(No Model.) 2 Sheets—Sheet 1.

# I. F. PECK.

## SPINDLE HOLDER FOR DYEING YARN IN COPS.

No. 434,136. Patented Aug. 12, 1890.

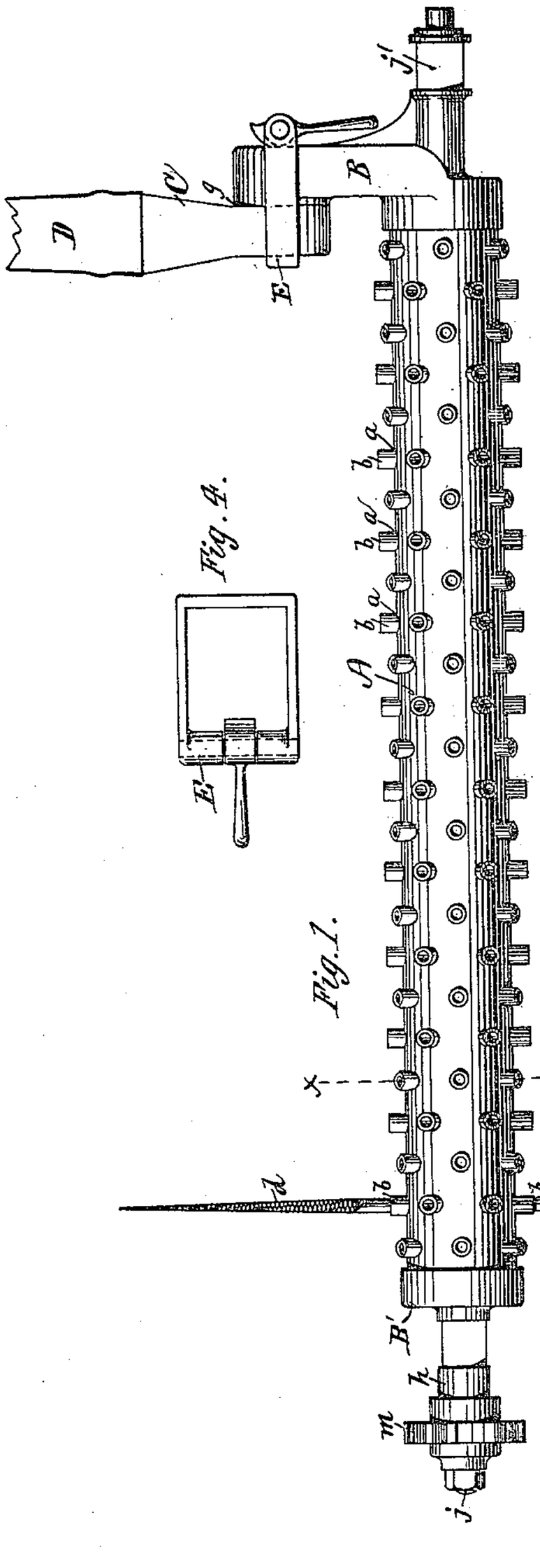


Fig. 1.




Fig. 4.

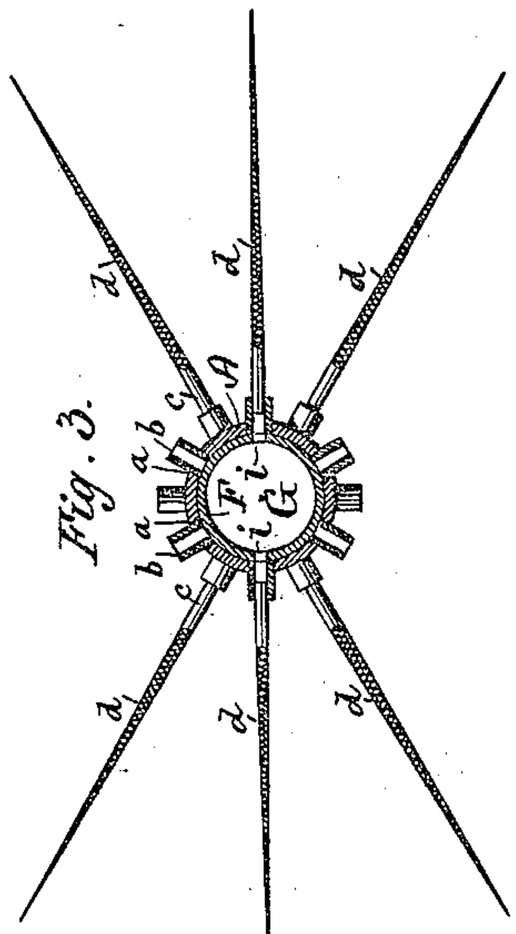


Fig. 3.




Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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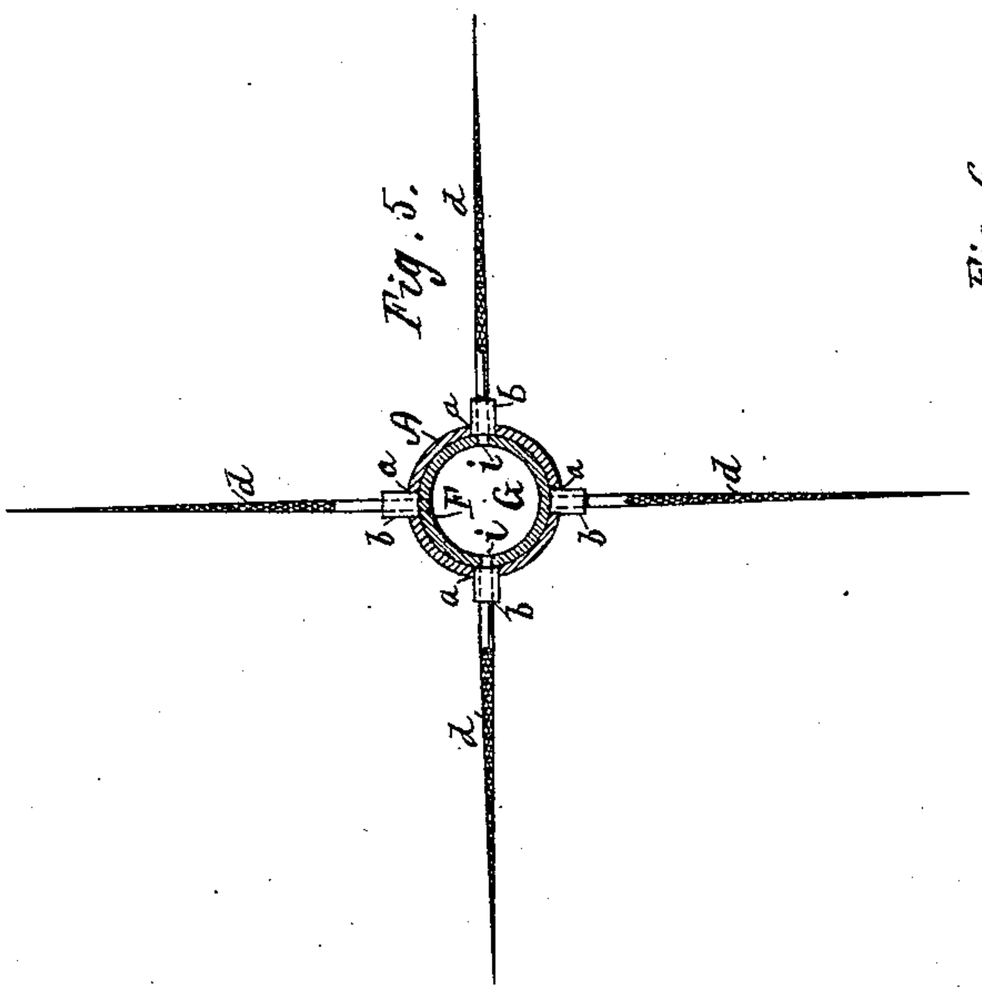





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# UNITED STATES PATENT OFFICE.

IRA F. PECK, OF PROVIDENCE, RHODE ISLAND.

## SPINDLE-HOLDER FOR DYEING YARN IN COPS.

SPECIFICATION forming part of Letters Patent No. 434,136, dated August 12, 1890.

Application filed May 21, 1890. Serial No. 352,647. (No model.)

*To all whom it may concern:*

Be it known that I, IRA F. PECK, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Spindle-Holders for Dyeing Yarn in Cops, of which the following is a specification.

In dyeing yarn in cops which are immersed in the dyeing-liquor upon hollow spindles, through which the dyeing-liquor is made to pass by means of a pump, it is very desirable to be able to operate upon a few spindles at a time, while a comparatively large number of spindles are held in the vat of dyeing-liquor ready to be acted upon alternately with the others, and by this means a uniform color will be produced in all of the cops in the vat and the time will be greatly economized; and my invention consists in the employment of a spindle-holder provided interiorly with a valve, which is adapted to alternately allow and prevent the passage of the dyeing-liquor through the several cops, so that while a comparatively great number of cops are in the dyeing-liquor only a portion of the same will be acted upon by the pump at any one time.

Figure 1 represents an elevation of a spindle-holder provided with my improvement. Fig. 2 is a longitudinal section of the same. Fig. 3 represents a transverse section taken in the line *x x* of Fig. 1. Fig. 4 is a top view of the clamp for connecting the hose to the spindle-holder. Fig. 5 is a transverse section of the spindle-holder, showing a modification. Fig. 6 is a longitudinal section of the same.

In the accompanying drawings, A is a perforated cylindrical shell, into the perforations *a a* of which are inserted the short tubes *b b*, which are adapted to receive the inserting-shank *c* of the hollow spindle *d*, upon which the cop is to be placed. The shell A is provided at one end with the hollow head B, which may be screwed upon the end of the tube, and which is provided with a passage *e*, extending to an opening *f* at the coupling-joint *g*. The hose or pipe D is provided with a hollow joint-piece C, which is held against the head B at the opening *f* to form a tight coupling-joint at *g* by means of the hand-clamp E, which is shown separate in Fig. 4. At the opposite end of the shell A is secured the head B′, provided with the hollow hub *h*, and within the bore of the cylindrical shell A and closely fitting the same is placed the valve F, which extends from end to end of the shell A, the said valve being provided at its opposite sides with the openings *i i*, so that the opposite longitudinal series of spindles *d d* will be acted upon by the vacuum in the chamber G, while the remaining spindles around the shell A will be unacted upon. The valve-stem *j* passes through the hollow hub *h*, which is provided with a stuffing-box *k*, and upon the projecting end of the stem *j* may be placed a gear *m*, by means of which the valve F may be rotated within the shell A to successively cover and uncover the openings to the spindles *d d*, the shell A being at the same time held stationary by any suitable means—as, for example, by means of the flattened shank *j′*—and as the valve F is turned within the shell A the several longitudinal series of spindles which project from the periphery of the shell will be successively brought under the action of the vacuum employed for causing the dyeing-liquor to flow through the cops placed upon the spindles.

A modification of my invention is shown in Figs. 5 and 6, in which the valve F is adapted for a sliding instead of a rotary movement within the shell A, and in this case the holes *i i* are arranged to open and close the passage to the several sets of spindles projecting from the periphery of the shell, and in operating the valve F the shell A is to be held stationary, as before, and the valve moved back and forth, as required, by means of the projecting stem *j*. When the spindle-holder, with its attached spindles and cops, is placed in a vat of dyeing-liquor, the liquor is to be drawn through the cops upon the spindles *d* by means of a suction-pump at the end of the hose or pipe D, thus creating a vacuum in the chamber G, which tends to draw the liquor inwardly through the cop.

I claim as my invention—

The combination, with the perforated shell provided with the hollow spindles, of a valve located within the hollow shell and adapted to open and close the passages to the hollow spindles successively, so that the dyeing-liquor will pass through a portion only of the spindles at any given time, substantially as described.

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Witnesses:
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