

Specification of Samuel Shaw Brown : manufacture of lint and lint bandages.

Contributors

Brown, Samuel Shaw.

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A.D. 1870, 22nd SEPTEMBER. N^o 2539.

SPECIFICATION

OF

SAMUEL SHAW BROWN.

MANUFACTURE OF LINT AND LINT
BANDAGES.

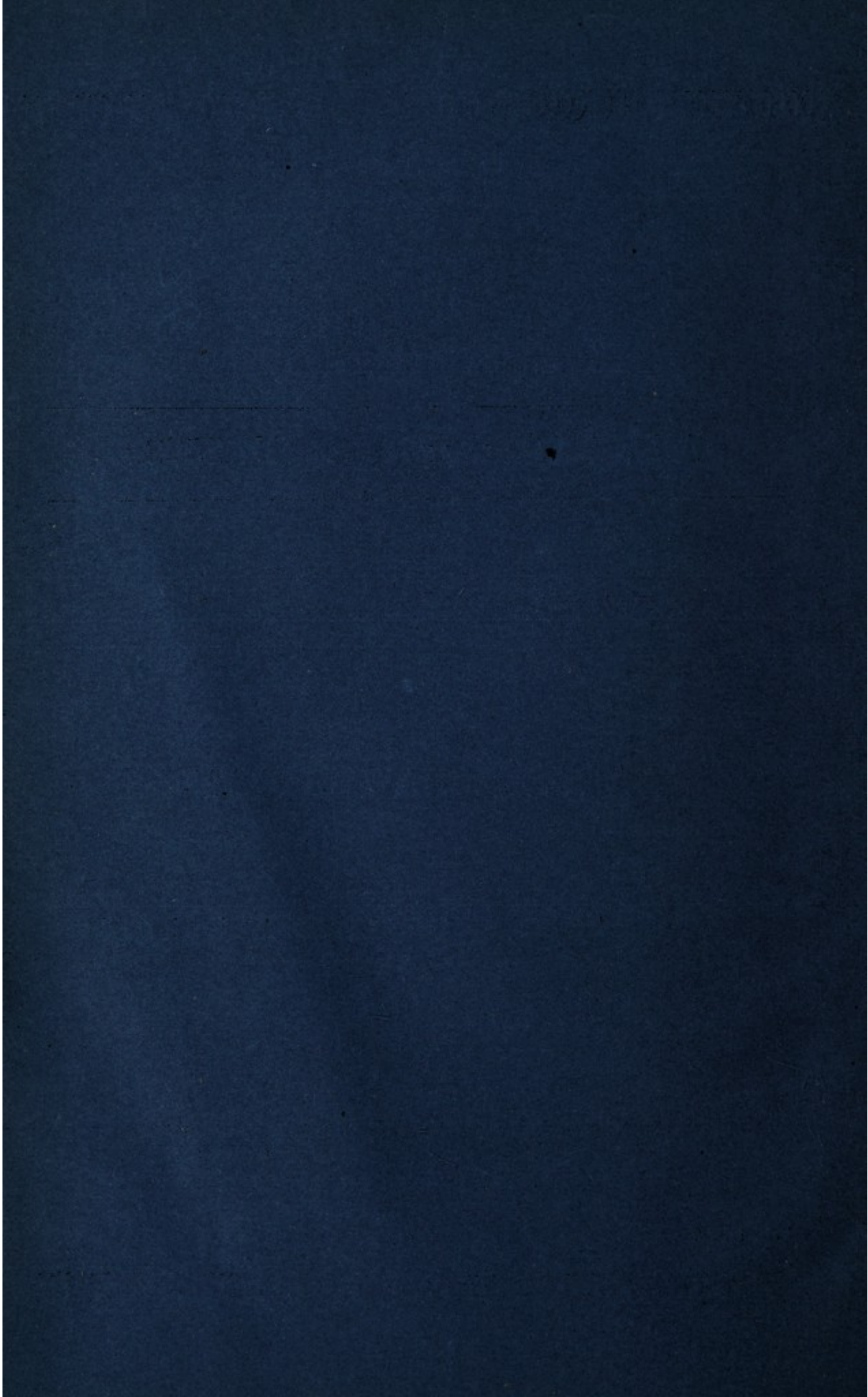
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A.D. 1870, 22nd SEPTEMBER. N^o 2539.

Manufacture of Lint and Lint Bandages.

LETTERS PATENT to Samuel Shaw Brown, of Portsmouth, in the County of Hants, for the Invention of "**IMPROVEMENTS IN MACHINERY OR APPARATUS FOR THE MANUFACTURE OF LINT AND LINT BANDAGES.**"

Sealed the 17th March 1871, and dated the 22nd September 1870.

PROVISIONAL SPECIFICATION left by the said Samuel Shaw Brown at the Office of the Commissioners of Patents, with his Petition, on the 22nd September 1870.

I, SAMUEL SHAW BROWN, of Portsmouth, in the County of Hants,
5 do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN MACHINERY OR APPARATUS FOR THE MANUFACTURE OF LINT AND LINT BANDAGES,**" to be as follows :—

The warp yarns which are either on a number of bobbins or on a beam are passed through a reed or comb fixed to the back of the loom, and
10 behind a pair of fluted or plain rollers or rollers covered with cloth or other slightly yielding material, from which rollers the yarns pass to the

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healds or harness of the loom to be woven with weft into cloth in the same manner as linen and calico. After the cloth is woven, instead of passing it over the breast beam and taking it up on a cloth beam as in the ordinary calico loom, the cloth at about three inches from the last pick of weft is received by a pair of plain, fluted, or covered rollers, or 5 by a single roller having spikes, or covered with wire cord. From the rollers or roller the cloth passes under or behind a metal bar fixed to the front of the loom, and near this bar there is a cranked rod to which a to-and-fro revolving motion is given by means of eccentrics and rod from the driving shaft of the loom. The cranked rod is a little wider than the 10 cloth, and as it revolves to and fro it raises the cloth and pulls it from a reciprocating knife in a slotted frame at the front of the loom, there being below the knife an uncovered or covered metal plate acting as a cushion. The knife is pulled to or pressed towards the cushion by an india-rubber or other spring and pushed from the cushion as required for its to-and- 15 fro motion by a slotted or forked rod connected by an eccentric to the driving shaft, the eccentric being so adjusted that the cranked rod shall be pulling the cloth from the knife at the time the knife is pressing on the cushion. Motion is imparted to both sets of rollers by gearing and ratchet wheels worked by ratchets on a rod moved to and fro by the slay 20 or batten, and in order to deliver the yarn and cloth in even quantities to and from the rollers, elastic pads between the bearings of the rollers and regulating pressure screws are employed.

For some kinds of lint I use one or more revolving knives working across the front end of the loom, so as to scrape the cloth at about two 25 inches from the front roller or rollers. Under each knife there is a cushion formed as a segment of a circle corresponding with the circle described by the knife, or there is a flat cushion meeting the knife at an angle, such cushions being pulled or pressed towards the knife by india-rubber or other springs. 30

When bandages having plain cloth at one end and linted cloth at the other end are required, the cushions under the reciprocating and revolving knives are removed whilst the plain portion is woven the length required and replaced when the cloth is required to be linted.

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SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Samuel Shaw Brown in the Great Seal Patent Office on the 22nd March 1871.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, **SAMUEL**
5 **SHAW BROWN**, of Portsmouth, in the County of Hants, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-second day of September, in the year of our Lord One thousand eight hundred and seventy, in the thirty-fourth year of Her reign, did, for Herself, Her heirs and suc-
10 cessors, give and grant unto me, the said Samuel Shaw Brown, Her special licence that I, the said Samuel Shaw Brown, my executors, administrators, and assigns, or such others as I, the said Samuel Shaw Brown, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times there-
15 after during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN MACHINERY OR APPARATUS FOR THE MANUFACTURE OF LINT AND LINT BANDAGES**," upon the condition (amongst others) that I,
20 the said Samuel Shaw Brown, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within
25 six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Samuel Shaw Brown, do hereby declare my nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and
30 by the following statement thereof, reference being had to the Figures on the accompanying two Sheets of Drawings, and to the letters of reference marked thereon (that is to say) :—

This Invention consists in improved arrangements and combinations of mechanism for enabling lint and lint bandages to be manufactured more
35 efficiently and economically than heretofore accomplished.

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The warp yarns or threads of which the lint or lint bandages are to be made are wound on a number of bobbins or on a beam and passed through a reed or comb, and between a pair of fluted or plain rollers, or rollers covered with cloth or other slightly yielding material, from which rollers the yarns or threads pass to the healds or harness of the 5 loom to be woven with weft into cloth in the same manner as linen and calico. After the cloth is woven instead of passing it over a breast beam and taking it up on a cloth beam, as in the ordinary linen or calico loom, I cause the cloth at from three to six inches from the last pick of weft to be received by a pair of plain fluted 10 or covered rollers, or by a single roller having spikes or covered with wire card.

In one arrangement the cloth passes from the rollers or roller behind a metal bar fixed to the front of the loom, and before a cranked rod, to which revolving motion is given by gearing in connection with the 15 crank or tappet shafts of the loom, and from the cranked rod the cloth passes between a horizontal linting knife having the ordinary to-and-fro motion and pause, and an uncovered or covered metal roller or plate acting as a cushion. The knife is pulled to or pressed against the cloth in contact with the cushion by india-rubber or other springs, and pushed 20 from the cloth and cushion by slotted or forked rods moved to and fro by eccentrics on a shaft driven by toothed wheels, the eccentrics being so adjusted that as the cranked rod revolves it shall raise the cloth at the time the knife is pressing the cloth against the cushion, and thus perform the operation of linting. The cloth and yarns are drawn through 25 the machine by the front fluted, covered, or plain rollers, or by the spiked roller, revolving motion being given to one of the rollers by means of toothed gearing turned by a ratchet wheel worked by a catch or ratchet on a rod moved up and down by a lever on the ordinary rocking shaft, or to and fro by the slay or batten; and in order to draw the yarns and 30 deliver the cloth in even quantities elastic pads between the bearings of the rollers and regulating pressure screws are employed.

In another arrangement or modification I employ a vertical knife having a cushion below it and move the cloth to be linted by a straight rod working vertically, the knife being moved one way by springs and 35 the other way by eccentrics and rods and instead of passing the warp yarns or threads between fluted or covered rollers at the back of the

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loom, I pass them over an ordinary vibrating bar and work the eccentrics and rods by bands, or chain or toothed gearing from the crank shaft of the loom.

For some kinds of lint I use one or more revolving knives working
5 across the front end of the loom so as to scrape the cloth at from two to three inches from the front rollers or roller. Under each knife there is a cushion formed as a segment of a circle corresponding with the circle described by the knife, or there is a flat cushion meeting the knife or knives at an angle, the cushion being pulled or pressed towards the
10 knife or knives by india-rubber or other springs.

When bandages having plain cloth at one end and linted cloth at the other end are required, the cushions behind or under the cloth and knife are removed, whilst the plain portion is woven the length required and replaced when the cloth has to be linted.

15 On the accompanying two Sheets of Drawings, Figure 1 is a front, and Figures 2 and 3 end elevations of the first arrangement of linting apparatus combined with the framework and other parts of a loom; Figures 4, 5, and 6, are similar elevations of a modification of the same; Figures 7 and 8, detached views of parts in connection with Figures 1,
20 2, and 3; Figure 9, a detached view of parts in connection with Figures 4, 5 and 6; and Figures 10, 11, and 12 are views representing knives intended to revolve against cloth in contact with cushions.

In the various Figures *a* represents the side frames of the loom; *b*, the crank shaft; *c*, the tappet shaft; *d*, the sword arms; *e*, the slay
25 or batten; *f*, the rocking shaft; *g*, the healds; *h*, the yarn beam; *i*, the warp yarns or threads; and *k*, the cloth. The loom is provided with weft and weighting motions, tappets, shuttle, pickers, picking sticks, temples, and all the parts and movements of an ordinary loom for weaving calico and linen with the exception of the breast beam, taking-
30 up roller, and cloth beam, and the linting apparatus can be applied with equal facility to looms of different makers and all descriptions of linen and calico looms.

In Figures 1, 2, and 3, the warp yarns or threads are wound on the ordinary yarn beam *h* and passed over the roller *l* between the dents of
35 the comb *m*, between the rollers *n*, under the tension rod *o*, and over and under lease rods when used to the healds and reed to be woven with weft into cloth in the usual manner, the cloth passing onwards between the

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fluted or covered rollers p , q , Figures 1, 2, 3, 7, and 8, which draw or take up the cloth and draw the yarns from the yarn beam. Between the bearings of the back and front pairs of rollers are placed india-rubber pads r , the pressure on the cloth being regulated by the screws s , and when the loom is at work the bottom roller q is turned by the gearing t , 5 Figure 7, and ratchet wheel u , the latter being turned by the catch v on the lever w worked by the rod x on the lever y fixed to the rocking shaft f . From the rollers p , q , the cloth passes behind the stationery rod z , Figure 1, 2, 3, and 8, and in front of the cranked rod a^1 to which revolving motion is given by the bevil gearing b^1 and shaft c^1 , Figures 1 10 and 3, one wheel being fixed on the crank shaft b and another wheel on the cranked rod a^1 , and from this rod the cloth passes between the horizontal linting knife d^1 and cushion e^1 . The knife is fastened by screws to the plate f^1 fitted in slots in brackets fixed to the side frames a , and the knife is moved towards and against the cloth and cushion by springs h 1 acting 15 on the plate f^1 and moved back by the rods l 1 and eccentrics m^1 , worked by gearing n 1 from the crank shaft b , and when the knife is in contact with the cloth against the cushion the cranked rod a^1 moves the cloth to enable the knife to perform the operation of linting. When the knife goes back the linted cloth descends into a receptacle in the usual 20 manner, the fluted or covered rollers p , q , at the same time being put in motion to pass more cloth onwards, and draw fresh yarn forwards, and thus the operations of weaving and linting are performed in one machine or loom at the same time. In Figures 4, 5, and 6, the warp yarns or threads i pass from the yarn beam h over an ordinary vibrating bar p 1, 25 and from thence through the healds and reed to be woven with weft into cloth, and at the front of the loom there are two fluted or covered rollers p , q , between which the cloth is passed, the rollers drawing the cloth and yarns in the same manner as in Figures 1, 2, and 3, there being india-rubber pads r between the bearings of the rollers and screws s 30 for regulating the pressure. From these rollers p , q , the cloth passes over a bar r 1, Figures 5 and 6, and between the vertical knife s 1 and cushion t 1, the bar working in slots formed in brackets u 1 fixed to the side frames a . The knife s 1 is fixed to the plate v 1 having its ends fitted in slots in the brackets u 1 and the plate and knife have downward motion 35 imparted to them by the springs w 1, Figures 4 and 5, and upward motion by the eccentrics a 2 and rods b 2, and the bar r 1 has up-and-down motion given to it by the eccentrics c 2 and rods d 2, all the eccentrics

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being fixed to the shaft *e* 2 driven by the band *f* 2 and pulleys *g* 2, *h* 2, or the shaft may be turned by gearing, as in Figures 1, 2, and 3. The bottom roller *q* is turned by the gearing *l* 2 and ratchet wheel *m* 2, Figure 9, the latter being turned by the catch *n* 2 on the lever *o* 2, which
5 is moved up down by a stud *p* 2 in connection with one of the eccentric rods *b* 2.

When the machine is set to work and the knife is in contact with the cloth against the cushion *t* 1, the bar *r* 1 is raised by the eccentrics *c* 2 and rods *d* 2 so as to move the cloth to enable the knife to perform the
10 operation of linting, and when the bar descends and the knife rises the linted cloth descends into a receptacle, and thus, as in the former case, the operations of weaving and linting are performed in one machine or loom at the same time.

When revolving knives are used in connection with looms I place
15 them near the front fluted or covered rollers and cause them to revolve by bands, toothed chains, or gearing from the crank or tappet shafts of the loom.

In Figures 10, 11, and 12, *a* represents the front part of the side frames of the loom; *p*, *q*, the fluted or covered rollers; and *r* 2, the
20 revolving knives, the rollers being adjusted by means of pads and screws and made to revolve, to draw the yarns, and deliver the cloth, as before described.

In one arrangement the cloth from the rollers *p*, *q*, passes between the knives *r* 2, Figure 10, and a cushion *s* 2 formed as a segment of a circle
25 corresponding with the circle described by the knives, and in another arrangement shewn in Figures 11 and 12, the cloth passes between the knives *r* 2 and a flat cushion *t* 2 pivotted at the back to the side frames as at *u* 2 and jointed at the front to springs *v* 2 connected to brackets *w* 2, there being screws and nuts *x* 2 to adjust the cushion as required, and
30 when the loom is at work, and the knives revolving against the cloth in contact with either of the cushions, the operations of weaving and linting are going on at the same time without intermission as long as the machine is at work, and when lint bandages are to be made the cushion or knives are removed.

35 Having now described the nature and particulars of my said Invention, and the manner in which the same is to be performed, I desire it to be understood that I do not claim the fluted or other rollers, the reciprocating

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and revolving knives, the cushions and springs, the eccentrics and other parts of the linting apparatus taken separately, or when used independent of a loom for weaving, but what I do claim is, the combination of the fluted or covered rollers, and the various arrangements of linting apparatus with calico and linen looms so that the operations of weaving 5 and linting can be performed in one machine as all such improvements are herein described and illustrated in the accompanying two Sheets of Drawings.

In witness whereof, I, the said Samuel Shaw Brown, have hereunto set my hand and seal, this Twentieth day of March, in 10 the year of our Lord One thousand eight hundred and seventy-one.

SAMUEL SHAW BROWN. (L.S.)

Signed, sealed, and delivered.
by the within-named Samuel
Shaw Brown, in the presence
of

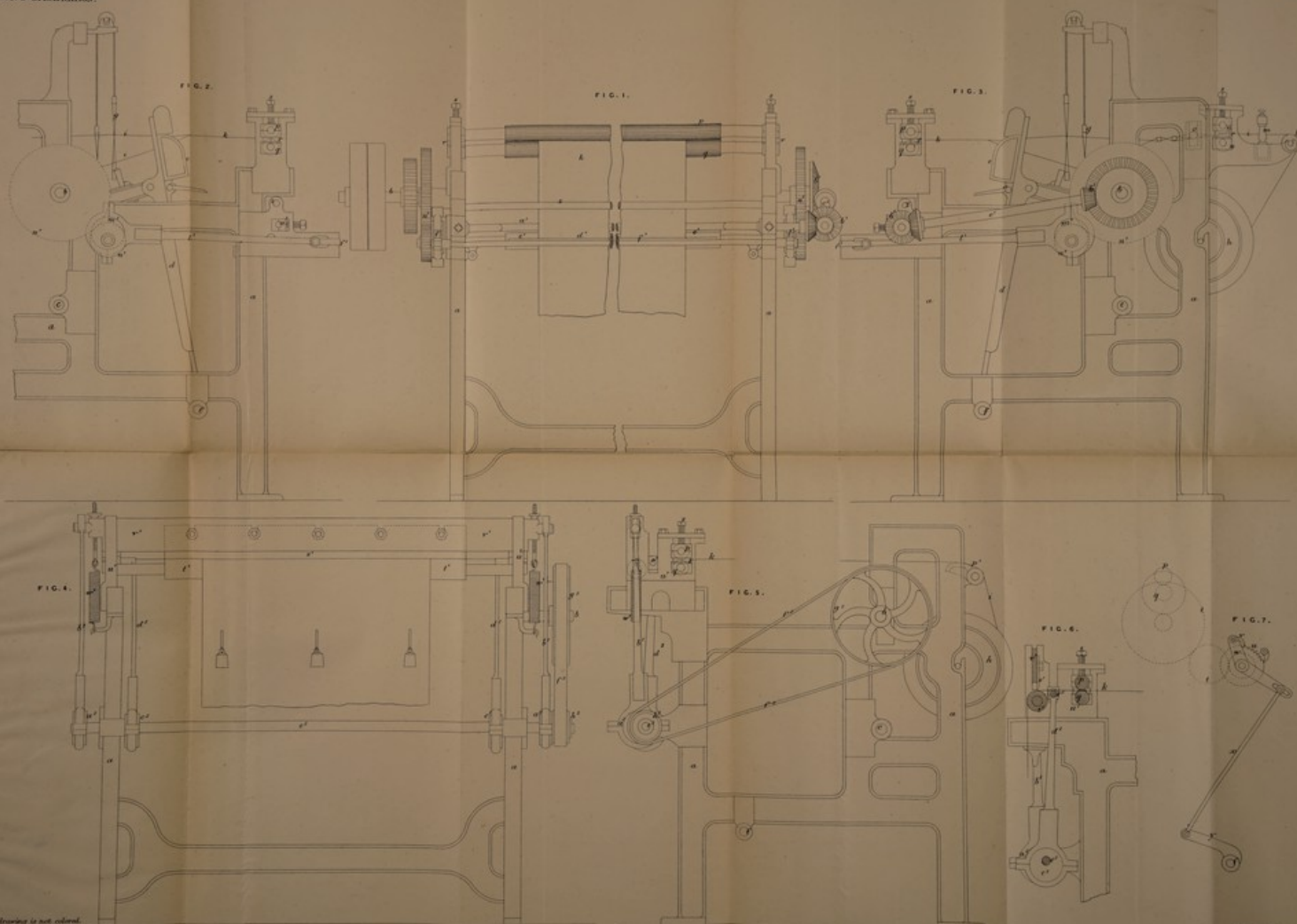
15

G. SEPTIMUS HUGHES,
Patent Agent,
Manchester.

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