

(No Model.)

I. F. PECK.

HOLLOW SPINDLE FOR DYEING YARN IN COPS.

No. 408,667.

Patented Aug. 6, 1889.

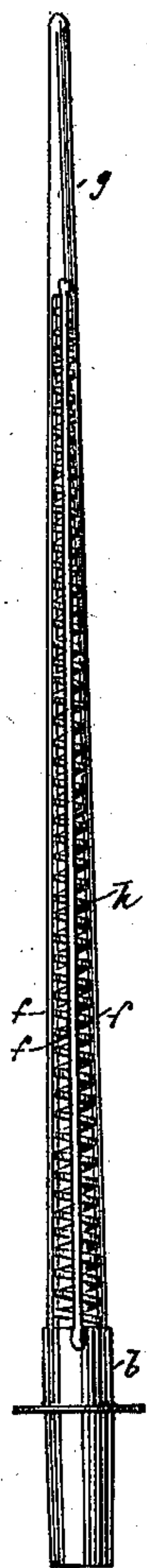


Fig. 5.

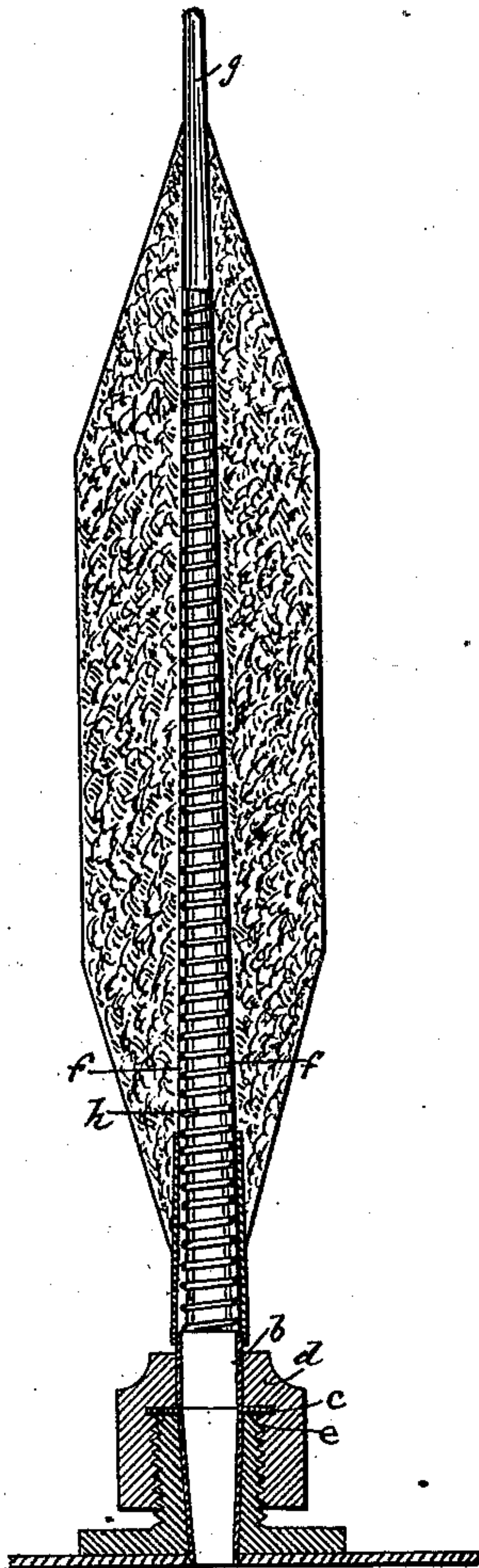


Fig. 4.

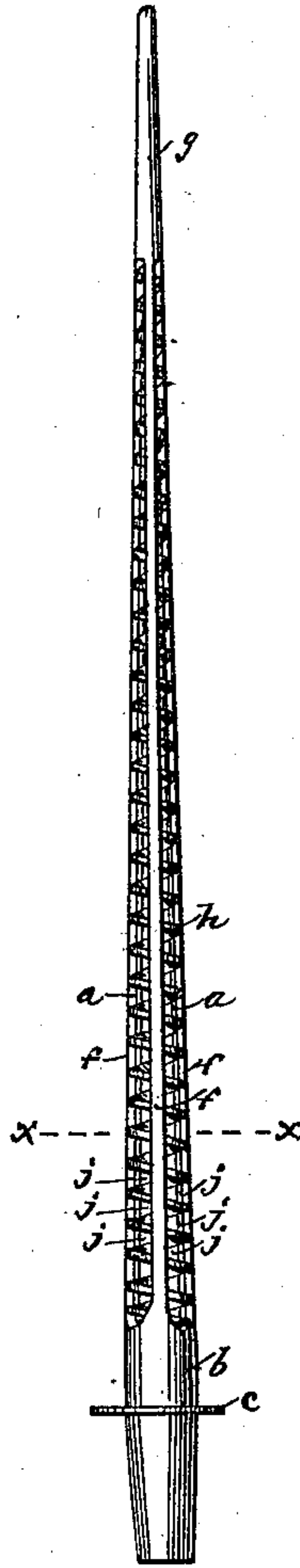


Fig. 2.

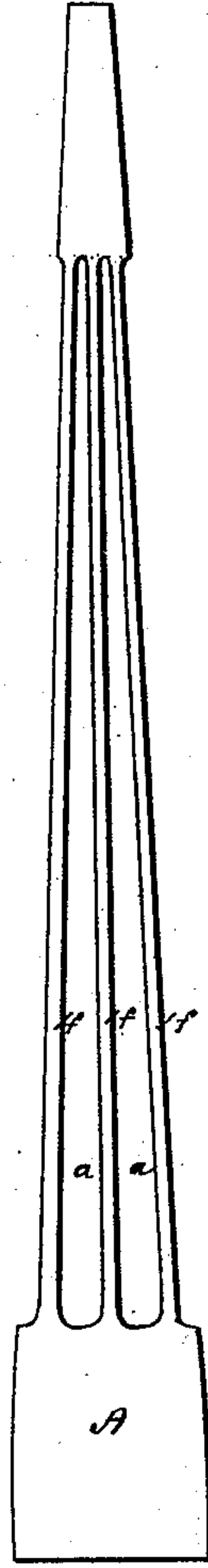


Fig. 1.

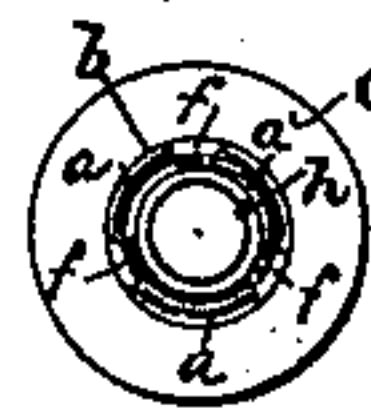


Fig. 3.

Witnesses
Herbert Hilford
John D. Lynch

Inventor
Ira F. Peck
per S. Scholfield
attorney

UNITED STATES PATENT OFFICE.

IRA F. PECK, OF PROVIDENCE, ASSIGNOR TO W. F. & F. C. SAYLES, OF PAW-TUCKET, RHODE ISLAND.

HOLLOW SPINDLE FOR DYEING YARN IN COPS.

SPECIFICATION forming part of Letters Patent No. 408,667, dated August 6, 1889.

Application filed February 20, 1889. Serial No. 300,590. (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
5 a new and useful Improvement in Hollow Spindles for Dyeing Yarn in Cops, of which the following is a specification.

The object of my invention is to provide a
10 cheaply-constructed and highly-efficient hollow spindle for the purpose of dyeing yarn in cops by the forced passage of the dyeing-liquor either outward from the hollow spindle or
15 inward to the same through the body of the cop; and it consists in the employment of longitudinal ribs and an inner wire support adapted to form suitable openings to the tubular portion of the spindle, as hereinafter fully set forth.

Figure 1 represents a plan view of a sheet-
20 metal blank from which the outer surface of my improved hollow spindle may be formed. Fig. 2 represents an elevation of my improved hollow spindle. Fig. 3 represents a transverse section of the same, taken in the line x
25 x of Fig. 2. Fig. 4 represents a longitudinal section of the spindle mounted for use. Fig. 5 represents a modification in which the attaching-tube, terminating tip, and the ribs are separately formed.

30 In the accompanying drawings A represents a sheet-metal blank provided with the longitudinal openings $a a$, and from which the body of the spindle is formed, the said blank being folded or rolled so as to form a tube b ,
35 Fig. 2, by means of which the spindle can be attached to the pipes or vessels through which the dyeing-liquor is made to pass, the said tube being preferably provided with the flange c , by means of which the spindle can
40 be firmly held in its working position, as

shown in Fig. 4, the flange c being held between the nut d and the seat e . The ribs $f f$
45 f extend from the end of the tube b to the terminating tip g of the spindle, and are supported against lateral pressure by means of the spirally-wound wire coil h , between the
50 coils of which at the spaces a between the ribs f the dyeing-liquor will be made to pass to color the yarn of the cop F, the wire h serving to support the cop against inward
55 pressure and to divide the space a into a series of openings j , which division and support are the gist of my improvement.

The ribs f may be of any desirable number, three ribs being shown in the drawings; and
60 instead of making the body of the hollow spindle from a sheet-metal blank, as shown in Fig. 2, the same can be made from a tube b and a terminating tip g , which are connected
65 to each other by means of the attached wire ribs $f f f$, as shown in Fig. 5; but I prefer to make the body of the spindle in one piece, as before described.

By my improvement I am able to construct a hollow spindle having desirable strength
70 and durability with a comparatively large area of openings for the passage of the liquor supplied for dyeing the yarn in the cop which surrounds the spindle, and through which the dyeing-liquor is to be forced by suitable
75 means.

I claim as my invention—

The hollow spindle having a tube adapted for attachment, the terminating tip, the longitudinal ribs, and the inner wire coil, substantially as and for the purpose specified.

IRA F. PECK.

Witnesses:

SOCRATES SCHOLFIELD,
JOHN S. LYNCH.