

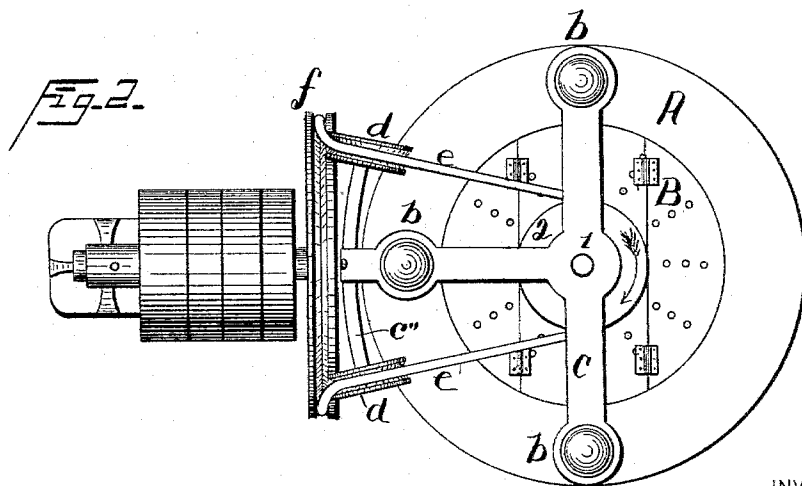
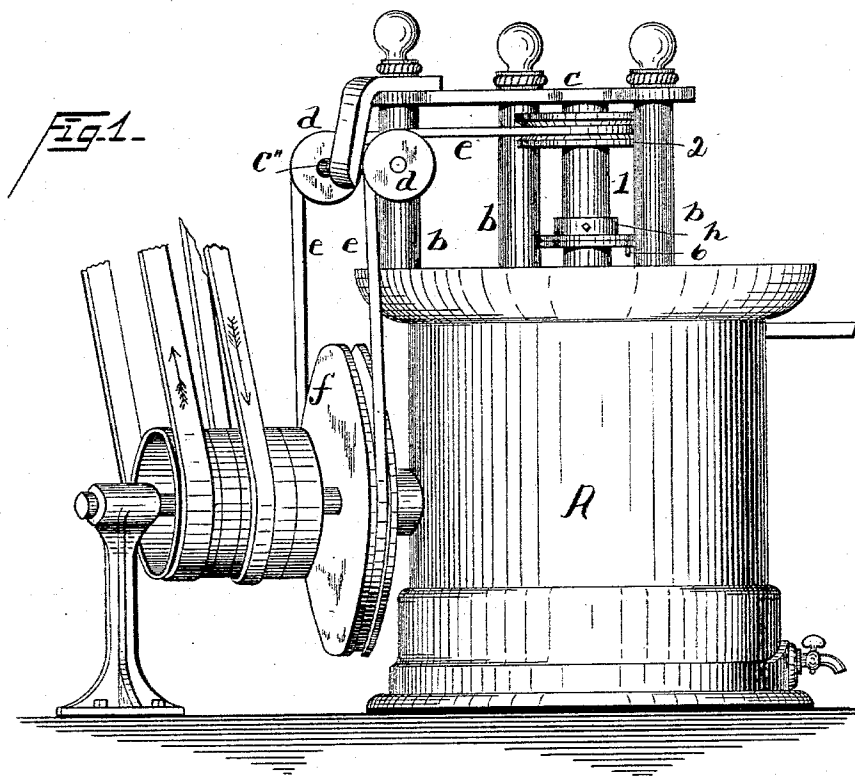
(No Model.)

2 Sheets—Sheet 1.

T. F. KYNE.
DYEING APPARATUS.

No. 531,847.

Patented Jan. 1, 1895.



WITNESSES:

Chas. H. Marvin.

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UNITED STATES PATENT OFFICE.

THOMAS F. KYNE, OF AMSTERDAM, NEW YORK.

DYEING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 531,847, dated January 1, 1895.

Application filed June 8, 1894. Serial No. 513,921. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. KYNE, of Amsterdam, in the county of Montgomery, in the State of New York, have invented new and useful Improvements in Dyeing Apparatus, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to dyeing, bleaching, carbonizing or washing machines, and particularly to that class which is provided with means for extracting the solution from goods by the centrifugal action incident to the rapid rotation of the basket holding said goods.

My object is to construct an apparatus of this class, comprising a case, a basket therein having perforated sides and bottom, means to raise and lower the basket to immerse the goods, and means whereby when the basket becomes automatically connected to the flanged collar on the drive shaft, so that the further rotation of said shaft will then rotate the basket, and by centrifugal action extract or expel the solution from the goods in said basket thereby leaving the goods nearly dry, and also retaining the major part of the solution in the case, to be used again.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a side elevation of the machine and its driving mechanism. Fig. 2, is a top plan thereof. Fig. 3, is a vertical transverse sectional elevation of the casing, basket, elevating screw and sleeve, steam coil, and part of the upper works. Fig. 4, is a side elevation of the basket, detached. Fig. 5, is an elevation of the drive shaft, detached. Fig. 6, is an enlarged side elevation of the detachable connection between the basket and the drive shaft, showing such connection broken and also showing part of the drive shaft, the flanged collar thereon, the rotating ring upon its flange, the pin secured to said ring and projecting through and below said flange, the collar secured to the top of the sleeve in the basket, the stud projecting above the sleeve collar, and the latch erected upon the

said rotating ring. Fig. 7, is a top plan view of the flanged collar upon the drive shaft, the rotating ring upon the flange of said collar, its connections to said flange, the latch upon said ring, the head of the shifting pin secured in said ring, and showing by dotted lines the aperture (a') in the flange, through which said latch is projected, when said aperture coincides with the point of the latch, also by dotted lines, the slot or elongated aperture in the flange of said collar, through which the shifting pin of the ring projects and in which it traverses to rotate said ring. Fig. 8, is a vertical section taken on the line x, x , of Fig. 7, and showing the collar upon the basket sleeve raised so as to bring the stud upon this collar into engagement with the shifting pin, to rotate the ring which carries the latch. Fig. 9, is a vertical sectional view, taken on or about the line $y-y$ of Fig. 7.

—A—, is the case or solution holder, cylindrical in form and having a tight bottom, and carrying the frame composed of the bars — c — c' — and c'' and the idle pulleys — d — are journaled upon the frame bar — c'' — over which the drive belt — e — leads from the drive pulley — f — to the driven pulley — 2 — secured upon the drive shaft — l — which shaft is threaded substantially as shown.

B, is the basket, comprising a cylindrical and perforated body, a perforated bottom and a tubular and internally threaded sleeve 3, adapted to receive the threaded portion of the drive shaft. A collar 4, is secured upon the top of this sleeve, the drive shaft passing through it, and this collar is also provided with a perforation — a — shown in Fig. 8, and further provided with a vertical pin or stud — 5 —. The disk 5^a, at the bottom of the shaft 4, is provided with a stud 6^a, which is engaged by the stud 6^b, of the basket, when at the bottom.

Upon the drive shaft a collar — h — is secured by the set screw (h') and is provided with a flange (k) integral with the collar body and the ring (k') which is loosely connected with the flange (k) and also fits loosely around the collar, resting upon the flange; such connection comprising the slot ways (m) in the ring k' , and the bolts or screws m' projecting through the slots into the flange k , the latter

also having a perforation a' . The aforesaid construction is provided for the purpose of allowing the ring k' , a limited movement that the bolt 11, may be moved out of alignment with the apertures. A stud or pin (6) is also fixed to said ring (k') and projects through a slot way (n') (dotted lines Fig. 7) in said flange, its lower end projecting below said flange and being adapted to engage with the stud (5) when the basket is raised high enough.

Upon the ring (k') a tubular post (9) is erected and in it a spring (10) and a spring bolt (11) are placed, the spring engaging with said bolt to eject it downward, through the perforations ($-a-a'-$) in the flange and collar, when the ring is shifted by the pin (5) engaging with the pin —6— so as to permit the bolt to enter said perforation.

In use the sleeve collar (4) is first disengaged by lifting the bolt 11 out of the apertures in the flange k , and collar 4, and then as the drive shaft is rotated one way, the basket is lowered into the solution in the case, immersing and saturating the goods, then reversing the rotation of the drive shaft, the basket is raised until, when above the solution, its height in the holder being indicated by dotted lines x, x , in Fig. 3, the stud (5) comes into engagement with the stud —6— and when the ring (k') is thereby shifted so that the spring (10) throws the bolt 11 down through the apertures in the flange (k) and collar (4) and thus locks the basket automatically to the shaft, and thereafter they rotate together and the centrifugal force extracts or ejects the greater part of the solution from the goods into the case, and after sufficient time the goods are removed from the basket

nearly dry. Then when the basket has been refilled, the bolt (11) is withdrawn and the ring (k') shifted by hand or otherwise, until the point of the bolt rests upon the flange and then the rotation of the shaft lowers the basket again.

Inasmuch as the raising and lowering of a perforated basket by means of a threaded drive shaft is old, I make no claim thereto separately, but only claim it in conjunction and combination with my other mechanism.

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

1. An apparatus for dyeing or other purposes consisting of a case, a basket mounted upon a threaded drive shaft, and means at the top and bottom to lock said basket and shaft together and to rotate them simultaneously.

2. An apparatus for dyeing or other purposes consisting of a case, a basket, a drive shaft adapted to raise and lower the said basket, a collar on the drive shaft having a flange, and means for automatically locking the basket to the flange, for the purpose described.

3. An apparatus for dyeing or other purposes, consisting of a case and a basket therein adapted to be moved vertically without rotation, and a bolt by which it is locked when raised to its utmost height, a drive shaft adapted to raise and lower the basket and to rotate it when locked.

In witness whereof I have hereunto set my hand this 11th day of May, 1894.

THOS. F. KYNE.

In presence of—

JAS. BARTLEY,
HOWARD P. DENISON.