany, have invented Improvements in the Construction of Apparatus Employed for Washing, Chloring, Scouring, Soaping, Dunging, and Dyeing Woven Fabrics, (for which we have obtained British Patent No. 4,148, dated April 2, 1885, Austrian Patent No. 36,354, dated January 31, 1886, and French Patent No. 172,596, dated March 1, 1886,) of which the following is a specification.

This invention relates, principally, to an additional apparatus to be employed with the machines for which Letters Patent for Great Britain were granted to us bearing date May 27, 1884, No. 8,254, and July 21, 1884, No. 10,792, and by the use of which apparatus a considerable saving is gained, and also more perfect work is effected.

The improved apparatus, in connection with the above-named machine, is especially important in the washing out of all gummy paste and other foreign matters, and is most suitable for printed goods, which it has hitherto been difficult to free from these gums, and it could only be accomplished by a considerable expenditure of time and labor. The said machine, however, with this apparatus attached, passes the cloth through at a very high speed, and it is thereby thoroughly washed and all gummy matters removed.

The improvements consist of an apparatus composed, principally, of a number of rails or bars mounted in iron supports, which are keyed on a central rocking shaft, which causes the said rails or shakers to vibrate or oscillate at a very high speed with a short stroke, while the goods pass to and fro in contact therewith from one set of guide-rollers to another.

Figure 1 in the annexed drawings, which form part of this specification, is a vertical transverse section, and Fig. 2 a vertical longitudinal section, of the apparatus. Fig. 3 is an enlarged detached sectional view of a device for actuating the vibrating rails.

We wish it to be understood that we do not confine ourselves to the number of rails or bars, nor to the materials of which they are made, as they may be composed of timber or of metallic substances.

In Figs. 1 and 2, *a a* is the frame-work of the apparatus, and *b b* are the rails mounted in the iron supports *c c*, which are keyed upon a central rocking shaft, *d d*, to which a rapid vibratory motion is communicated.

In the drawings a device is shown (see, also, detached sectional view, Fig. 3) which we have adopted and found to be very effective for the purpose; but we wish it to be understood that we do not confine ourselves to any particular method of driving.

The device is inclosed in a case, *e e*, and consists, principally, of an eccentric, *f f*, keyed upon a short shaft, *g g*, driven by an endless cord, *h h*, passing round the grooved pulley *i i* from any convenient part of the machine. A link, *l l*, which embraces the eccentric is connected to a short lever, *m m*, keyed on the rocking shaft *d d*, and thus a rapid vibratory motion is imparted thereto. *n n* are guide-rollers above and below, which, by preference, are made adjustable, in order to be placed in the most effective positions and at the same time to prevent injury to the cloth in its passage through the process.

The passage of the cloth through the apparatus is represented by the dotted lines. The cloth is led from the vat or cistern up and down between the movable rails *b b* and over and under the guide-rollers *n n*, as shown, and when the fabric is being treated in either of the above or similar operations the movable rails or shakers *b b* are kept in a state of rapid oscillation, and will thus strike against the fabric as it is passing through, and this rapid vibration and beating of the fabric in its wet state will effectually loosen all gummy matter and very considerably improve the appearance and "feel" of the fabric.

This apparatus or machine (which is perfect in itself) may be used on each or any of

the vats or cisterns of the said patent washing-machines as required. It can be likewise fixed on any open washing-machine now in use.

The apparatus may also be applied in a horizontal position when found more convenient to fix it so.

We are aware of the washing-machine shown and described in Cottrill's British Patent No. 2,456 of 1855; but that machine is for the washing and dyeing of fabrics by agitating them in the liquid by means of agitators, whereas our machine is an attachment to a washing and dyeing machine for beating the fabric after it has left the bath to free it from gummy paste and other foreign matters by means of beaters.

We claim as our invention—

The herein-described apparatus for freeing washed or dyed fabrics from paste and other foreign matters, said apparatus comprising a frame with rollers to guide and traverse the fabric after it has left the bath, and vibrating beaters between which the fabric is traversed, as set forth.

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

JAS. FARMER.
AUG. LALANCE.

Witnesses to the signature of James Farmer:
GEORGE DAVIES,
JNO. HUGHES.

Witnesses to the signature of Auguste Lalance:
A. KAUFMANN,
CHS. A. RICHTER.