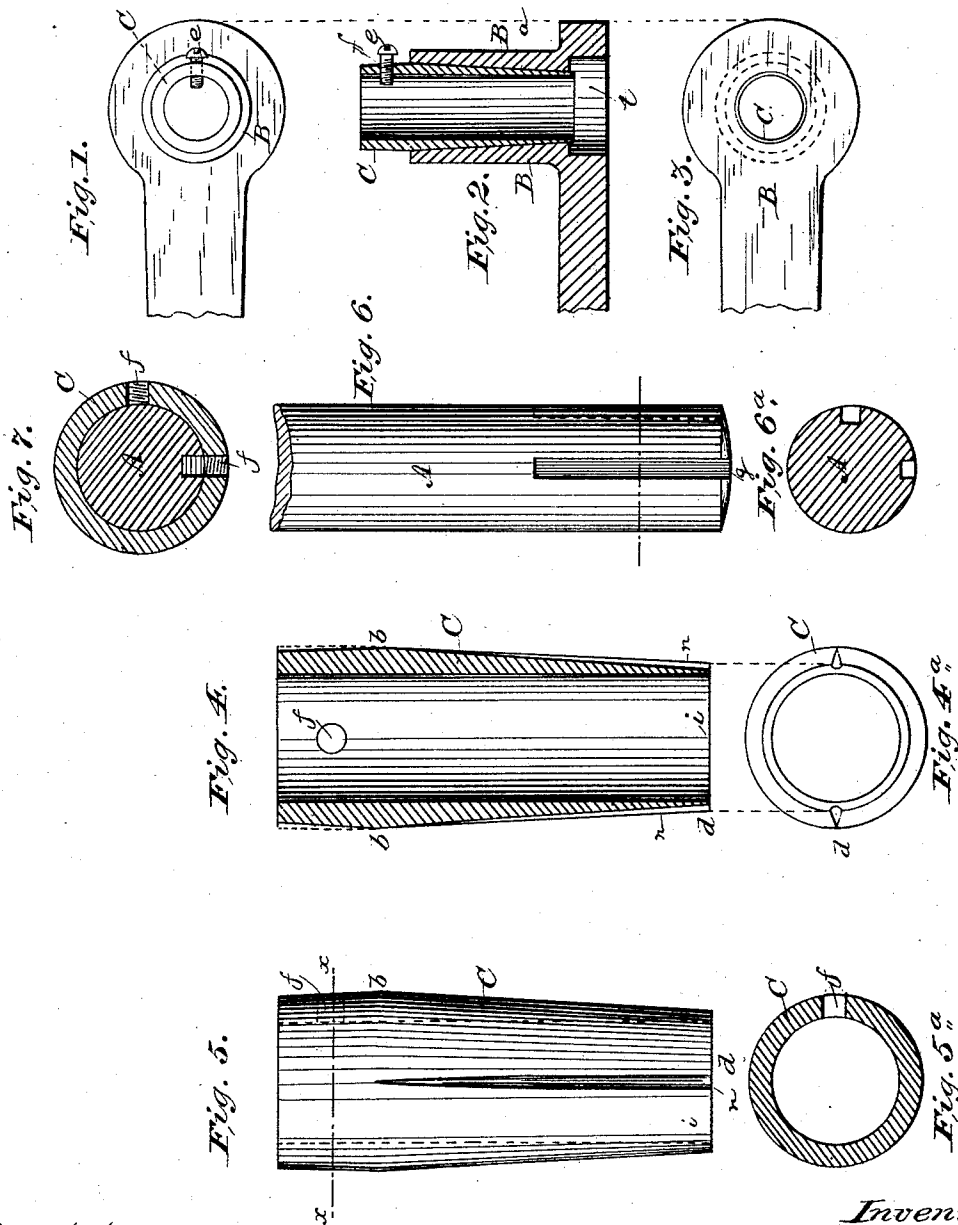


(No Model.)

C. E. TIBBLES.
JOURNAL BEARING.

No. 328,088.

Patented Oct. 13, 1885.



Witnesses:

J. C. Drecht

J. A. Ellsworth

Inventor:

Charles E. Tibbles,

By R. K. Evans

Attorney.

UNITED STATES PATENT OFFICE.

CHARLES E. TIBBLES, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE TIBBLES MANUFACTURING COMPANY, OF SAME PLACE.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 328,088, dated October 13, 1885.

Application filed March 12, 1885. Serial No. 158,571. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. TIBBLES, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Journal-Bearing; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a bottom plan view of my invention applied to a sewing-machine shuttle-lever. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a plan view on the end opposite to that shown in Fig. 1. Fig. 4 is a vertical sectional view of the conical sleeve. Fig. 4^a is a plan view of the conical sleeve. Fig. 5 is a side elevation of the conical sleeve. Fig. 5^a is a cross-sectional view on Fig. 5, line *x x*. Fig. 6 is an elevation of the spindle or journal. Fig. 6^a is a cross-sectional view on line *y y* of Fig. 6.

The object of my invention is to provide a journal-bearing wherein the lost motion due to the wearing away of the surfaces can be taken up and a true bearing maintained.

My invention consists of a tapering bearing and a journal in combination with an intervening sleeve having its exterior surface tapering in two directions, as will hereinafter be fully described, and specifically pointed out in the claims.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a shaft or spindle. B is the bearing or box having its interior tapered, as shown at *a*. Between the journal and the bearing is inserted a sleeve, C, having its interior surface conforming to the shape of the journal, and its exterior surface tapering decreasingly from *b* to *d*, to conform to the taper of the interior of the bearing B. The tapering sleeve is secured to the journal by means of a set-screw, *e*, which passes through a tapped hole, *f*, and into a slot, *g*, in the journal; or the slot may be omitted, if desired, and the set-screw be made to abut against the surface of the shaft. So far as described, this construction enables me to advance the tapering sleeve into the tapering bearing to compensate for the wear which oc-

curs only between the tapering surfaces. If the sleeve, from *b* to its larger end, were a true cylinder, the wear upon it would be certain to create a shoulder or jog along the line of the edge of the bearing. Such a shoulder would destroy the efficiency of the sleeve, for the reason that it would make an irregular bearing when the tapering sleeve is advanced. To avoid this difficulty, I taper the sleeve from *b* to its larger end in a less degree than the taper of the bearing-surface.

In order to successfully advance the tapering sleeve into the tapering bearing, there must be no obstruction to advance of the small end *i*; otherwise the abutting of the smaller end against any obstacle would require said end to wear away with sufficient rapidity to allow the sleeve to be advanced. This would not occur; and to provide against such an obstacle to practical operation, I either cut away a portion of the bearing, as seen at *t*, to form a chamber, into which the tapering sleeve passes as it is advanced, or allow the sleeve to project entirely through the bearing, so no obstruction is offered to the advance of said sleeve.

The chamber formed by cutting away the bearing, as shown at *t*, I use as an oil-receptacle, and provide the outer surface of the tapering sleeve with grooves *n n*, opening into the oil-receptacle, to conduct the oil between the wearing-surfaces.

The set-screw enables me to change the relation of the sleeve around the shaft at any time, if it is discovered that the bearing-surfaces are wearing unevenly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The bearing B, having a tapered interior, and the shaft A, in combination with the intermediate sleeve, C, having its exterior surface tapering in two directions, substantially as set forth.

2. A shaft, A, and a tapering sleeve, C, in combination with an open bearing, B, substantially as described.

CHARLES E. TIBBLES.

Witnesses:

FRANK D. ELLSWORTH,
W. E. STEARNS.