J. Cooper,

Journal Lubricator.

No. 26,340. Patented Dec. 6, 1859.

Fig. 2.

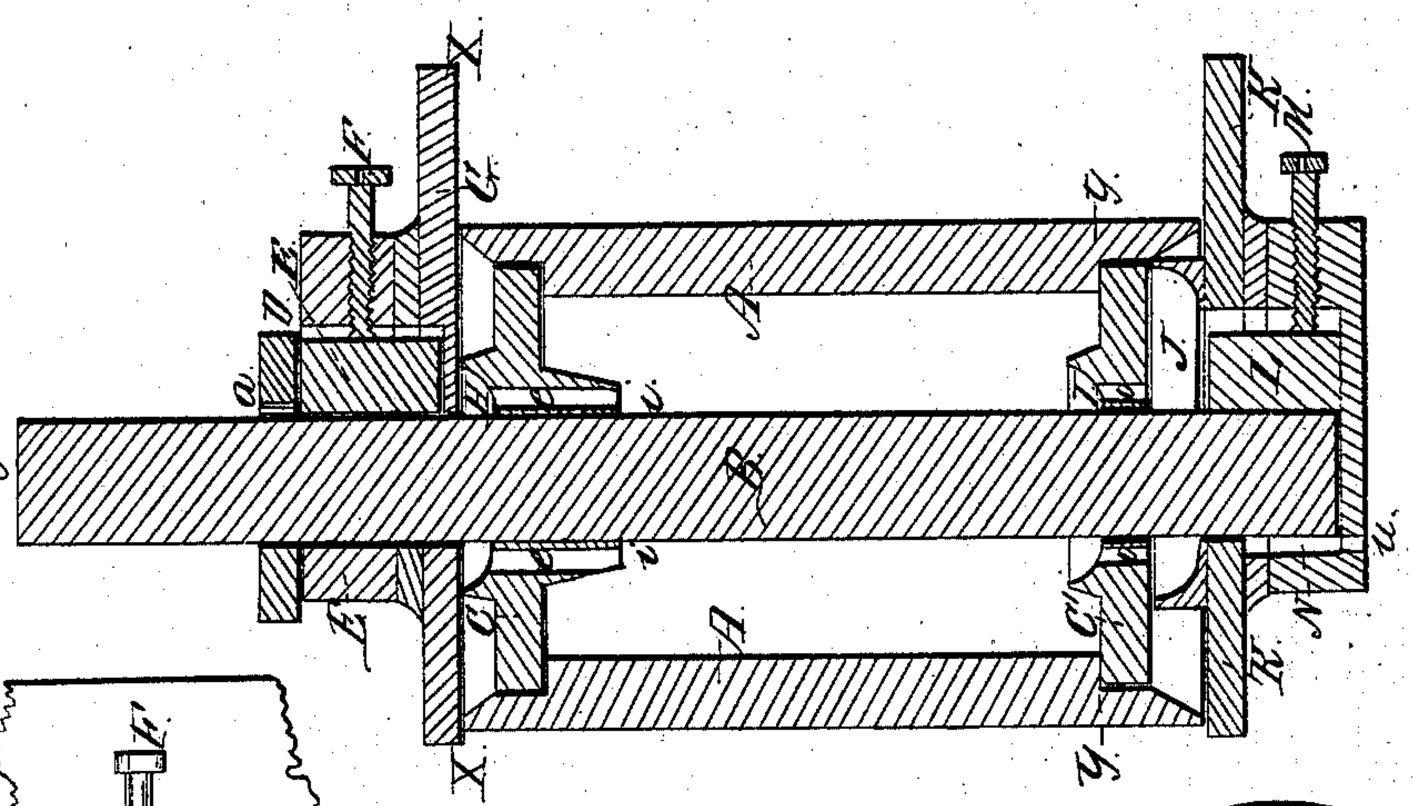


Fig. 3.

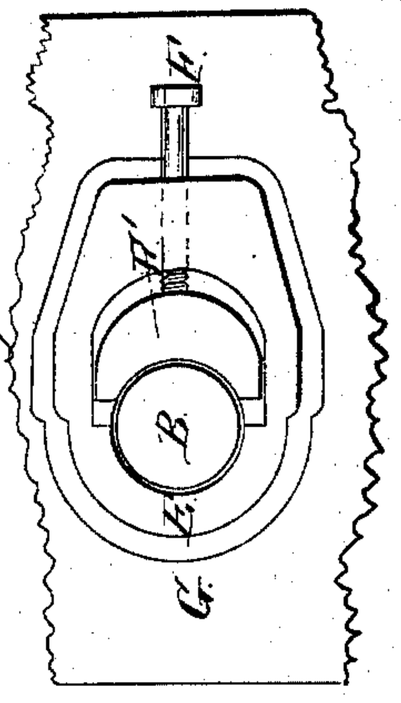


Fig. 4.

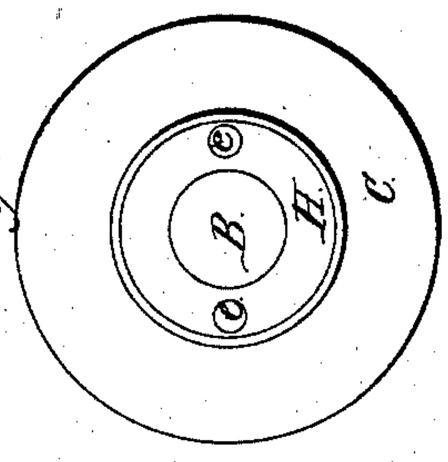


Fig. 5.

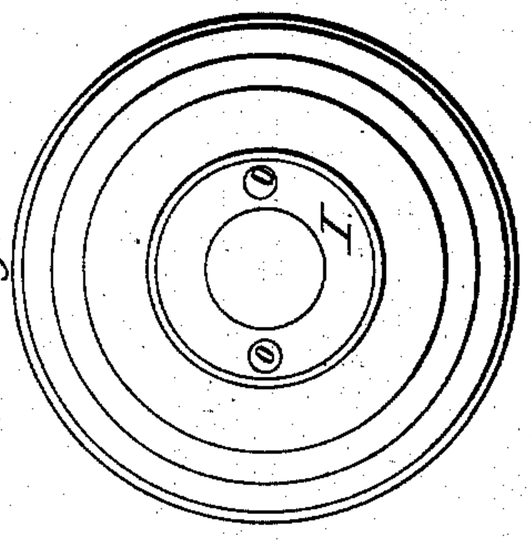
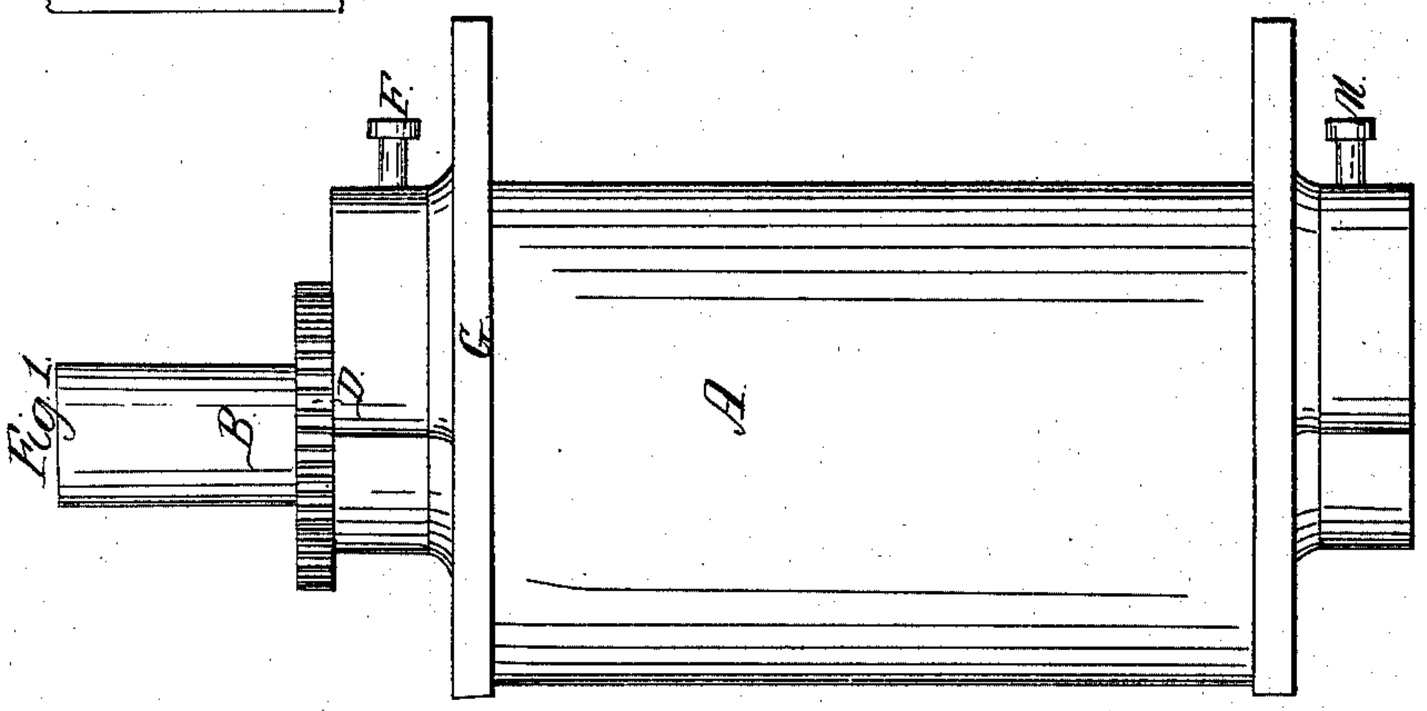


Fig. 1.



Witnesses:
A. E. Davidson
S Davidson

Inventor
John Cooper

UNITED STATES PATENT OFFICE.

JOHN COOPER, OF MOUNT VERNON, OHIO.

OILING BOXES OF VERTICAL SUGAR-MILLS.

Specification of Letters Patent No. 26,340, dated December 6, 1859.

To all whom it may concern:

Be it known that I, JOHN COOPER, of Mount Vernon, in the county of Knox and State of Ohio, have invented new and useful Improvements in the Mode of Oiling the Boxes of Vertical Sugar-Mill Rollers; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is an elevation of one roller and boxes, Fig. 2 is a vertical section of the same, Fig. 3, is a top view of the upper box, Fig. 4 is a top view of the upper head of the roller, upon the line X X in Fig. 2, and Fig. 5, is a cross section in the line Y Y in Fig. 2.

Sorghum, and other sugar mills, are usually constructed with vertical cylinders, such being much preferred to those that are horizontal, for obvious reasons, the chief of which, are, cheapness of construction, and their ready adaptation to horse or mule power. But a great difficulty has hitherto been experienced in keeping the journals properly lubricated with oil, without the waste oil becoming mixed with the juice of the cane, and thus injuring the flavor of the syrup.

The nature of my invention relates, therefore, to the construction and arrangement of devices, by which this difficulty is entirely obviated. In setting forth the nature of my invention, I have represented but one roller, there being three generally used, but this one fully illustrates my invention.

A, represents the body of the roller, and B the shaft that passes through the center.

In Fig. 2, C C′ represent the heads of the cylinders or rollers. These may be separate, or cast solid with the cylinder.

D in Figs. 1 and 2, represents the gear, which lies above the upper set of boxes. The oil hole, into which the oil is poured, is seen at *a* in Fig. 2.

E, E′, represent the upper boxes, E′ being adjustable by means of the set screw F.

Below the upper plate G which forms a part of the frame work of the mill, and to which the upper boxes are attached, is placed the circular cup H. This cup is cast upon and forms a part of the head C. This cup encompasses the shaft B, being concentric therewith, as seen in Fig. 4, consequently, all the oil that passes down the shaft from the boxes E E′ is collected in this cup H. In the bottom of this cup, are two holes *e*, through which the oil finds its way to the lip *i*. From this, the oil falls into the concentric cup I which is cast upon, and forms a part of the lower head of the roller or cylinder A, as seen at C′. The circumference of this cup, being greater than the lip *i*, of the cup H, it follows, that all the oil that drips from *i*, must fall into the lower cup I. This cup is also furnished with two holes *o*, *o*, for the passage of the oil to the boxes below them, but it is first collected in an elongated cup J which also encircles the shaft B, but is stationary, being cast upon, and forming a part of the bed plate K. L represents the lower box. This is also adjustable by means of the set screw M. Upon the side of the shaft opposite this box, is a chamber N, in which is placed waste cotton or other fibrous substance in contact with the journal, for the purpose of retaining the oil, which would otherwise immediately escape through the hole *u*, which is designed for the exit of the worn out and spent oil.

It will be understood, that in sugar mills, the pressure upon the rollers or cylinders is always outward, consequently, the boxes E′ and L have to sustain the principal pressure, and need adjustment, to keep the face of the rollers in sufficiently close contact, therefore, the packing in the chamber N, serves to keep up a constant lubrication of the box L. It will also be understood that each roller has a gear wheel as seen at D, and that motion is communicated from that one to which the power is applied, to the others respectively, by means of such gear wheels.

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

1. The concentric cups H and I upon the upper sides of the heads C C′, the same being furnished with the openings *e*, and *o*, for the conveyance of the oil from the upper box to the stationary cup J, which surrounds the shaft upon the lower bed plate K.

2. In combination with the cups J, substantially as described for the purpose herein set forth.

JOHN COOPER.

Witnesses:
ISRAEL MURPHY,
D. C. LEWIS.