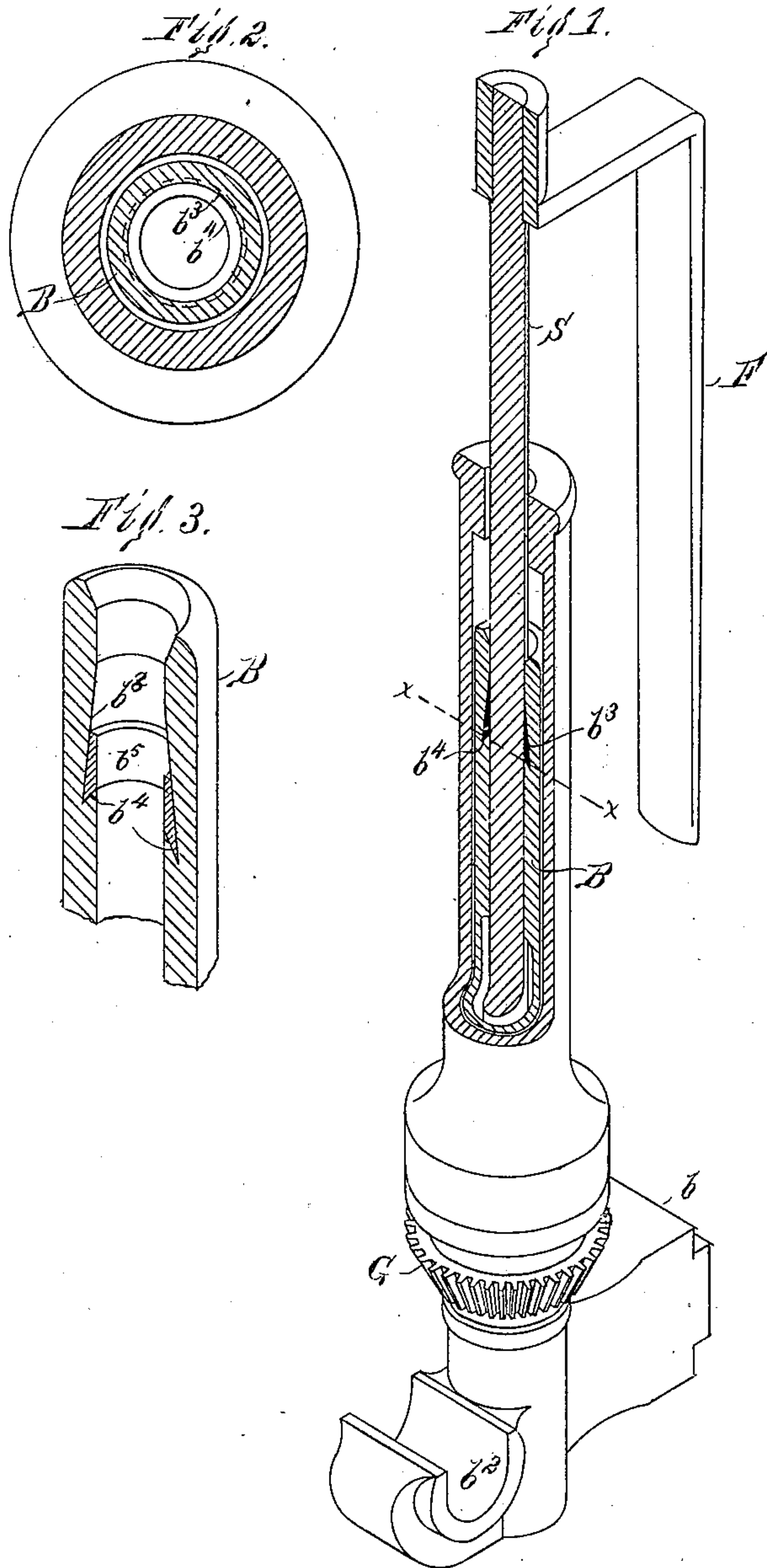


(No Model.)

A. L. DURGIN.  
BOLSTER FOR FLY FRAMES.

No. 356,194.

Patented Jan. 18, 1887.



Witnesses—

*Winkley H. Lee.*

*Gertrude M. Day.*

INVENTOR—  
*Albion L. Durgin,*  
By *Albert M. Moore,*  
*His Attorney.*



# UNITED STATES PATENT OFFICE.

ALBION L. DURGIN, OF BIDDEFORD, ME., ASSIGNOR TO T. C. ENTWISTLE & CO.

## BOLSTER FOR FLY-FRAMES.

SPECIFICATION forming part of Letters Patent No. 356,194, dated January 18, 1887.

Application filed May 13, 1886. Serial No. 202,105. (No model.)

*To all whom it may concern:*

Be it known that I, ALBION L. DURGIN, a citizen of the United States, residing at Biddeford, in the county of York and State of Maine, have invented a certain new and useful Improvement in Bolsters for Fly-Frames, of which the following is a specification.

My invention relates to bolsters for fly-frames; and it consists in the devices and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an isometric view of a bobbin, the pinion which drives the same, the bolster-bracket, the upper part of a bolster provided with my improvement, the upper part of a spindle, and part of a flier, the bobbin, bolster, spindle, and flier being partly in central vertical section; Fig. 2, a horizontal cross-section of the bobbin, bolster, and spindle on the line  $x$  in Fig. 1; Fig. 3, an isometric view of a central section of the upper part of the bolster, showing an annular packing of porous material placed in the annular oil-receiving groove.

Heretofore it has been impossible to keep the bearing-surfaces of the spindle and bolster of a fly-frame properly lubricated without oiling the same at least as often as the bobbins are doffed—that is, several times a day. With the ordinary construction of fly-frame, bolsters, and spindles a large part of the oil applied to the spindles above the top of the bolsters runs down through the bolsters onto the floor, or onto other parts of the machine, thus wasting the oil and requiring more frequent lubrication.

The object of my invention is to insure a better lubrication and to save oil and time.

The bolster B is provided at its lower end with a bracket,  $b$ , which is secured to a horizontal bolster-rail, (not shown,) said bolster-rail having a reciprocating vertical motion to cause the bolster to traverse vertically on the spindle S. The spindle S is rotated about its axis by the usual mechanism, (not shown,) and has no vertical motion. To the upper end of the spindle S is secured the flier F. The bolster B is provided with an annular shoulder near the bracket  $b$ , upon which rests a beveled gear, G, said gear surrounding the bolster and being driven by a beveled gear on a horizontal shaft, (said gear and shaft not being shown,)

which turns in a bearing or half-journal box,  $b^2$ , secured to the lower part of said bolster.

All of the above-named parts are of the usual construction and operation, except that the bolster is provided near its top, on the inside of the same, with an annular groove,  $b^3$ , having outwardly and downwardly inclined sides, the inclination of the bottom or lower side,  $b^4$ , to the surface of the spindle being such as to catch the oil applied to the spindle above the bolster and prevent its running through the same, and the inclination of the outer or upper side of said groove being such as to allow the oil to be wiped off onto the spindle as the bolster descends, the groove carrying a supply of oil up and down upon the spindle as the bolster traverses.

If desired, an annular packing,  $b^5$ , of felt or other absorbent material, may be inserted in the groove  $b^3$ , to assist in retaining the oil in the groove or annular oil-receptacle  $b^3$ , and to assist in lubricating the spindle by wiping against the same as the bolster traverses; but the packing will rarely be required if the bolster and spindle properly fit each other, because the shape of the groove  $b^3$  is such that the lower side of the groove (being inclined outward and downward and having a sharp upper edge) will scrape off the surplus oil from the spindle as the bolster rises, while the angle which the outer upper long side of the groove makes with the surface of the spindle is so obtuse as not to interfere with the oil being drawn from the groove freely when the bolster descends on the spindle.

The construction above described renders it unnecessary to oil the bolster oftener than once a week. Keeping the spindle properly lubricated prevents wear of the bolster and spindle, the spindle being held in a vertical position by its step and by said bolster, and saves power, because when the spindle and bolster become worn the upper end of the spindle, which supports the weight of the flier, will wobble and require more power to drive the spindle.

I claim as my invention—

1. A bolster provided with an internal annular oil-receptacle, the lower side or bottom of which is inclined downward and outward, as and for the purpose specified.

2. A bolster having a central opening adapted to receive a vertical spindle and to allow said bolster to have a vertical traverse on the same, and provided, also, with an internal annular oil-receptacle, the lower side or bottom of which is inclined downward and outward, and the upper side of which makes an obtuse angle with the inner surface of said bolster above said last-named side, as and for the purpose specified.

3. The combination of a bolster provided with an internal annular oil-receptacle, the lower side or bottom of which is inclined

downward and outward, and an annular packing of absorbent material placed in said annular receptacle, as and for the purpose specified.

4. The combination of a bolster provided with an internal annular oil-receptacle, the lower side or bottom of which is inclined downward and outward, and an annular packing of felt placed in said receptacle, as and for the purpose specified.

ALBION L. DURGIN. [L. S.]

Witnesses:

GEO. W. WHITTLESEY,  
L. B. LADD.