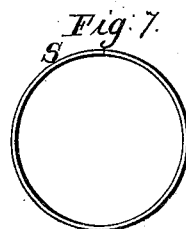
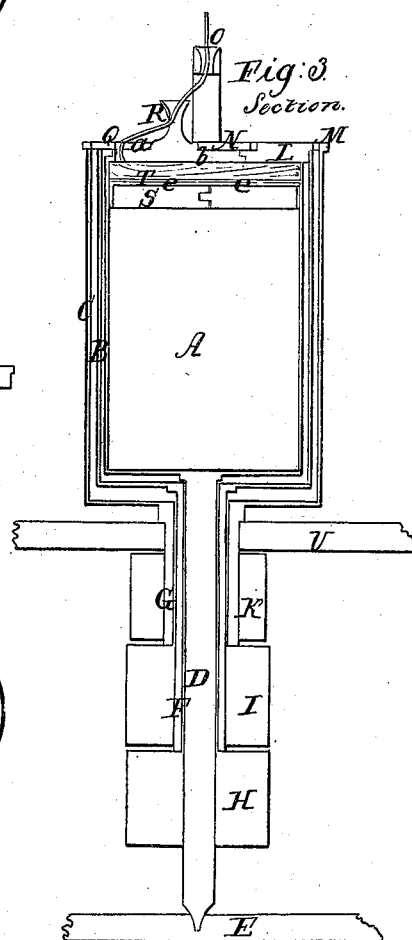
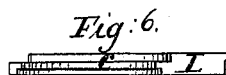
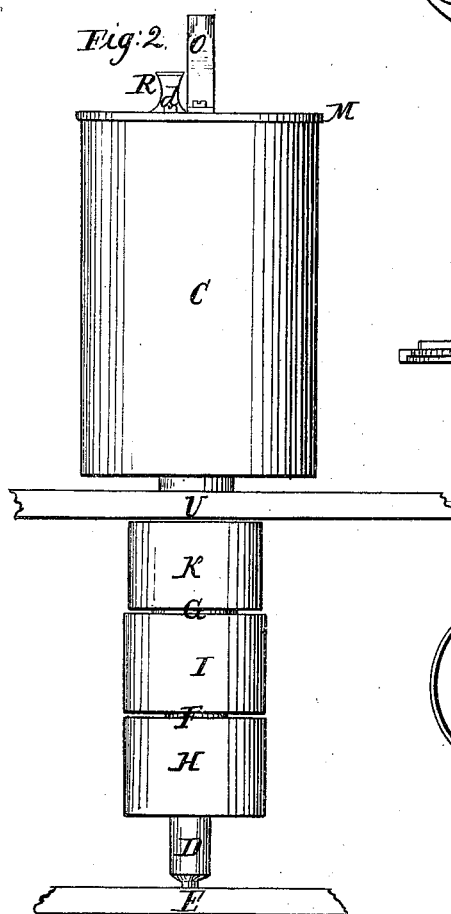
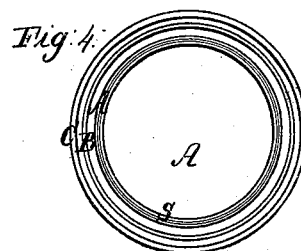
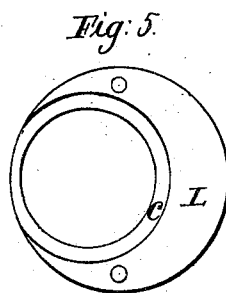
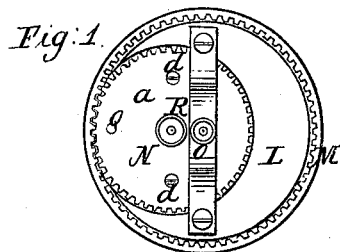


J. W. Strange. Carding Mach.

N^o 5,337.

Patented Oct. 23, 1847.



UNITED STATES PATENT OFFICE.

JOSEPH W. STRANGE, OF TAUNTON, MASSACHUSETTS.

MACHINERY FOR LAYING ROVING IN CANS, &c.

Specification of Letters Patent No. 5,337, dated October 23, 1847.

To all whom it may concern:

Be it known that I, JOSEPH W. STRANGE, of Taunton, in the county of Bristol and State of Massachusetts, have invented a certain new and useful Improvement in Machinery for Laying Rovings in Cans, the same being an improvement on mechanism for which on November 18, A. D. 1845, Letters Patent No. 4,277 were granted by the Commissioner of Patents of the United States of America to John Tatham and David Cheetham, of Rochdale, England; and I do hereby declare that the said invention is fully described in the following specification and accompanying drawings, letters, figures, and references thereof.

The nature of my improvements consists, first, in the combination with the coiling apparatus of a mechanism by which the said coiling apparatus may be revolved, so as to put any required degree of twist in the roving, before it (the roving) is introduced into the can; second, in the manner in which I have combined and arranged together three cans or hollow cylinders and certain appendages thereto, by which I am enabled to introduce the roving into the interior of said cans, and pack it therein in eccentric helices; third, in the manner in which I have combined and arranged three cans or hollow cylinders and certain appendages thereto, by which I am enabled not only to introduce a sliver or roving into one of them and pack it therein, in eccentric helices, but at the same time put any required degree of twist in said roving.

Of the said drawings, Figure 1 denotes a top view of my improved mechanism, Fig. 2 is a side elevation of it, Fig. 3 is a vertical and central section of it, Fig. 4 is a horizontal section taken through the spring which sustains the circular plate on which the roving is compressed, as will be hereafter described.

A, B, C, in the aforesaid figures, exhibit three cylindrical cans, arranged so together that the can A shall be placed concentrically within the can B, while the can B, is similarly arranged within the can C. The can A is mounted upon a vertical shaft or spindle D, which rests and turns at its foot upon a bearing E. The spindle D works through a hollow or tubular shaft F, which is affixed to the can B, and this latter shaft passes through in a similar manner another hollow shaft G, which extends from the outside can

C. A driving pulley H, is fixed upon the shaft D and immediately below the shaft F. Above this pulley there is another, viz., I, which is secured upon the shaft F. There is also a third pulley K placed and affixed upon the shaft G and with respect to the others as seen in the drawings. The said pulleys are to be driven by bands in such manner as to rotate the cans in the directions and with the speed required.

A cover or circular plate L is secured in the top part of the middle can B, and by what is termed a bayonet catch, or such other contrivance as will not only admit of its ready removal from the can at any time whenever necessary, but will fasten it to the can in such manner as to cause it to be revolved with and by the can when it is put in revolution.

An endless rack or row M of cogs or teeth is disposed or fixed upon the inner edge of the top part of the outer can C, and engages with a toothed pinion N, supported upon and so as to revolve within the plate L. The said pinion is made of two circular plates *a*, *b*, upon the circumference of the upper of which, the cogs or teeth are made, as seen in the drawings. The said upper plate is placed and supported in a circular recess *c*, cut or made in the top of the plate L, as seen in Figs. 5 and 6, the former of which denotes a top view and the latter a vertical section of the plate L as detached from the can B and wheel N. The lower plate *b* has a shape in cross section as seen in the drawings, and it is made to fit into that part of the plate L which is below the recess *c*, the said plate L being cut out where it receives the plate *b*, of a shape to correspond with the plate in contact with it. The two plates *a*, *b* are to be secured together by one or more screws *d*, *d*.

The wheel N should be made to extend through the plate L, and be confined to it, so as to readily revolve within it, and it will so revolve whenever the can B is revolved or turned around within the can C, or the can C is revolved about the can B. A trumpet guide O, of the shape seen in the drawings, is screwed or fastened to the top of the plate L, and so that the common axis of the cans may pass through its central part. This trumpet O, receives the roving as it passes from the carding machine.

A hole or passage Q is bored vertically through the pinion N, and near the said pas-

sage is another or smaller trumpet guide R fixed to the wheel. The roving to be laid in the can is passed directly from the carding machine through the trumpet *o*, thence
5 through and out of the said guide in a lateral direction, and thence downward through the passage Q, and into the interior of the can A.

S, Fig. 7 denotes a strip of steel, bent
10 around in a circular shape or in such a manner as, when placed in the interior of the can A, as seen in Fig. 3 to constitute a spring which shall press against the interior surface of the can, and with force more
15 than sufficient to sustain itself and a circular plate T, placed upon it, and within the can, as seen in Fig. 3. Upon the top surface of the plate T one or more layers *e e* &c. of rough or thick cloth are placed, and glued
20 or otherwise properly fastened.

The plate T should be confined to one end of the curved spring S, in such manner as to be incapable of being revolved horizontally without moving or carrying the spring
25 around with it. As the end of the roving is brought into contact with the upper or rough surface of the cloth *e*, it will adhere thereto sufficiently, so as to cause the roving to pass into the machine, when the cans are
30 put in revolution.

The assemblage of cans should be supported in an upright position, and so as to be capable of being revolved by a bearing rail V, or other mechanical equivalent properly
35 applied to them or either of the shafts of the said cans. If we now suppose the outer can C to be held stationary, and the two inner cans A, B, to be put in revolution in opposite directions and at proper speeds
40 with regard to each other, we may lay or coil the roving within the can A, in eccentric helices, in substantially the same manner in which it is coiled in the can of the aforesaid patented apparatus of the afore-
45 said Tatham and Cheetham. Now, if we put the outer or whole assemblage of cans in revolution at proper speeds, we may not only draw and coil the roving into the can A, but we may put a twist into it before it
50 enters the can, by which it is greatly

strengthened and improved for the purpose of being spun into thread, as well as for being coiled in the machine.

In order to adapt the mechanism of the said Tatham and Cheetham, to twisting a
55 roving, it would be necessary to construct it so that the whole stand and operative parts might be revolved together on the axis of the can, as will be seen by inspection thereof.

One portion of my improvements consists
60 in so imparting to the whole apparatus such a rotary motion as shall be productive of such a twist in the roving as may be required.

By my mode of arranging, combining and
65 constructing the aforescribed improved mechanism, I render it much less complicated and expensive than that of Tatham and Cheetham.

Having thus described my improvements,
70 that which I claim is—

1. The combination with the coiling apparatus of such mechanism as will enable me to impart to the whole of it, such a rotary motion on the vertical axis of the can
75 into which the roving is laid or coiled, as may be necessary to produce a twist in the roving, as described.

2. I also claim, the herein before described manner in which I have combined three
80 cans or hollow cylinders (A, B, C,) and their appendages, (consisting of the cap plate L, toothed wheel N, endless rack M, applied to the outer can, together with the respective shafts and pulleys of the cans, or
85 any mechanical equivalents therefor) so as to operate together, and lay or twist and lay the roving in a can, as specified, meaning also to claim in its application to such a combination, the endless rack M, whether
90 made stationary or so as to rotate as above described, and whether applied to an outside can or other equivalent.

In testimony whereof, I have hereto set my signature, this twenty first day of May
95 A. D. 1846.

JOSEPH W. STRANGE.

Witnesses:

JAMES P. ELLIS,

GEO. M. WOODWARD.