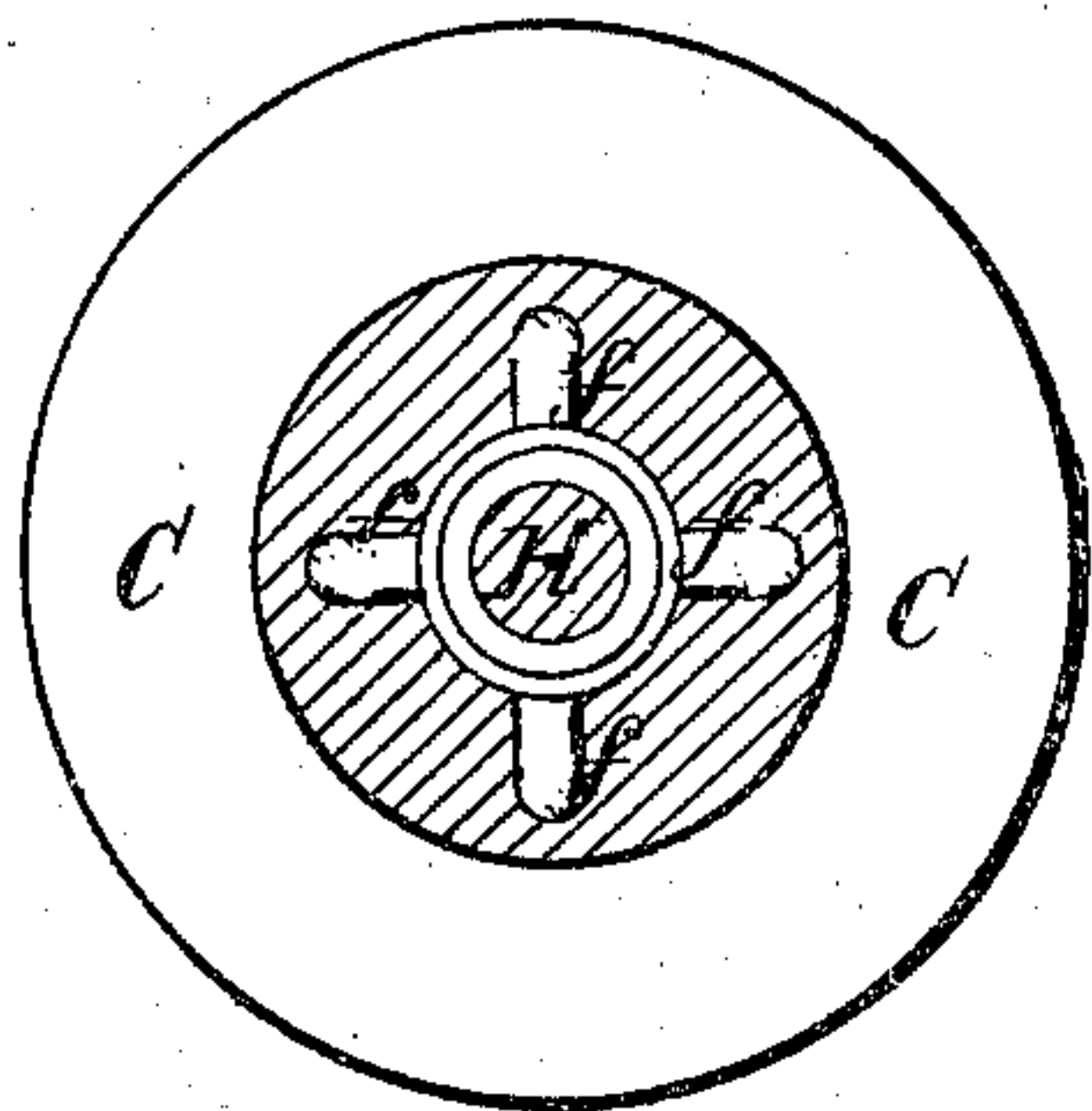
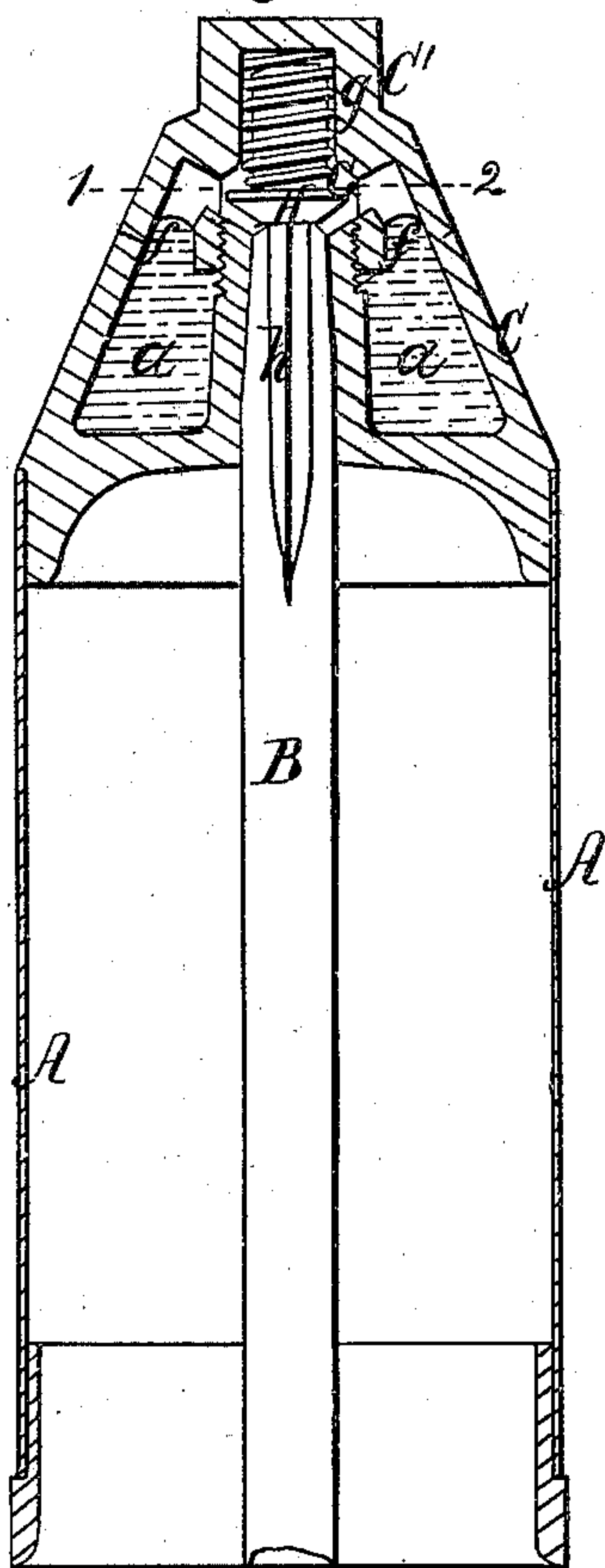


*Daugherty & McLaughlin*  
*Lubricating Throstle Spindles*  
*N<sup>o</sup> 15,690.      Patented Sep. 9, 1856.*

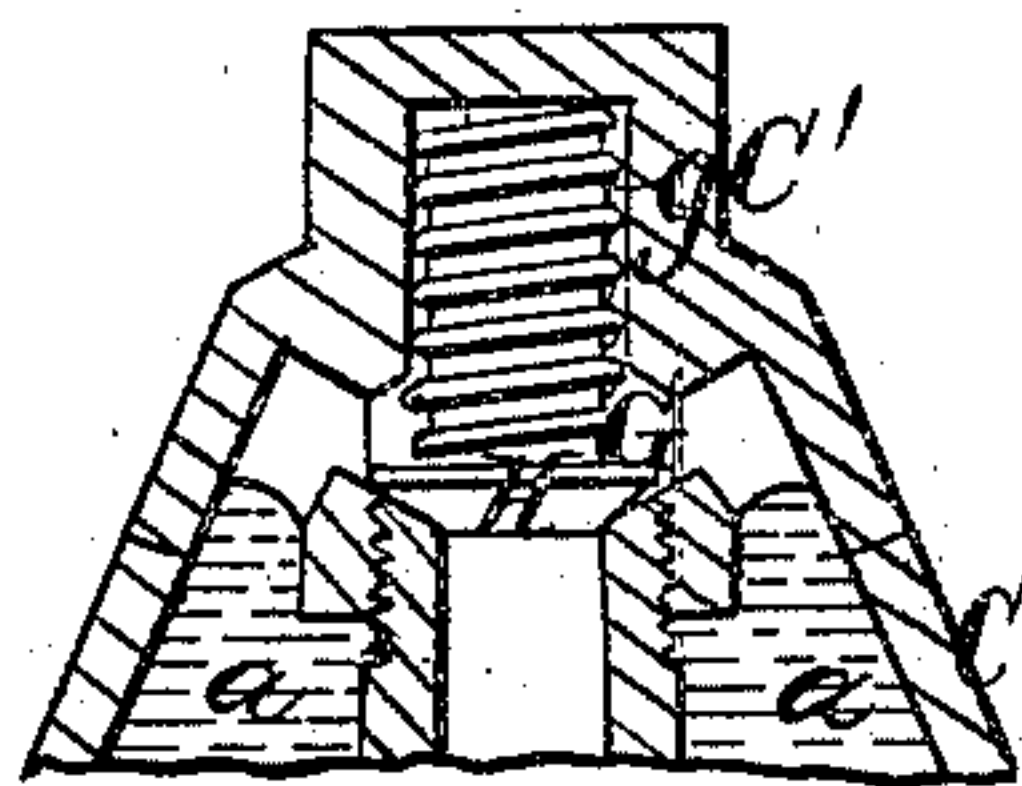
*Fig. 2.*



*Fig. 1.*



*Fig. 3.*



*Witnesses,*  
*Henry Howson*  
*William E. Dalton*

*Inventor;*  
*G. W. Daugherty*  
*Thomas E. McLaughlin*



# UNITED STATES PATENT OFFICE.

GEO. W. DAUGHERTY, OF CROZERVILLE, AND THOS. G. McLAUGHLIN, OF PHILADELPHIA,  
PENNSYLVANIA.

## LUBRICATING THROSTLE-SPINDLES.

Specification of Letters Patent No. 15,690, dated September 9, 1856.

*To all whom it may concern:*

Be it known that we, GEORGE W. DAUGHERTY, of Crozerville, Delaware county, State of Pennsylvania, and THOMAS G. McLAUGHLIN, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Mode of Lubricating Throstle-Spindles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Our invention consists in so arranging the caps of throstle spindles, that on the said caps being removed, inverted, and again adjusted to the said spindles (a process generally termed doffing) the spindles become lubricated, thereby avoiding the necessity of repeatedly stopping and starting the machine, as usual for effecting the same purpose, and also effecting a saving in the consumption of oil.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification, Figure 1, is a sectional elevation of the cap of a throstle spindle, showing our improved mode of lubricating the latter. Fig. 2, is a sectional plan on the line 1—2 (Fig. 1). Fig. 3, is a sectional elevation of a portion of the cap.

The same letters of reference allude to similar parts throughout the several views.

The cap A with the exception of the portions C and C', which inclose the top of the spindle B, is similar to that of the caps used on Danforth's throstle frame. In the portion C of the cap, into which the upper end of the spindle B is fitted, there is an oil chamber *a* which is capable of holding sufficient oil to lubricate the spindle for about seven days, the intention being to fill the said chamber once per week.

The upper or detachable portion C' of the cap is attached to the portion C by means of a screw as shown in the drawing, or in any convenient manner by which an oil tight joint is insured at the junction.

In the upper portion C' of the cap is a chamber G for receiving the valve H, which rests on the top of the spindle B, when the cap is properly adjusted to the same, the valve being thereby raised from its seat.

In the upper portion C' of the cap are orifices *f*, which form a communication between the oil chamber *a* and the valve chamber G. The spiral spring *g* serves to press the valve H down to its seat when the cap is removed from the spindle (see Fig. 3), in which case the latter is either totally or partially inverted thereby allowing a portion of the oil in the reservoir *a* to pass through the orifices *f* into the chamber G immediately above the closed valve H. On again adjusting the cap to the spindle the valve H is necessarily raised from its seat and the oil contained in the chamber G comes in contact with the top of the spindle and runs down the groove *h* formed in the same thus causing an effectual lubrication, by the necessary act of removing and replacing the cap or what is technically termed doffing, and without having recourse to the tedious operation of stopping and starting the machine every time the lubrication of the spindles is required. In addition to the above there is a great saving in the consumption of oil inasmuch as the reservoir G can be so constructed in regard to capacity as to contain the exact amount of oil necessary to lubricate the spindle during the interval which takes place between the times of doffing, thereby reducing the amount of oil consumed to about one third of that required by the usual process.

What we claim and desire to secure by Letters Patent, is—

The lubrication of throstle spindles in the manner and for the purpose substantially as herein set forth.

GEORGE W. DAUGHERTY.  
THOMAS G. McLAUGHLIN.

Witnesses:

HENRY HOWSON,  
WILLIAM E. WALTON.