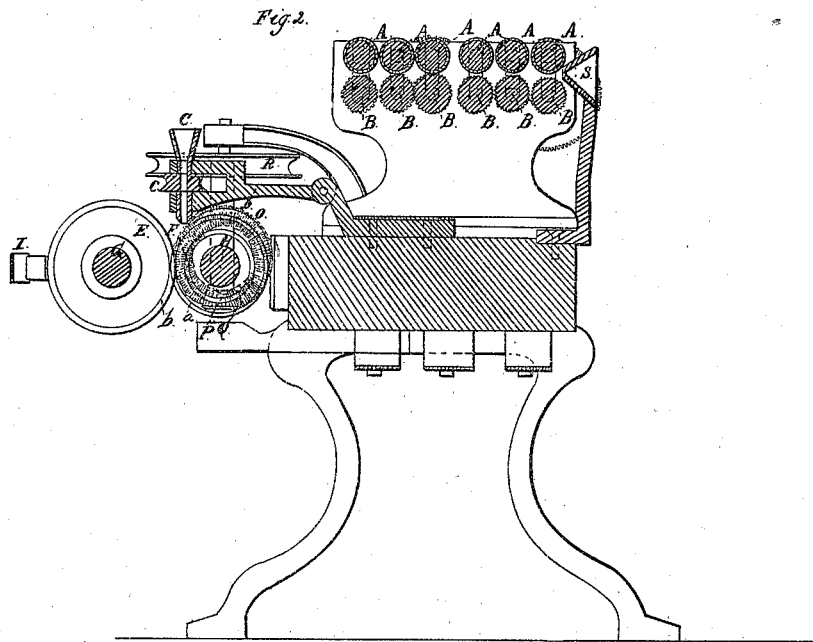
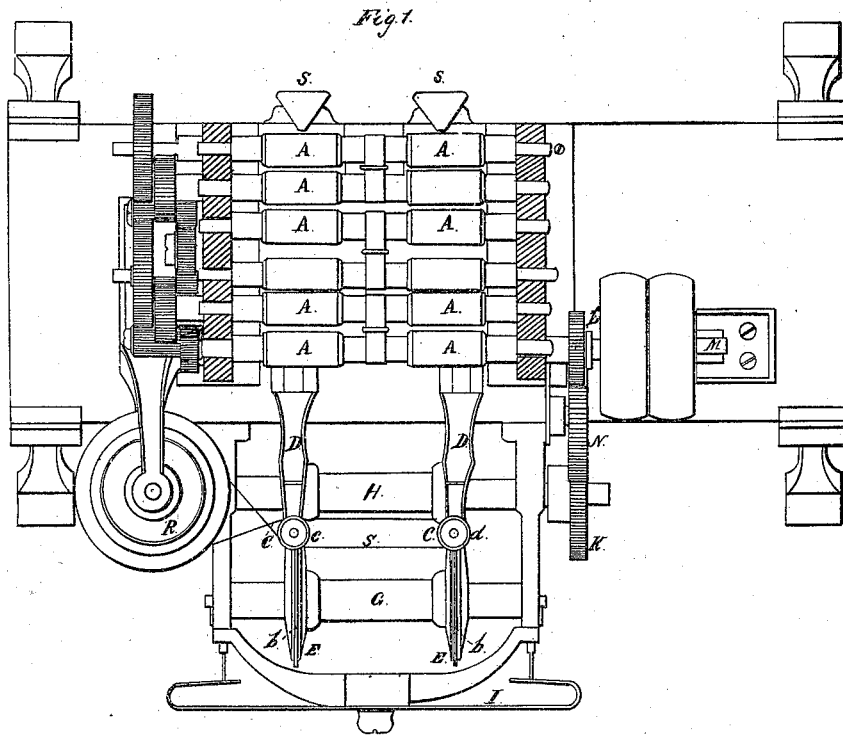


J. Graves.
Spinning Mach.

N^o 3,250.

Patented Sept. 1, 1843.



UNITED STATES PATENT OFFICE.

JACOB GRAVES, OF NEW IPSWICH, NEW HAMPSHIRE.

MACHINE FOR CONDENSING OR PREPARING COTTON ROVINGS, &c., FOR SPINNING.

Specification of Letters Patent No. 3,250, dated September 1, 1843.

To all whom it may concern:

Be it known that I, JACOB GRAVES, of New Ipswich, in the county of Hillsborough and State of New Hampshire, have invented a certain new and useful Mechanism for or Method of Preparing Cotton for Spinning, and that the following description, taken in connection with the accompanying drawings, constitutes a full and exact specification of the same.

Figure 1, of the drawings above mentioned, represents a top view of my improved mechanism for effecting the preparation of cotton, and Fig. 2 is a vertical section thereof.

A, A, A, &c., B, B, B, &c., Figs. 1, and 2, are a series of drawing rollers arranged and operated in the usual manner; two of the said series being represented in Fig. 1.

There may be any number of them according to circumstances. In front of each range of draw rollers, or series of the same, a vertical rounding or guiding tube or funnel C is suitably supported upon the extremity of an arm D; or the said tube revolves in proper bearings in the end of the arm. Beneath each of the guiding tubes are the condensing rollers E, F arranged upon horizontal shafts G, H. The periphery of one of these condensing rollers has a groove *a* formed in and entirely around it, while that of the other has a tongue *b* upon and around it, which corresponds to the groove of the first. The one roller is disposed in front of the other, and so that the tongue of one roller shall enter the groove of the other and the front or tongue roller is pressed against the other by means of a spring I acting upon the shaft of the front roller.

The shaft H is revolved by a small spur gear K upon one end of it, which through the intervention of a spur gear N, engages with a pinion L on the driving shaft M of the draw rollers. A beveled gear O (represented in Fig. 2 by dotted lines) upon the opposite end of the shaft H engages with a beveled pinion P upon, and gives motion to, a vertical shaft Q, which has a grooved pulley R upon it, around which (pulley) a belt or band S passes to and about pulleys *c*, *d* of funnel or twisting or rounding tubes C, C and thereby gives to the said tubes a revolving motion.

The apparatus, thus arranged, is set up directly against the doffer end of a carding engine whose doffer or doffers are con-

structed so as to remove the fleece from the main cylinder in suitable strips or slivers, each of which is conducted to its series of draw rollers through or by means of a conical or trumpet mouth S. The sliver, after its passage through the draw rollers, where it is drawn down to the requisite degree, is received into the guiding or rounding tube C, which, revolving at the proper speed, converts it into a round or cylindrical roving which, passing therefrom between the grooved and tongued peripheries of the rollers E, F, is condensed by the said rollers and is finally received and coiled into a can placed beneath them. This can, after being properly filled, is taken to the spinning frame and the roving thus formed is then converted into twist, directly from the said can.

Many attempts have been made by others to spin from the can, but a failure has invariably ensued from want of strength in the roving; but the combination of the grooved and tongued condensing rollers with the drawing and rounding rollers completely overcomes the hitherto insurmountable difficulties, and gives a consistency to the roving almost equal to that which would be imparted to it by the double speeder, and wholly sufficient for all practical purposes. By the above improved mechanism we are enabled to dispense with the ordinary drawing frame speeders and stretchers, besides, more work is put to the spinning frame at one time, thus saving labor in changing bobbins. Less strain is required to draw from the can than from bobbins, and consequently there is less liability of the roving to stretch and become uneven. The simplicity and cheapness of construction of the mechanism together with the quantity of other machinery which is superseded by it, render it of the greatest utility to those interested in the manufacture of cotton.

Having thus explained my invention I shall claim—

The particular method, above set forth, of preparing the cotton for spinning, viz, subjecting the same, as it proceeds from the carding engine to the action of a series of drawing rollers, rounding or guiding tubes and grooved and tongued condensing rollers, in combination with each other and the carding machine, the said cotton being thus formed into roving and received into a can from which it is converted into twist by the

spinning machinery; or in other words, I claim the combination of the series of drawing rollers the twisting or rounding tubes and the grooved and tongued condensing rollers, the whole being arranged and operating substantially as herein above specified.

In testimony that the above is a correct specification of my invention I have hereto

set my signature this twenty seventh (27th) day of July in the year of our Lord eighteen hundred and forty three.

JACOB GRAVES.

Witnesses:

SALMON STEVENS,

ORLANDO MARSHALL.