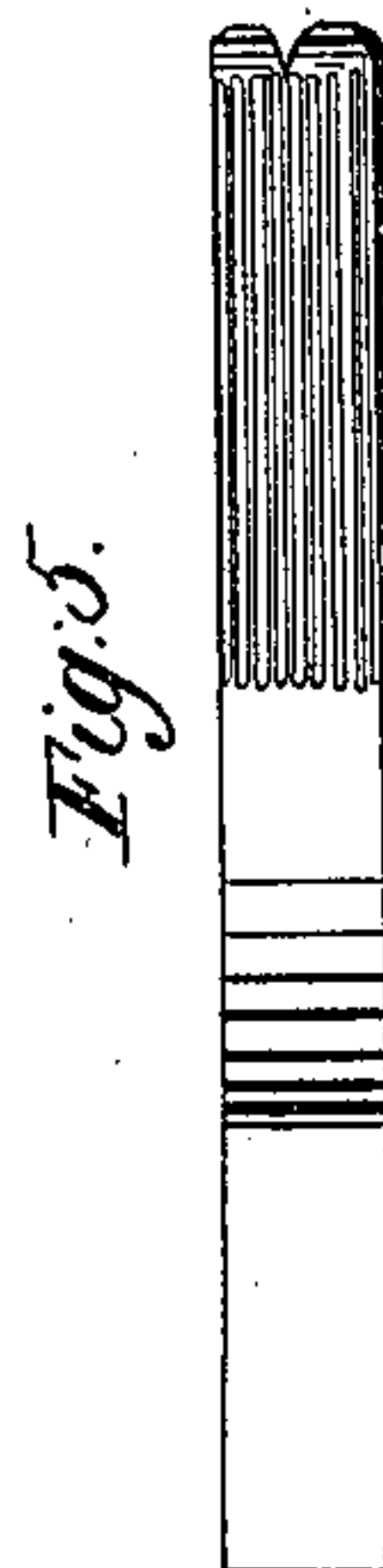
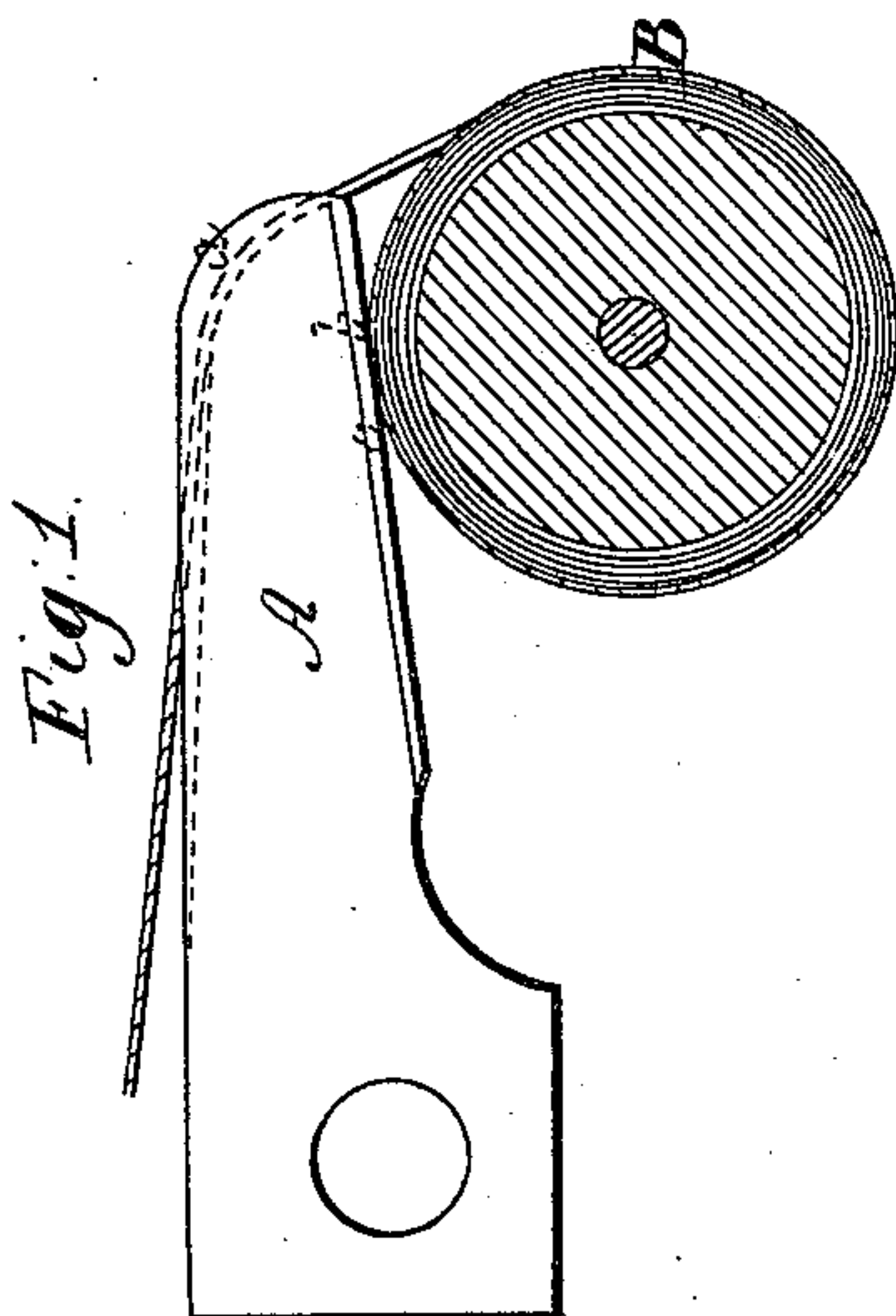
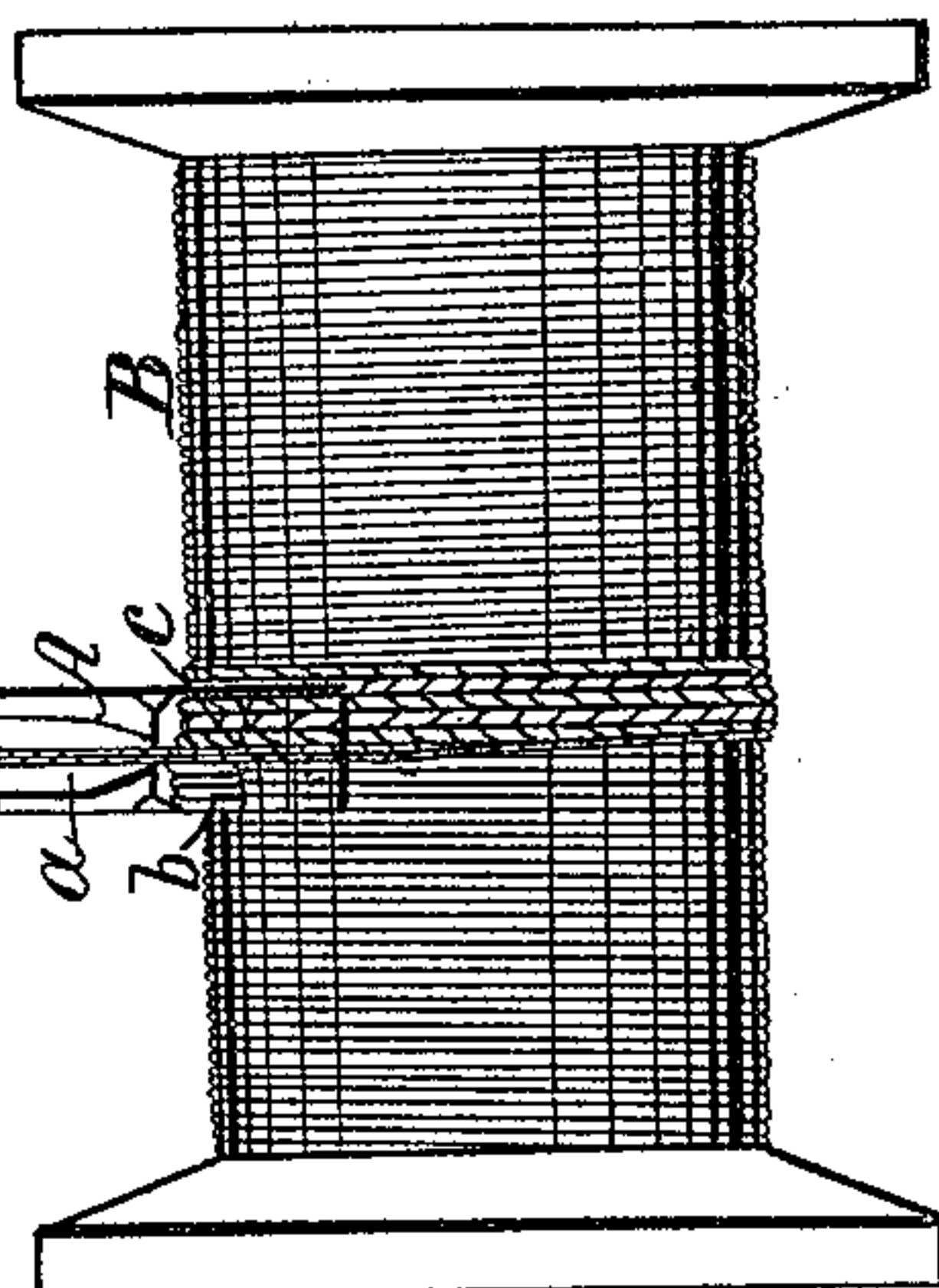


*L. Dimmock.*  
*Cutting Grooves in Guides of*  
*Thread Winding Machs.*  
*N<sup>o</sup> 25,181.      Patented Aug. 23, 1859.*



Witnesses;  
*Lucius J. Henshaw*  
*David N. Jones*

Inventor;  
*Lucius Dimmock*



# UNITED STATES PATENT OFFICE.

LUCIUS DIMOCK, OF HEBRON, CONNECTICUT.

## MACHINE FOR WINDING THREAD.

Specification of Letters Patent No. 25,181, dated August 23, 1859.

*To all whom it may concern:*

Be it known that I, LUCIUS DIMOCK, of Hebron, in the county of Tolland and State of Connecticut, have invented a new and  
5 Improved Method of Forming the Grooves in the Guides of Machines for Winding Sewing Cotton or Silk or other Thread on Spools; and I do hereby declare that the following is a full, clear, and exact descrip-  
10 tion of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a side view of a guide with my improvement, showing its application  
15 in combination with a spool on which the thread is being wound. Fig. 2 is a front view of the same. Fig. 3 is a transverse section of the guide. Fig. 4, is a face view of the same. Fig. 5, is a face view of a  
20 guide of the old kind, showing its single series of parallel grooves.

Similar letters of reference indicate corresponding parts in the several figures.

In the ordinary method of winding thread  
25 on spools it is laid spirally from end to end of the spool in opposite directions alternately by means of traveling guides. The guides ordinarily used to direct the thread on to the spools have cut in their faces by  
30 means of revolving burs, a single series of grooves for the purpose of spreading the thread evenly on the spools; but such grooves are always parallel with the planes of revolution of the spools, and consequently  
35 they operate in an imperfect manner. My invention consists in a method of cutting the grooves, by which I substitute for the single series of parallel grooves in each guide, two separate and distinct series of grooves ar-  
40 ranged obliquely in opposite directions to the planes of revolution of the spools; the direction of one series corresponding with the direction which the thread has in one of its spiral layers, and the direction of the  
45 other series corresponding with the direction which the thread has in the next layer, and the two series being so arranged that neither interferes with the other's operation.

To enable others skilled in the art to fully  
50 understand and use my invention, I will proceed to describe the manner in which it is to be performed.

My said invention is applicable to wind-

ing machines of any of the known forms; and the guides A are, with the exception of 55 the grooves in their faces of the usual construction; and on their being first placed in the machine they have their faces which bear upon the spools perfectly smooth, and only the usual deep central grooves *d*, in 60 their ends and upper surfaces for the purpose of guiding the thread on to the spools. The gearing from which the guide carrier derives its motion should be carefully pro- 65 portioned to make the movement of the guide correspond accurately with the thickness of the thread to be wound. The machine with the guides so applied being in running condition, I place a spool on the winding spindle opposite to each guide, and 70 set the machine in operation to wind on to the spool a quantity of thread which has been previously coated or saturated with a mixture of fine emery and oil or some glutinous liquid or which has been saturated 75 with oil or some other liquid and run through dry flower of emery, or which on or before its arrival at the spool is in some other suitable manner covered with emery or some other cutting powder. The winding 80 of one spool full of thread in this way will cause the two series of grooves *b* and *c*, shown in Fig. 4, to be cut, by the coating of emery or other cutting material on the thread; one series of grooves fitting exactly 85 to the thread wound during the movement of the guide in one direction from end to end of the spool, and the other series fitting exactly to the thread wound during the 90 movement of the guide in the opposite direction. These grooves being cut by the thread in the winding operation cannot fail to fit exactly the coils of thread of the same size wound by subsequent operations of the machine performed under the same conditions 9 in which the grooves were cut; and hence such grooves cannot fail to spread the thread more evenly than those cut by burs, The grooves cut by my method are also much smoother than those cut by burs, and 1 this peculiarity alone would make them work much easier.

It may be remarked on reference to Fig. 4, that the series of grooves *b*, is in advance of the series *c*. This is owing to the lateral 1 movement that is given to the guide-carrier

to reverse the direction of the movement of the guide as the latter arrives at either end of the spool.

What I claim as my invention and desire  
5 to secure by Letters Patent, is:

The arrangement and combination with the guide A, of two separate and distinct

series of grooves (*b*, *c*) having their channels cut on opposite angles, as and for the purpose herein shown and described.

LUCIUS DIMOCK.

Witnesses:

LUCIUS J. HENAU,  
DAVID N. JONES.