Sheet 1. 2 Sheets.

J. Mason.

Carding Mach.

No. 2,947. Patented Feb. 10, 1843.

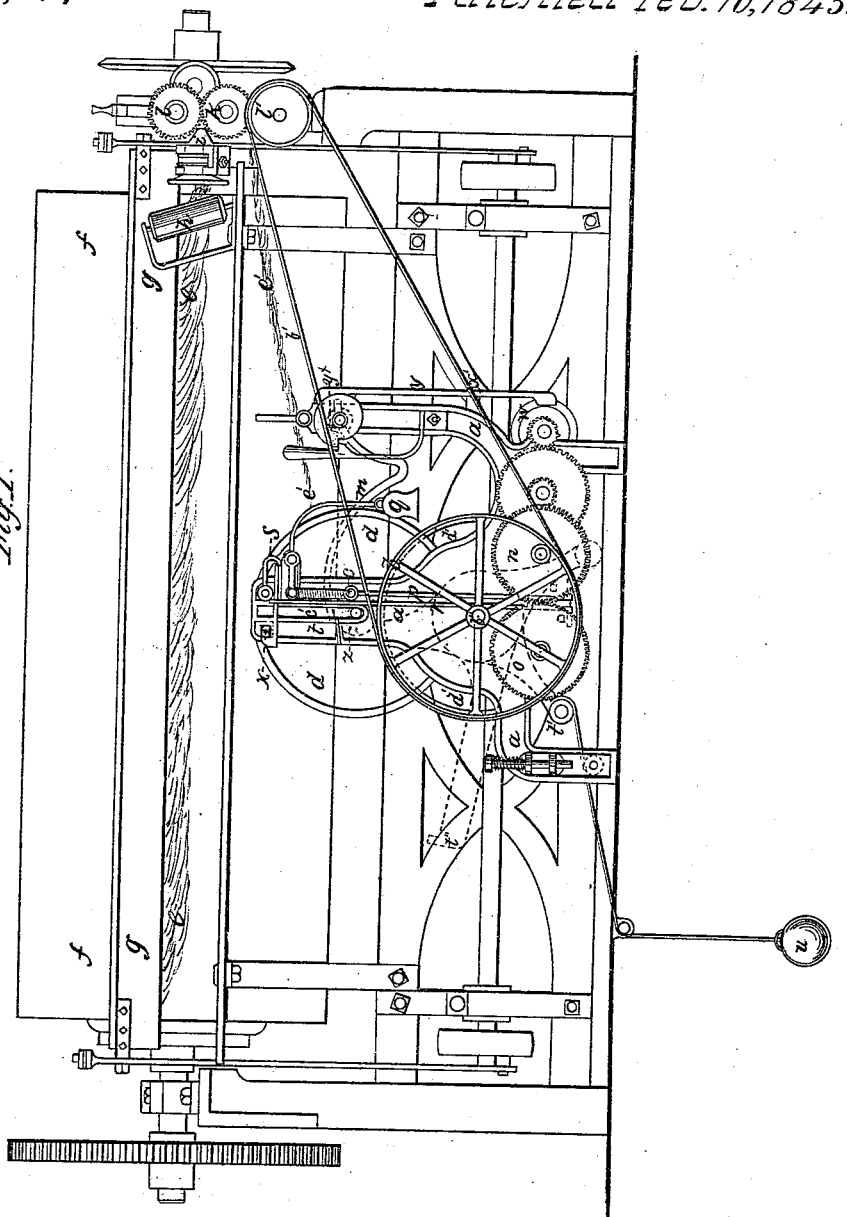

Fig. 1.

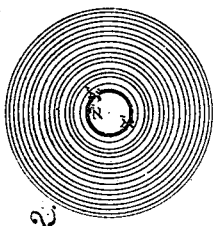

Fig. 2.

Witness:
John Davis

Inventor.
John Mason

J. Mason.

Carding Mach.

No. 2,947. Patented Feb. 10, 1843.

Fig. 1.

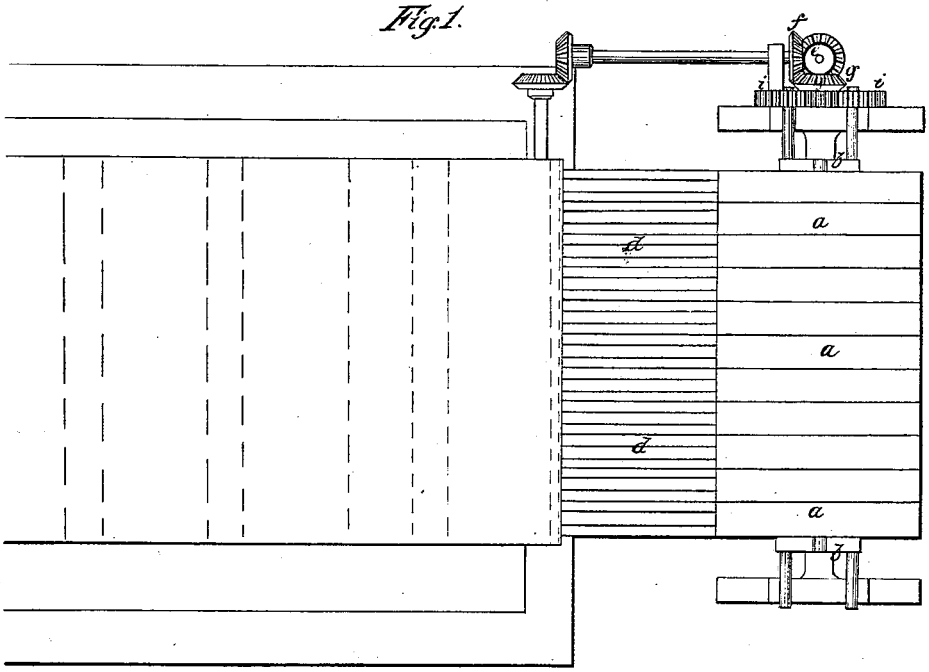

Fig. 2.

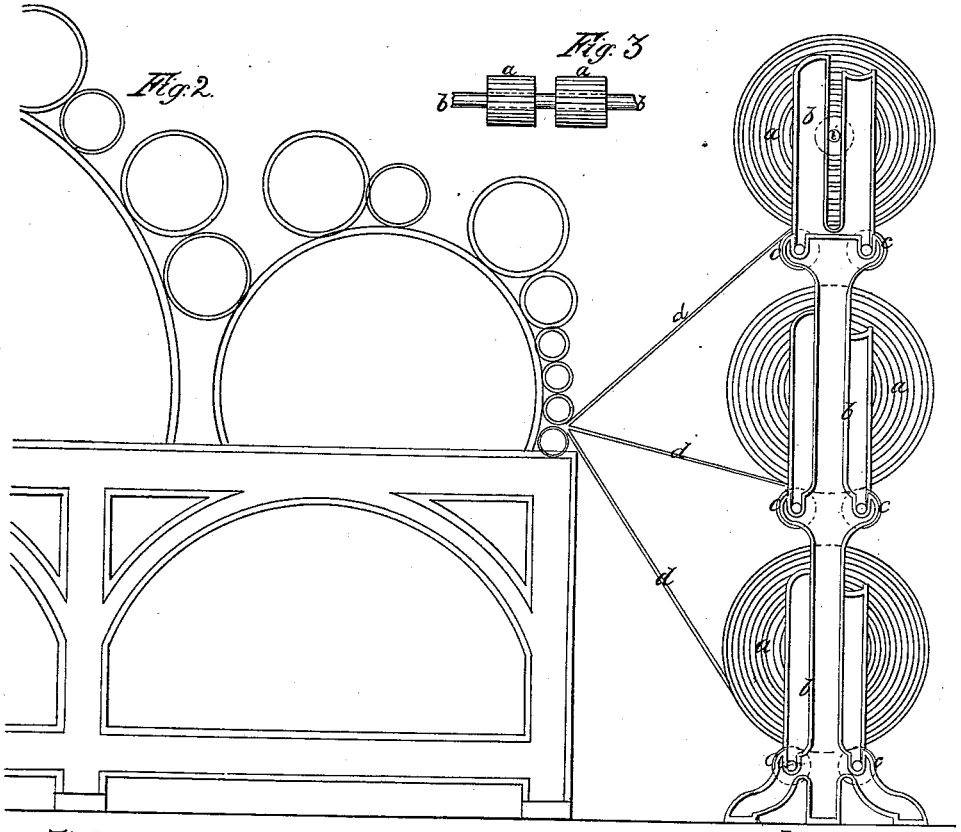

Fig. 3

Witnesses
John Davis

Inventor
John Mason

UNITED STATES PATENT OFFICE.

JOHN MASON, OF ROCHDALE, COUNTY OF LANCASTER, ENGLAND.

IMPROVEMENT IN MACHINERY OR APPARATUS FOR MAKING LAPS FOR FEEDING CARDING-ENGINES OR PREPARING COTTON, WOOL, OR OTHER FIBROUS SUBSTANCES FOR SPINNING.

Specification forming part of Letters Patent No. **2,947**, dated February 10, 1843.

To all whom it may concern:

Be it known that I, JOHN MASON, machine-maker, of Rochdale, in the county of Lancaster and Kingdom of Great Britain, have invented a new and useful Improvement in Machinery or Apparatus for Preparing Cotton, Wool, and other Fibrous Substances for Spinning; and I do hereby declare that the following is a full and exact description thereof.

The machinery or apparatus constituting my present invention is designed to be used in connection with the ordinary scribbler or doubler or first and second carding-engine, its object being to make a narrow and perfect lap for feeding the next carding-engine, and thereby to save the intermediate operation of winding the lap from small bobbins or spools between the first and second or the second and finishing carding-engines. In effecting this object the narrow laps of wool, &c., are to be wound upon a small cylindrical bobbin placed between two circular disks or plates, which are to revolve with said bobbin, and to be of such diameter as shall adapt them to that of the intended roll of lap when completed. These side plates and the bobbin which forms their axis are so arranged as that they may when full be removed together and replaced or substituted by others to be filled in like manner without it being necessary to stop the machine and without causing any variation in the working thereof.

In the drawings hereunto annexed I have represented a part of an ordinary scribbler-engine with my lap-machine placed in the particular position which it is to occupy when in use—that is, immediately in front of the doffing-cylinder.

a a is the frame of the lap-machine; *b*, a pulley driven by a band *b'*, which passes around a whirl *l'* on the shaft of the bottom calender-roller.

d d is one of the circular disks or plates between which the narrow roll of lap is to be formed. These plates may be two to six inches (more or less) apart, as may be preferred.

The shaft *b''* carries a roller *d'*, which extends up between the plates *d*. Upon this roller rests the bobbin upon which the lap is to be wound, and this causes the bobbin and the plates *d* on its axis to revolve in a manner well known.

The cylindrical bobbin is shown in dotted lines at *c*. This bobbin, with the plates *d*, which constitute its ends, rise up in the slot *c'* as the lap accumulates until the roll is fully formed.

The part *t*, which apparently forms a portion of the frame *a a*, and which constitutes one side of the slot *c'*, is in fact separate from it, and makes a part of two arms, the lower end of one of which is seen at *t'*, and which works freely upon the shaft *b''* as a fulcrum. The arms, excepting the part *t*, are contained within the frame *a a*, between it and the disks *d d*, as shown by dotted lines. While the lap is being wound upon the bobbin the upper ends of the arms remain in place, as at *t;* but when the winding is completed the arms fall into the position represented by the red lines, the upper portion *t* assuming the position shown at *t''*. The full bobbins, with the disks *d d*, then roll out and rest upon the arms *t''*, whence they are removed and the empty bobbin and disks replaced, the bobbin resting, as before, upon the roller *d'*, its gudgeon being supported laterally by the projecting part *z* of the frame *a a*. The arms are then made to rise, as shown in the figure.

Fig. 2 shows a roll of lap after the bobbin and disks have been removed from it.

z' z' is a ferrule of tin which slides over the bobbin or axle, which is best made of iron. The tin tube prevents the lap of wool or other material from closing together when removed from the bobbin. On the interior of the tin tube there is a feather *z''*, (shown in the drawings,) which fits into a groove on the bobbin, causing the two to revolve together. The disks slide freely onto the axis of the bobbin, and are therefore readily removed and replaced.

The lower ends *t'* of the two arms *t* are connected together by a cross-bar, and a counter-weight *u* may be made to operate upon them, so as to tend to raise them up when the disks and lap have been removed. When the upper ends of the arms *t* are raised, they are kept in place by a spring-latch *s*, there being a pin or stud *x* on the

arm t, which is held by said latch, and when the desired uniform quantity of lap has been wound the latch is depressed in the following manner: a rod r is made fast to the latch at its upper end, and its lower end is brought into contact with a stud on the gearing-wheel o, which is so graduated as to depress the rod and effect this object. The arms t then fall, and at the same time the gearing-wheel n is in such position as to cause a stud upon it to come into contact with the lower end of the rod p, which upon being depressed rings a bell q and gives notice to the attendant. A pinion on the opposite end of the shaft b'' gives the requisite motion to the respective gearing-wheels on both sides of the machine.

In the scribbler or carding-machine $f\ f$ is the doffer-cylinder, $g\ g$ the comb, and $e\ e$ the sliver of wool or other material which is struck off by said comb. This sliver, passing by the guide-roller h and through the conical tube i, which is made to revolve, receives a slight degree of twist between said roller and tube. From the tube it passes around a roller at k, being conducted by upper and lower calender-rollers at $l\ l'$. It is then conducted, as shown at $e'\ e'$, to the bobbin c of the lap-machine, passing through an eye in the end of the presser-lever m, by which it is distributed on the bottom. The presser-lever is made to traverse back and forth by means of the lever y, that vibrates on a fulcrum at x'. The lower end of this lever embraces an eccentric thread which projects from a roller at w, and its upper end embraces a pin or projecting piece on a ferrule or socket that is attached to the lever and that slides back and forth on a bolt which constitutes the fulcrum of said lever—a kind of motion and a manner of communicating it well known to machinists.

y^* is a notched pulley on the end of the bolt on which the socket of the presser-lever slides, serving by means of a spring-catch to hold up the presser-lever while the change of the disks and bobbin is being effected, when it is immediately released. The socket of the presser-lever is furnished with a feather working in a groove in the fulcrum-bolt, and said bolt and lever of course turn together.

I will now proceed to describe the manner in which the narrow rolls of lap formed as above set forth are to be fed to the next carding-engine. A sufficient number of these narrow laps are to be placed side by side to constitute a wide lap, or several wide laps, and through the centers of these a rod may be passed adapted in size to the above-named tin ferules, or they may be used either with or without such rod by the aid of the unlapping-rollers to be now described.

In Fig. 1, Sheet 2, I have given a plan or top view, and in Fig. 2 a side elevation, of the apparatus for sustaining the wide lap.

$a\ a\ a$, Fig. 1, is a top view of a wide roll of lap formed by the combination of a number of the narrow laps, and $a\ a\ a$, Fig. 2, an end view of three such wide laps sustained by a frame $b\ b$. These rolls of lap are shown as resting upon unlapping-rollers $c\ c$, which extend along under the laps and have their gudgeons in the two sides of the frame.

$d\ d\ d$ are the slivers or narrow laps proceeding from the frame $b\ b$ to the carding-engine.

The unlapping-rollers may be made to revolve by suitable gearing, as shown in the top view, Fig. 1, where e is a bevel-wheel on a vertical shaft, which is driven by a bevel-wheel f, receiving its motion from the carding-engine. The wheel e gears into another bevel-wheel g, which has on its shaft a pinion h, that gears into two pinions $i\ i$ on the ends of the unlapping-rollers. A gearing similar to that shown at $e\ g\ i\ i$ is repeated at each pair of unlapping-rollers, the vertical shaft upon which the wheel e is placed extending down on the outside of the frame $b\ b$ for that purpose. This gearing may, however, be altogether dispensed with, and the laps $a\ a\ a$, having a rod or shaft passed through the ferrules in their centers, may be sustained in the frame $b\ b$ by gudgeons j, Fig. 2, and the slivers $d\ d$ be drawn off by the carding-machine.

Having thus fully described the nature of my improvement in the machinery or apparatus for preparing cotton, wool, or other fibrous substances for spinning, what I claim as new therein, and desire to secure by Letters Patent, is—

The manner of constructing and using a lap-machine formed and operating substantially in the manner herein set forth, for the purpose of making a narrow lap, which may be removed from said machine in such form as that a series of such narrow laps may be placed side by side, so as to constitute a wide cylindrical lap, one or more of which may be employed to feed another carding-machine, either by passing a shaft through the same and drawing the slivers off by the direct action of the carding-machine or by the aid of geared unlapping-rollers, as set forth, thereby saving the intermediate operation of winding the lap from small bobbins or spools, as heretofore practiced.

JOHN MASON.

Witnesses:
JAS. HAGARTY,
SAM. PEARCE.