C. G. BUTTRICK & T. B. FLANDERS.

Apparatus for Oiling Spindles.

No. 167,823. Patented Sept. 21, 1875.

Fig. 1.

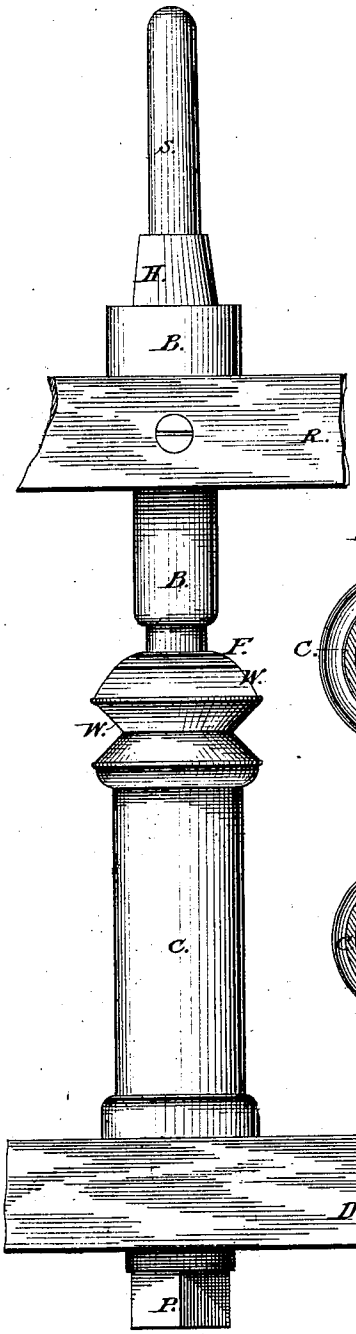


Fig. 3.

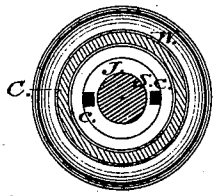


Fig. 4

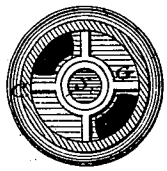
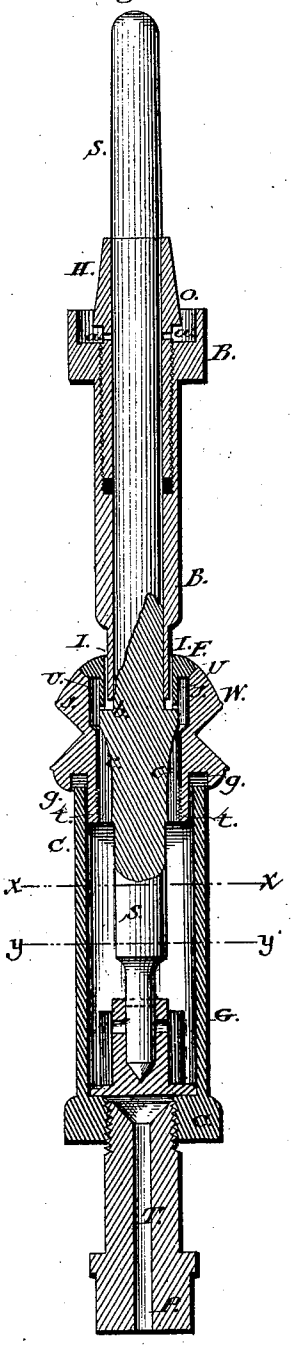


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES G. BUTTRICK AND TIMOTHY B. FLANDERS, OF HOLYOKE, MASS.

IMPROVEMENT IN APPARATUS FOR OILING SPINDLES.

Specification forming part of Letters Patent No. **167,823**, dated September 21, 1875; application filed April 5, 1875.

To all whom it may concern:

Be it known that we, CHARLES G. BUTTRICK and TIMOTHY B. FLANDERS, of Holyoke, Massachusetts, have invented certain Improvements in Apparatus for Oiling Spindles; and we do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of our improved spindle-oiling apparatus. Fig. 2 is a vertical central section of the same. Fig. 3 is a transverse section, looking upward on line *x x* of Fig. 2. Fig. 4 is a similar section, looking downward on line *y y* of Fig 2.

The same part is indicated by the same letter of reference wherever it occurs.

The nature of our invention consists in the peculiar arrangement and construction, as hereinafter detailed, of the whirl, sleeve, and step for a live spindle, whereby we are enabled, after introducing oil at the top of the bolster, to lubricate the upper bearing of the spindle, and then conduct the oil down through the whirl and step to the lower bearing, whence it flows through the plug in the step-rail, and is collected and saved in a suitable reservoir placed below the rail, the entire lubrication being automatic and continuous, and effected without soiling the exterior surface of the apparatus with oil escaping by centrifugal force, all in the manner hereinafter more particularly set forth.

The present invention is an improvement on the spindle-oiling apparatus for which Letters Patent No. 159,499 were granted to us February 9, 1875.

In the accompanying drawings, S marks the spindle, which may be of any desired form. B is the bolster, set in the bolster-rail R, and extending down into the top of a sleeve, J, inserted in the whirl W, and attached to the spindle S. The upper end of the bolster is provided with a cup, O, which communicates, by means of two holes, *a a*, with its bore. Into this cup the lubricating oil is introduced. The sleeve J extends from the top to the bottom of the whirl. Its top is formed into a lip or flange, F, whose outer surface corresponds and is continuous with that of the whirl. The under side of the lip rests upon the beveled upper edge of the whirl. The lower end of the sleeve is provided with a slightly-projecting screw-thread, *t*, which is received by a corresponding thread in the lower end of the bore of the whirl.

By these connections the sleeve serves to draw the flange F into close contact with its seat, and to hold the whirl firmly in place upon the spindle. The sleeve J has a cup, I, in its upper end, which receives the lower end or extension of the bolster B.

Between the flange F and the screw-thread *t* the body of the sleeve is reduced in size, so as to leave an annular space between its surface and the inner surface of the whirl for the passage of oil. Grooves or channels *c c*, cut through the threads of screw *t*, serve as conduits for the oil, leading it into the step C below.

The whirl has the usual exterior form. In its upper part is formed a chamber, U, under the lip F and outside the sleeve. Into this chamber the oil from the bolster passes through the holes or slots *b b*, and thence escapes into the annular space around the sleeve and into the channels *c c*. The lower side of the whirl is provided with a groove, *g*, which receives the upper rim of the cylindrical step or chamber C, said rim passing outside the threaded portion of the whirl and under a lip or projection on the outside of the whirl. This construction prevents the oil from being thrown out by centrifugal action, or escaping from the lower ends of the channels *c c*.

The lower end of the spindle S rests in the cup-bearing G, formed as shown and described in our patent of February 9, 1875, hereinbefore referred to. The oil flowing down the spindle fills the cup till it overflows through holes in its sides, and escapes into the bottom of the step C. A hollow plug, P, passes up through the step-rail D, and is screwed into the bottom of cylinder C to hold it in place, as shown in Fig. 2. This plug is hollow, having a passage from end to end, and is provided at top with a funnel-shaped opening, which connects with its hollow passage T. The oil which overflows the cup-bearing G flows from the bottom of step C into the top of plug P,

and is conducted by it into any suitable receptacle below the step-rail D, and is preserved for renewed use.

The operation has been sufficiently indicated in the description of the construction.

The course of the oil is effectually controlled, so as to secure the perfect lubrication of the spindle, with the utmost economy of oil and cleanliness of the apparatus and machines.

We claim as our invention—

1. The combination of the sleeve J, having the flange F and screw-thread *t*, with the whirl W and spindle S, in the manner and for the purpose described.

2. The combination of the step C, rail D, and hollow plug P, in the manner and for the purpose specified.

The above specification of our invention signed and witnessed at Holyoke, Masssachusetts, this 30th day of March, A. D. 1875.

C. G. BUTTRICK.
T. B. FLANDERS.

Witnesses:
WM. C. CHURCH,
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