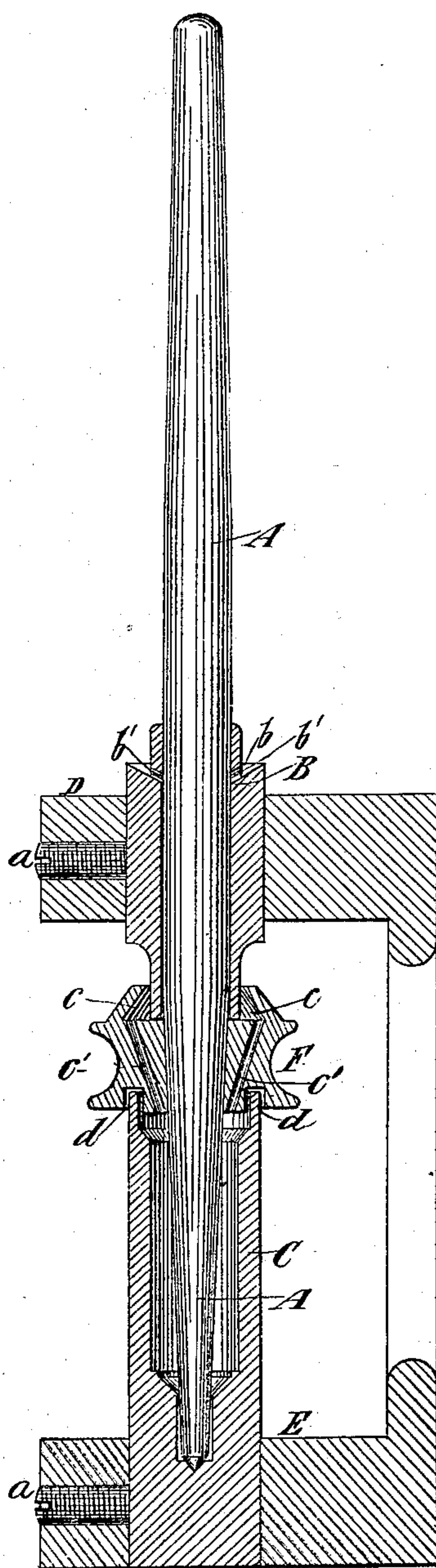


(No Model.)

W. G. MORRISON.
SPINDLE FOR SPINNING FRAMES.

No. 264,327.

Patented Sept. 12, 1882.



Witnesses

Edw. Haynes
Ed. Moraw

Inventor

Walter G. Morrison
by his Attorneys
Brown & Brown

UNITED STATES PATENT OFFICE.

WALTER G. MORRISON, OF WILLIMANTIC, CONNECTICUT.

SPINDLE FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 264,327, dated September 12, 1882.

Application filed September 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, WALTER G. MORRISON, of Willimantic, in the county of Windham and State of Connecticut, have invented a certain new and useful Improvement in Spindles for Spinning-Frames, of which the following is a specification.

The object of my invention is to provide for more effectively oiling the steps of spindles through the bolsters without wasting or scattering the oil.

The invention consists in the combination, with a spindle and its step, of a whirl having upon or in its top an oil-cup which flares outward from the mouth downward, and having inclined passages leading from the widest part of said cup, at points radially beyond the mouth or edge of the cup, downward and inward, for conducting oil from the cup into the step, and a bolster which has an oil cup or channel in its upper end, and the lower end of which extends downward into the oil-cup in the whirl, all as hereinafter fully described.

The accompanying drawing represents a vertical section of a portion of a spinning-frame comprising my invention.

A designates the spindle. B designates the bolster. C designates the step, and D and E designate respectively the bolster and step-rails, in which the bolster and step are secured by set-screws *a*. F designates the whirl, secured upon the spindle A in the usual way.

The upper end of the bolster B is made concave, or has an annular channel, *b*, for the reception of oil; and *b'* are holes extending from said channel inward to the spindle A.

In the upper part or side of the whirl F is formed an oil cup or chamber, *c*, the sides or walls of which flare outward from the mouth downward, so that the internal form of the chamber is conical.

The lower end of the bolster B is represented as reduced in diameter, and enters the cup or chamber C, as clearly shown, and leading from the extreme outer portion of the oil-cup *c* at points radially beyond the mouth or edge of the cup are openings *c'*, which serve to deliver oil downward into the step. The function of the downwardly-flaring oil-cup *c* and the passages *c'*, leading from the widest part thereof, and from points radially beyond the

mouth or edge of the cup, is a very important one, and the advantages resulting from the use of my invention are due to this particular construction. When the spindle is in rotation the centrifugal force will carry all the oil outward against the wall of the cup, and if the oil accumulates therein to a sufficient extent it will be thrown out of the mouth or over the edge of the cup by the centrifugal force. Therefore it will be seen that if the passages *c'* or their upper ends were radially within the mouth or edge of the cup they would not be supplied with oil, for the oil would be thrown out of the mouth of the cup before it had accumulated sufficiently to cover the upper ends of the passages. Where the passages are radially beyond the mouth or upper edge of the cup their upper ends will always be covered by oil long before the oil can fly out of the cup, and the centrifugal force of the oil, acting in conjunction with the downwardly and outwardly inclined wall of the cup, will create a pressure sufficient to force the oil through the passages and to keep the passages clear, open, and free from dirt or sediment.

It is obvious that as the oil emerges from the lower ends of the passages *c'* it will be thrown outward by the centrifugal force of the whirl, and to prevent the oil from escaping I form a projection upon the under side of the whirl which enters the step C. This projection is produced in this example of my invention by forming an annular groove, *d*, in the under side of the whirl, into which the top of the step enters; but it is immaterial whether the whirl projects downward outside of the spindle (as it does when the annular groove *d* is formed) or not.

In lieu of the cup *c* being formed in the top of the whirl F, it might be formed in a separate piece and carried by the whirl.

I am aware that it is not new to provide a whirl with an oil-cup flaring downward and outward from the mouth and passages leading from said cup downward through the whirl, and I do not claim this broadly as of my invention. In such whirls as heretofore made, however, the upper ends of the passages have been radially within the mouth or upper edge of the cup, and the oil is thrown out over the mouth or upper edge of the cup long before it covers

the upper ends of the passages, and hence the centrifugal force has tended to carry and keep the oil away from the passages instead of forcing it through the passages, as in my case.

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

The combination, with the spindle A and its step, of the whirl F, having upon or in its top an oil-cup, *c*, which flares outward from the
10 mouth downward, and having inclined passages *c'* leading from the widest part of the

oil-cup, at points radially beyond the mouth or upper edge of said cup, downward and inward, for conducting oil into the step, and the bolster B, having an oil cup or channel in its upper
15 end, and having its lower end extending downward into said whirl, substantially as and for the purpose herein described.

WALTER G. MORRISON.

Witnesses:

HUBER CLARK,

WILLIAM E. BULLARD.