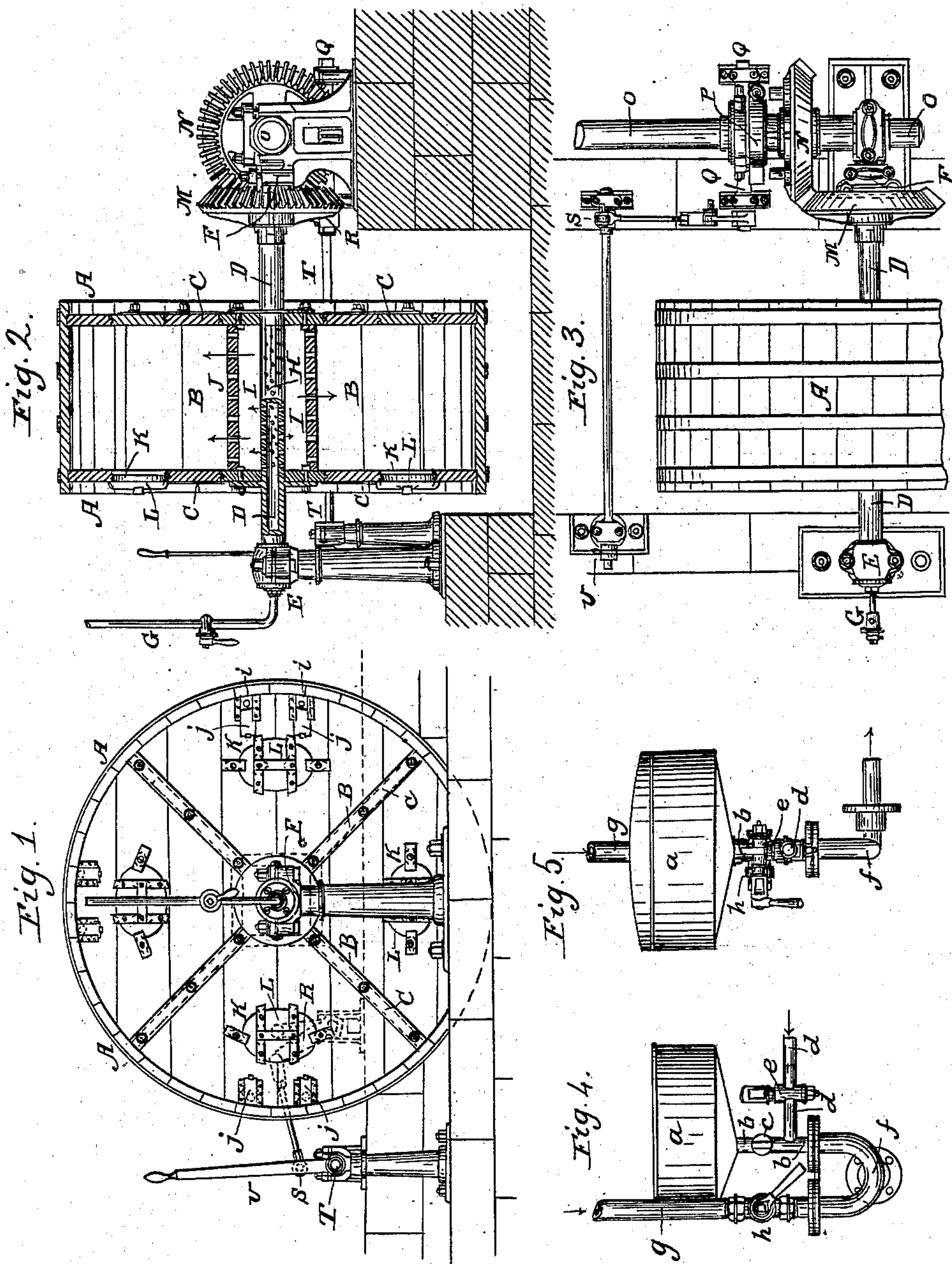


J. WALLACE, Jr.
Bleaching Apparatus.

No. 15,836.

Patented Sept. 30, 1856.



UNITED STATES PATENT OFFICE.

JAMES WALLACE, JR., OF GLASGOW, SCOTLAND.

USE OF THE DASH-WHEEL FOR WASHING AND BLEACHING.

Specification of Letters Patent No. 15,836, dated September 30, 1856.

To all whom it may concern:

Be it known that I, JAMES WALLACE, Jr., of Glasgow, in the county of Lanark, Scotland, manufacturer, have invented certain new and useful Improvements in Bleaching, Washing, or Cleansing Textile Fabrics and other Materials, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same—that is to say:

My said invention relates to improvements in connection with the ordinary "dash wheel" as at present in use in various manufacturing processes, the object of the said improvements being the rendering the dash wheel more extensively available as a bleaching and cleansing agent for textile fabrics and other materials than has hitherto been the case.

According to one modification under which this invention is carried out in practice, the dash wheel, which in its general features is constructed like those hitherto in use, is mounted upon a hollow shaft, which is put in communication with a steam pipe by means of a suitable stuffing-box joint. Steam is thus supplied through the hollow shaft into the several compartments of the wheel, either through perforations in the shaft itself, or through openings in branch pipes connected to the shaft, such branch pipes being arranged in any convenient manner in the compartments. The introduction of the steam alone into the dash wheel is sufficient to improve greatly the ordinary bleaching, washing, and cleansing and "posting" effect of the wheel, but with the further introduction of acids, alkalis, soap and other bleaching or preparing ingredients the dash wheel is made directly available as an excellent bleaching apparatus—various class of goods and other materials may be thus treated, but the invention is especially applicable for the treatment of "sewed muslins" or embroidered goods.

It is obvious that various mechanical arrangements may be adopted in thus modifying and applying dash wheels. And in order that my said invention may be properly understood I shall now proceed to describe the several explanatory figures on the sheet of drawings hereunto attached.

Figure 1 on the sheet of drawings is

a front elevation of a dash wheel as constructed according to one modification for the purposes of my invention. Fig. 2 is a transverse vertical section, showing the internal construction of the wheel, and Fig. 3 is a partial plan of the apparatus.

The dash wheel consists of a large cylinder A in this instance constructed of wood but which may be made of iron or other suitable material and which is divided internally into four separate chambers by four radiating partitions B indicated by dotted lines in Fig. 1, and lying behind the external iron straps C, through which they are bolted to the ends of the cylinder. The cylinder is mounted upon a tubular shaft D, which is carried in bearings E and F and a steam pipe G communicates with the open end of the tubular shaft which lies in the bearing E, a suitable joint being formed which prevents the escape of the steam while it allows of the rotation of the shaft, independently of the steam pipe. The portion of the tubular shaft D which is inside the cylinder A is perforated as at H, to admit the steam into the cylinder. The steam first finds its way into a square space I formed by boards J which unite the several partitions B near the center of the wheel, and it thence passes through perforations in the boards J into the compartments in which the articles to be operated upon are placed. Each compartment is provided with an opening K, by which the articles to be operated upon are introduced and these openings are closed in the usual way by tightly fitting lids L.

The dash wheel is made to rotate in the usual way, being driven by means of a bevel wheel M fast upon the shaft D and in gear with a bevel wheel N loose upon a first motion shaft O, running behind the dash wheel or behind a series of dash wheels. The bevel wheel N is put into gear with the shaft O by means of the clutch P worked by a forked lever on a shaft Q below. The shaft Q has fast on it a lever R which is linked to a lever S on another shaft T, passing to the front of the dash wheel and furnished with a hand lever U, by means of which the clutch is moved into or out of gear.

The articles to be bleached and operated upon by the dash wheel are introduced into the compartments by the openings K, and the bleaching ingredients being added the wheel is put in motion, and the steam is let

on through the tubular shaft, and the operation is completed in a much shorter time than is necessary according to the processes hitherto in use.

5 Figs. 4 and 5 on the sheet of drawings hereunto attached are elevations at right angles to each other of an arrangement of supply apparatus by means of which the chemical ingredients, steam, and water may
10 be admitted to the tubular shaft D of the dash wheel and thence into the interior of the dashwheel. This supply apparatus consists of a mixing vessel *a* into which the various chemical ingredients are put. This
15 vessel is made with a slightly-funnel-shaped bottom and a pipe *b* furnished with a stop-cock *c* passes down from the center of it. Below the stop cock *c* a water supply pipe *d* fitted with a stop cock *e* enters the pipe *b*
20 and below this pipe *b* communicates with one of the branches of a forked pipe *f* which communicates with the hollow shaft D of the dash wheel. The other branch of the pipe *f* communicates with the steam supply
25 pipe *g* which is likewise fitted with a stop cock *h*.

When the chemical ingredients are to be admitted into the dash wheel the steam cock *h* is closed and the cock *c* is opened or
30 if water is to be admitted the cocks *h* and *c* are closed and the cock *e* opened. When the contents of the dash wheel are to be

washed with water provision is made for the escape of the water near the periphery of the drum as represented in Fig. 1 of the
35 drawings, or perforations being formed in the ends of the drum as at *i* such perforations being closed at pleasure by slides *j*.

According to another arrangement of apparatus for conveying the various agents
40 used into the interior of the drum a series of cisterns are placed above the dash wheel a pipe from each provided with a stop cock, being made to communicate with a single large pipe communicating with the hollow
45 shaft D of the dash wheel. This shaft D may be made with stuffing boxes at both ends, the steam being admitted at one end and the water and chemical ingredients at the other end, the shaft being formed with
50 or without a central diaphragm or transverse stoppage to separate the two passages.

What I claim as my invention and desire to secure by Letters Patent is—

The use of the dash wheel for bleaching, 55 washing or cleansing textile fabrics, when combined with the use of chemical ingredients and steam, the whole being constructed and operating substantially as described.

JAMES WALLACE, JUNIOR.

Witnesses:

EDMUND HUNT,
WILLIAM AITKEN.