(No Model.) 2 Sheets—Sheet 1.

A. KOPLIN & W. CROWE.

STRAINING APPARATUS.

No. 373,778. Patented Nov. 22, 1887.

FIG. 1.

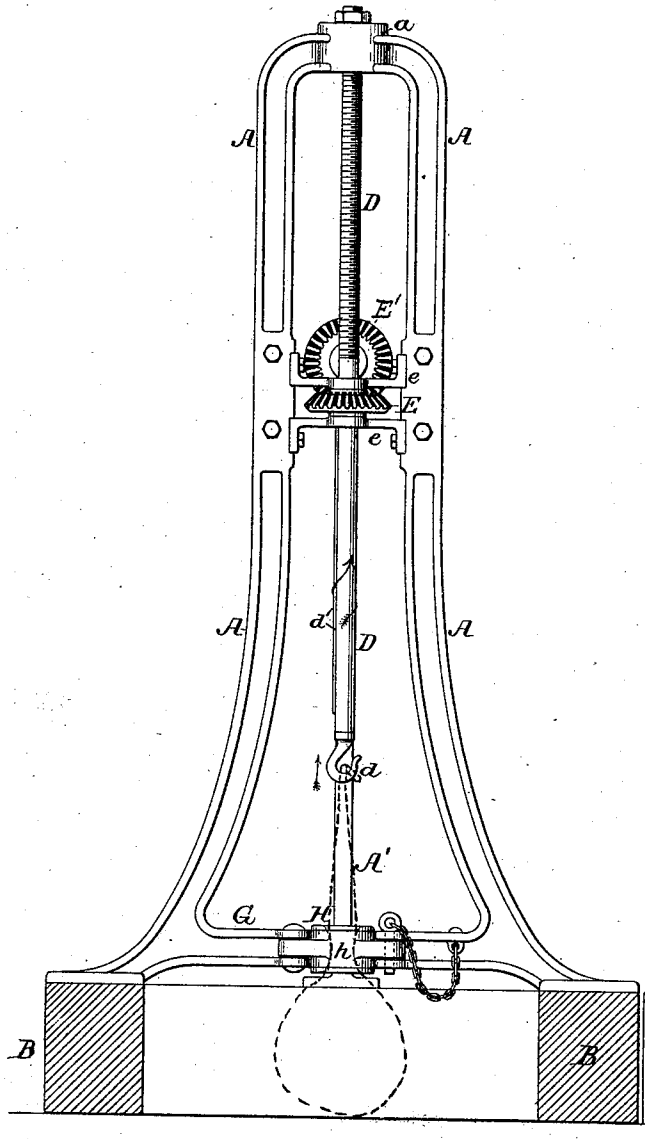
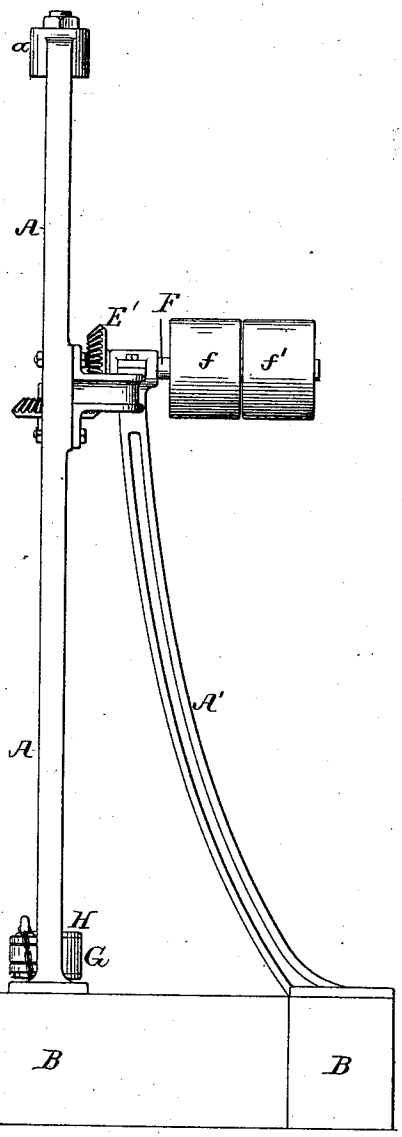


FIG. 2.



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(No Model.) 2 Sheets—Sheet 2.

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STRAINING APPARATUS.

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FIG. 3.

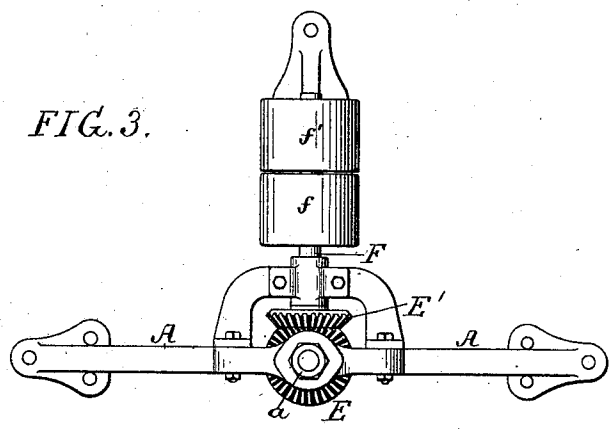


FIG. 4.

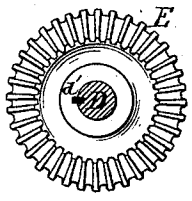


FIG. 5

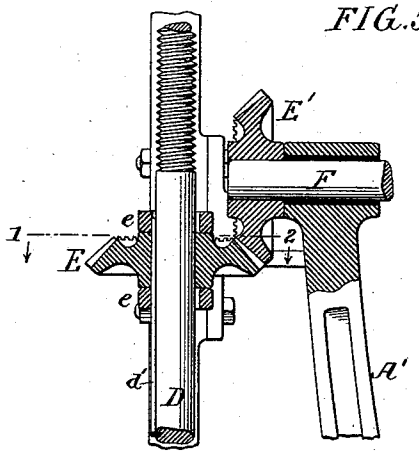
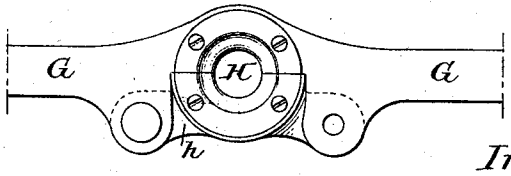


FIG. 6.



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UNITED STATES PATENT OFFICE.

AMOS KOPLIN AND WILLIAM CROWE, OF EDDYSTONE, PENNSYLVANIA.

STRAINING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 373,778, dated November 22, 1887.

Application filed March 5, 1887. Serial No. 229,779. (No model.)

To all whom it may concern:

Be it known that we, AMOS KOPLIN, a citizen of the United States, and WILLIAM CROWE, a subject of the Queen of Great Britain and Ireland, and both residents of Eddystone, Chester county, Pennsylvania, have invented an Improved Straining Apparatus, of which the following is a specification.

The object of our invention is to construct a simple and convenient apparatus for the automatic manipulation of straining-cloths which are used for the straining or filtering of such materials as the colors used in dyeing, calico-printing, and similar operations. It is the common practice now to manipulate these cloths by hand by uniting adjoining corners at opposite ends thereof into loops, hanging these loops on one hand so as to form a bag to contain the dye, and then twisting and straining the bag so as to force the dye or other material through the mesh of the cloth, and thus filter the material through the cloth, leaving the dirt in the straining cloth or bag. This is not only a very laborious operation, but requires skilled labor. We have constructed a simple and convenient apparatus by which this straining of the material through the cloth may be accomplished automatically, the machine being driven by steam or other power or by hand.

In the accompanying drawings, Figure 1 is a face view of our improved machine. Fig. 2 is a side view. Fig. 3 is a plan view. Fig. 4 is an enlarged sectional plan on the line 1 2, Fig. 5. Fig. 5 is an enlarged sectional view of the gearing; and Fig. 6 is a plan view of the straining-eye through which the cloths are drawn.

The machine consists of a yoke-shaped or other suitably-shaped frame, A, to be mounted on an open base, B, and having a central back leg, A′, so that the machine is somewhat in the form of a tripod. Passing centrally through the frame A is a vertical rod, D, having at its lower end a hook, *d*, on which the loops of the straining-cloth are to be suspended. The upper end of this rod D is threaded, as shown in Figs. 1 and 5, and this threaded portion is adapted to a fixed nut in the eye *a* at the upper end of the frame. The portion of the rod D below its threaded end is guided in two cross-bars, *e e*, and passes through a bevel-wheel, E, between the cross-bars *e e*, so as to be free to move longitudinally through the said wheel and yet to turn with it. For this purpose we provide a feather, *d′*, Figs. 1 and 5, adapted to a corresponding groove or seat in the wheel. Into this bevel-wheel gears a wheel, E′, Figs. 2, 3, and 5, on the end of a short horizontal shaft, F, adapted to bearings in the frame, and having driving-belt pulleys *f f′*, Figs. 2 and 3, or a crank-handle where it is to be turned by hand.

At the lower end of the frame A is a cross-bar, G, carrying a two-part eye-piece, H. One half of this eye-piece is secured to the cross-bar, while the other half is carried by a pivoted latch, *h*, of such a character that the eye-piece can be readily opened for the introduction of the ends of the straining-cloth, and as readily closed and secured when the machine is to be put in operation. The straining-cloth, with the contained dye or other material to be filtered, has its looped ends hung onto the hook *d* of the feed-rod D, as indicated by dotted lines in Fig. 1, and the neck of the bag thus formed is introduced into the open eye-piece H, which is then closed. The shaft F is then put in motion so as turn the bar D to feed it upward by the turning of the threaded portion of the rod in the fixed feed-nut. The rotary motion imparted to the rod D simultaneously with the longitudinal motion gives, by the friction of the cloth against the eye-piece, the desired twist to the straining-cloth, to force the dye or other material through the mesh of the cloth to properly strain or filter the material as the bag is turned and drawn through the eye-piece.

We claim as our invention—

1. The herein-described straining apparatus, comprising a fixed eye-piece and a feed-rod to which the straining-cloths may be attached, and devices, substantially as described, for imparting a rotary and longitudinal motion to the feed-rod.

2. The combination of the frame, having an eye-piece and a feed-nut, with a threaded feed-rod adapted to said nut, and devices, substantially as set forth, for rotating the said rod.

3. The combination of the frame, having an eye-piece and a feed-nut, with a threaded feed-

rod adapted thereto, a rotary gear-wheel having a feather-and-groove connection with the feed-rod, as and for the purpose described.

4. The combination of the frame, having a two-part eye-piece, with a feed-rod and mechanism, substantially as described, for imparting a rotary and longitudinal motion to the said feed-rod.

5. The combination of the frame, having at one end an eye-piece and at the other a feed-nut, with a threaded feed-rod adapted to said nut and having a hook to receive the straining-cloth, and a rotary gear-wheel having a feather-and-groove connection with said feed-rod, all substantially as set forth.

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

AMOS KOPLIN.
WILLIAM CROWE.

Witnesses:
TOM RICHMOND,
ALEX BAIN.