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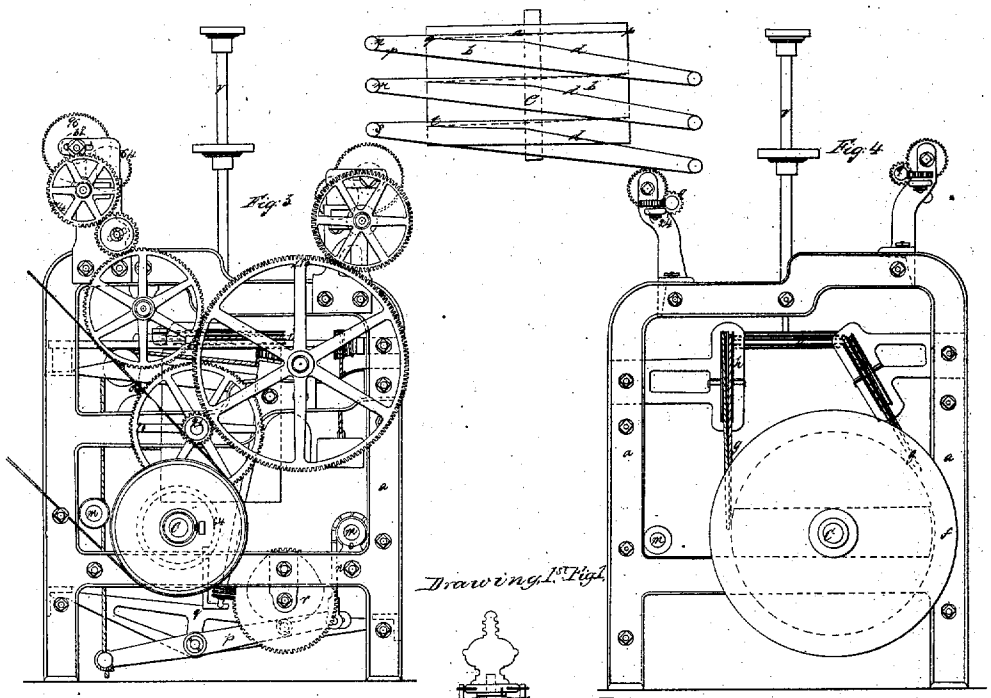
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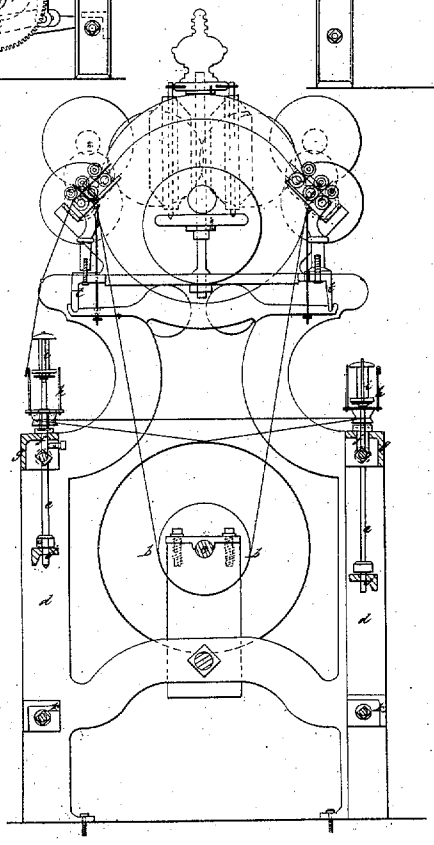
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W. P. Brayton,

Spinning Machine,

Drawing, 1st Fig. 2. Patented June 25, 1836





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Sheet 2-2 Sheets.

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Spinning Machine,

Drawing 2nd Patented June 25, 1836

Fig. 1.

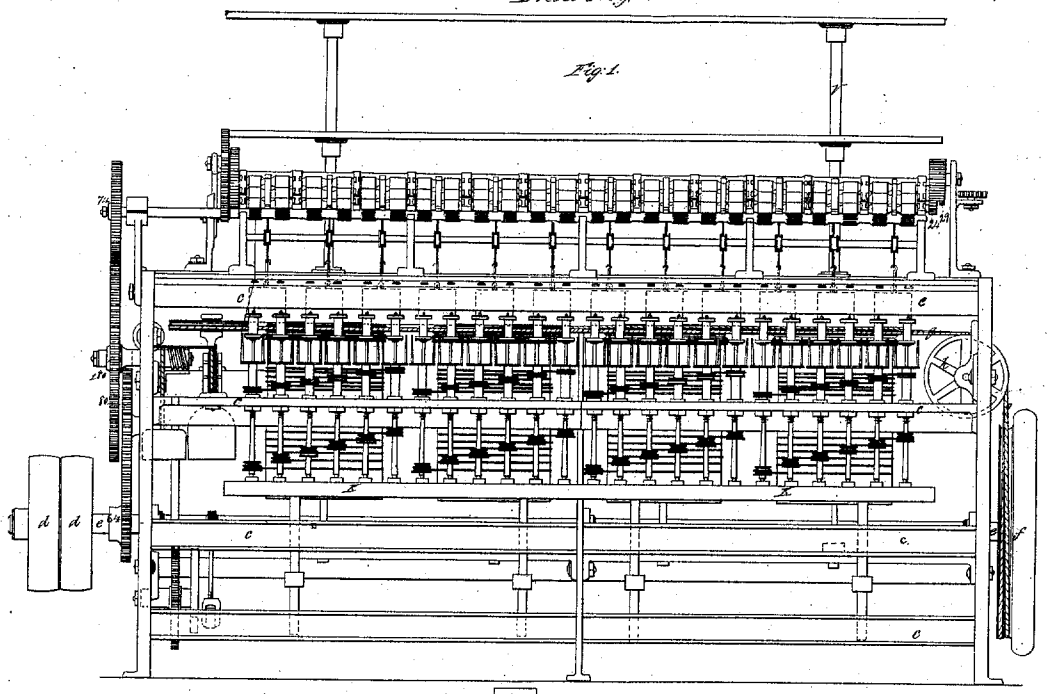
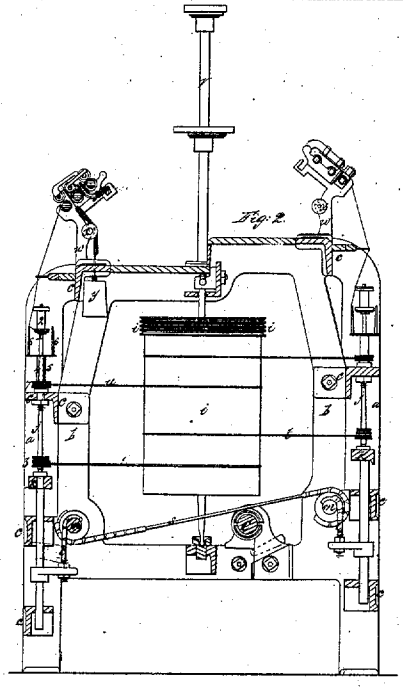


Fig. 2.



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William P. Brayton New York

Letters Patent.

The Schedule referred to in these Letters Patent, and making part of the same, containing a description in the words of the said Wm P. Brayton, of his "Improvement in the Machine for spinning and Doubling cotton"

To all to whom these presents shall come.
Be it known that I Wm P. Brayton of the City, County and State of New York Engineer, have invented a new and useful improvement in machinery for spinning and Doubling cotton silk and other fibrous materials or substances, and which are applicable to various useful purposes, and that the following is a full and exact description of the construction and operation of the said improvement reference being had to the drawings hereto annexed and making part of this specification. For the more clearly illustrating these improvements, I have herewith annexed several drawings exhibiting the complete Throstle frame in different positions, with the situation of the upright driving drums and of the bobbins and flyers, and the manner in which they are actuated; and also a new mode of dividing flyers and spindles with a line or horizontal cylinder where but one motion is required from the driving drum to the spindles or flyers in consequence of a peculiar way of constructing the Machine and of putting on the bands as will be shown in drawing first figures 1 and 6. Drawing 1st Fig 1 in this figure I show an end view of a Throstle frame for spinning with a line or horizontal cylinder for driving spindles and flyers. I show an end view

view of the spindles and reverse of the bands and also two spindles driven by the same which constitutes of spindles I claim as new and of my own invention.

A. A. is the Throttle frame b.b. the cylinder, C. the shaft of the cylinder, d is an endless band that drives two spindles e.e. are the spindles, f.f. are studs that give steadiness to them spindles, g.g. are stationary rails which the studs f.f. are screwed fast to, h.h. are flyers which are screwed onto the top of the spindles to give twist to the thread as it comes from the drawing rollers in the usual way. i.i. are the bobbins that receive the thread from the flyers, j.j. are the lifting rails which cause the bobbins to rise and fall for the distribution of the thread upon the bobbins K.K are stationary rails for holding the machine together and also receive the foot steps of the spindles. L.L. are also stationary rails for holding the machine together. Fig 2. In this figure I show a top view of the cylinder and the wheels of the spindles, and also a view of the bands as they will appear when running. some of the spindles are left unbanded that it may be the better seen how the bands appear on those that are banded.

The letters b.b. denoting the cylinder, C. the shaft, and d. an endless band as in Fig 1. M.M. are the two first spindles upon that end of the machine. In order to band spindle M. upon the right, I place a friction pulley N. on the left and carry the band round it and over the top of the drum at O. and down at P around the under side of the drum as shown in broke lines and up at Q and over the top of the drum again, and round the spindle at M. and then I carry it over the top of the drum again to the friction pulley and tied to the other end of the band at R. at the further end of the machine. I put the band round the whirl of the spindle at S. and over the top of the drum as I do round pulley under the bottom of the drum and up at S. and over the

the

the top of the drum again and around a friction pulley at 10 and back to 8 and tied. These friction Pulleys being placed the space of one spindle to the right or left for the purpose of binding the first or last spindle by. A big distance would perhaps answer, and the spindles might be so placed on the machine as to need no friction pulleys but this I conceive to be the best way. It will be perceived that in banding spindles 8 & 10 that they may one space from being directly opposite to each other, this is to prevent the bands from running together over the top of the drum drawing off a less than a full space of spindle might answer, but much depends on the width of the Machine and the distance the spindles are set apart. variations enough should be made so that the bands will not run together over the top of the drum. In this way Throttle frames may be made two feet wide and have cylinders in them fourteen or sixteen inches in diameter.

The top of the cylinder in a machine two feet wide should be set about one and a half inches below the wheels on the spindles. In drawing 2nd Figure 2 the spindle j is represented with a disc l upon it which fits fast upon the spindle and carries the bobbin 2.

This spindle is made to revolve by a band from the driving drum passed round the wheel 3. upon the spindle a tube k is affixed by its socket and screwed to the upper stationary rail c c. the upper part being bushed to give steadiness with little friction to the spindle which revolves within it and is caused to slide up and down by the movement of the capping rail.

On the outside of the tube k another tube b is fitted carrying the flyers b b and which last mentioned tube with the flyers are made to revolve by a band from the driving drum passed round the wheel 7 hence it-

it will be perceived that the bobbins and the flyers may be made to revolve by one driving drum at dissimilar speeds according to the different diameters of the whirls and in this instance the spindles should run so much faster than the flyers as to cause the bobbin to lead the flyer to take the yarn up and just keep the thread straight as it is delivered from the drawing rollers. By driving the flyers with a speed nearly equal to that of the spindles and bobbins the ring will be lumpered and yarn of very high numbers may be readily spun and wound upon the bobbins. Drawing 9th Fig 1 is a front elevation of the frame constructed on an improved plan with a series of bobbins and flyers driven by upright drums or cylinders. Fig 2 is a transverse section of the same shewing the manner in which the driving bands pass from the upright drums to the whirls of the spindles and flyers. Fig 3 is an elevation of the throstle frame taken at that end where the driving pulleys or riggers is affixed. Fig 4 is an elevation of the reverse end of the throstle frame shewing the bands and pulleys by which the upright drums are driven; the similar letters of reference pointing out the same parts in the four last mentioned figures. The end frames or standards of the throstle are shown at a. a. Fig 2. and b. b. is the middle frame c c, c c, c c, are the longitudinal stationary rails by which the end and middle frames are braced together and the principle parts of the machine supported d. d. Fig 1. are the fast and loose pulleys or riggers over which a strap is passed from the first moving power to drive the machinery. e is the main shaft or axel communicating motion to the working parts of the machine and f is a fly wheel and pulley affixed to the end of the main driving shaft round which pulley an endless band

bands g.g. passed over diagonal guide pulleys h.h. and round the grooves at the upper part of the upright drums b.b. for the purpose of giving a rotary motion to the driving drums. These drums b.b. turn upon vertical axels bearing in t.t. and passed round the respective whirls of the spindles j.j. and round the drums b.b. and similar bands w.w. are passed round the respective whirls of the flyers and also round the drums by which means when the drums are set in motion, and made to revolve by the means before described. The spindles and flyers will be driven and as the spindles ascend and descend their driving bands move up and down upon the periphery of the driving drums, always presenting the same altitude as the whirls and thereby keeping the bands at all times at the same strain or tension. One side of the machine is made higher than the other in order that the bands of the spindles upon one side of the machine shall all pass round the drums above the bands of the spindles upon the other side of the machine and not interfere with each other and the same is to be observed in respect to the bands which carry the flyers as shown in Fig 2 which constitutes a part of this invention.

The bottom or other materials to be spun to be placed on the top of the machine in the usual manner, and b.b. are drums to support them. W.W. in Fig 2 are drawing rollers stands which being so constructed as to allow a rack to be placed longitudinally in the back side of the stand at x.x. in order that the weight that causes the top drawing rollers to press upon the bottom ones may put equal to the center of the bottom drawing rollers and that the rollers may be elevated or turned up so as to allow the twist of the thread or yarn to run up immediately into the jaws of the rollers, that the article

to

to the spun may receive the twist as soon as the drawing rollers leave it, which is found to be extremely necessary when spindles are run at very high speed and more particularly in the spinning of fine yarns. The wire thus is attached to the weight Y. Fig 2 and the wire in which it slips and longitudinal rail or rod rails may be substituted and supported at each end by the bottom longitudinal stationary rails and in this case the drums may be driven by mitre or bevil wheels, for which slower motions for spinning movings in the shaft or bobbin & fig frames for which this principle of driving is also claimed Bevil bearing would perhaps be most suitable, and the spindles or shafts of the drums are confined in collars, in a longitudinal rail at the top as shown in Fig 2 the spindles f f are arranged in rows on each side of the frame supported in rests at the bottom by the bossing rail K.K. and caped through tubes and sockets in the upper stationary longitudinal rail c.c. The bobbin being upon a rise mounted upon the upper part of the spindle and turning therewith. The flyers are attached to a tube as before described with a wheel affixed to the flyer tube. The bossing rails K.K. supporting the spindles are made to rise & fall for the purpose of winding the yarn in uniform coils upon the bobbins by the ordinary contrivances, that is to say by connecting these rails to pendant chains b.b. attached to longitudinal shafts M.M. which reach the whole length of the Machine. Another chain H. Fig 3 is attached to a pulley O on shaft M and made fast at the lower end to the lever P which lever is mounted on a fixed centre a transverse carrier rail Q and is made to vibrate by the rotation of the heart wheel R a counterpoise and balance weight being attached to the lower end of the lever. These two lifting rods M.M. Fig 3 are connected

by

by rolling transversely, as shown in Fig 8, and the spindles are lifted upon both sides of the Machine at the same time, with the same power that would be required to lift one side providing the weight attached to the lever are sufficiently heavy. In order to raise the spindles and flyers bands attached to the saddle of the top drawing rollers are connected by a cord or string and bearing over the rods or a small pully upon the bar Z Z are guide wires between the back and middle drawing rollers attached to the traversing rod for the purpose of keeping double bearings together and never except them to break, which is a great convenience in spinning fine yarns both in the Throstle and the mule. These guide wires and the above mentioned bar we also constitute a part of this invention. This Throstle is peculiarly adapted to the spinning of fine yarns. By running the spindles to carry the bobbins, the drag is taken off of the thread as it comes from the flyer which puts it in the twist and very high numbers may be spun the spindle running within the bobbin, and the disc which the bobbin rests upon being fast to the spindle and revolving therewith a close surface is produced under the bottom of the bobbin and also inside of the bobbin, so that the drag upon the thread may be accurately timed so that a grain of wire hundred hanks to the pound may be readily spun.

By placing the whirls of the spindles and the flyers which constitute a set to be run upon one side of a drum at different heights the bands will run clear of each other as shown in Fig 6. In drawing 1st I am enabled to put a 10 or 12 inch cylinder into a Throstle frame that is only two feet wide, whereas Throstle frames are now made four feet wide, to receive a cylinder only seven inches

inches in diameter, which cylinder must sometimes run as fast as mine to give the same speed to the spindles and at the same time is not able to stand as high speed as a larger cylinder, and by having a small cylinder, the whirls on the spindles are often times made small in order to get the necessary speed, which is very destructive to the spindles by being obliged to have the bands much tighter, by having a large cylinder, I am enabled to have the whirls on the spindles larger and consequently am enabled to run spindles with a slacker band, and again by putting the band all around the cylinder, it gives the cylinder more power upon the band and the band will be able to be slacker on that account and the slacker the band is run the better it will last, and the longer the spindles will last, and again the bands in this way have a straight run on one side of the whirls of the spindles and upon the other side, have an angle of only an inch and a half to the foot.

What I claim as my invention is the method of banding and driving the spindles substantially as is described in the above specification and referred to in drawing 1st Fig 1st & thereby having one half of the cylinder the width of the throstle frame, and being enabled to use a large cylinder instead of a small one which is in all cases desirable; I also claim the spindle substantially as described above and referred to in Fig 1st drawing 1st. I also claim the peculiar construction of the parts of a throstle frame for spinning and doubling substantially as is described above and referred to in drawing 2nd.

I also claim the adaptation of upright drums or cylinders for driving the spindles and the flyers by distinct bands in a throstle frame substantially as

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as is above described and also the peculiar mode of mounting and drawing the bobbins and the flyers in a Thistle forme for the purpose of causing them to revolve with distinct and dissimelar speeds substantially as is described above. And I also claim the stand W W and the guide wires Z Z substantially as is above described.

Witnesses
A. J. Hamilton
John Johnson

Wm. P. Brayton

Boyd. Fig. 6

31.17 w-d

(Patented 25 June 1836)