

A.D.  $1825 \dots N^{\circ} 5224$ .

## Carding Machines.

## BROOKE & HARGRAVE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, we, JOHN EDWARD BROOKE, of the Township of Headingley, in the Parish of Leeds, in the County of York, and JAMES HARGRAVE, of Kirkstall, in the said Township, Woollen Manufacturers, send greeting.

WHEREAS His present most Excellent Majesty King George the Fourth, by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-sixth day of July, in the sixth year of His reign, did, for Himself, His heirs and successors, give and grant unto us, the said John Edward Brooke and James Hargrave, His especial licence that we, the said John Edward Brooke and James Hargrave, our exors, admors, and assigns, or such others as we, the said John Edward Brooke and James Har-

assigns, or such others as we, the said John Edward Brooke and James Hargrave, our exors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within

15 England, Wales, and the Town of Berwick-upon-Tweed, our Invention of "Certain Improvements in or Additions to Machinery used in Scribbling and Carding Wool or other Fibrous Substances;" in which said Letters Patent is contained a proviso obliging us, or one of us, the said John Edward Brooke and James Hargrave, by an instrument in writing under our or one of our

20 hands and seals, particularly to describe and ascertain the nature of our said Invention, and in what manner the same is to be performed, and to cause the same to be inrolled in His said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said recited Letters Patent, as in and by the same, reference being thereunto had, will

25 more fully and at large appear.

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NOW KNOW YE, that in compliance with the said proviso, we, the said John Edward Brooke and James Hargrave, he hereby declare the nature of our said Invention to consist in the application of steam cases under the various principal parts of ordinary scribbling or carding machines, for the purpose of communicating heat to the wool or other fibrous substances operated 5 upon during all the principal stages of its progress through the said machines, and also in an apparatus for laying the wool or other fibrous substance straight on the doffer; and in further compliance with the said proviso, we, the said John Edward Brooke and James Hargrave, do hereby describe the manner in which we perform our said Invention by the following description thereof, 10 reference being had to the Drawing annexed, and the letters marked thereon (that is to say):—

DESCRIPTION OF THE DRAWING.

This Figure is intended to represent the side elevation of an ordinary carding or scribbling machine. A is a shallow metal steam case; and it may 15 here be observed, that all the steam cases are as wide as the cylinders of the machine, which being a general rule applicable to them all, no front elevation or plan of the machine will be required. This steam case A, it will be seen, passes between the upper and lower webs of the feed cloth. B is another similar steam case above the feed cloth, and receives the steam from the lower 20 steam case A, by means of the connecting pipe T, and these two steam cases serve to heat the wool or other fibrous substance in the first stage of the process, namely, when it is first laid on the feed cloth to be taken on to the C, C, C, are three curved metal steam cases adapted to the form of the three cylinders under which they pass, and D, D, D, are the horizontal 25 metal cases, to convey heat to the spaces not heated by the curved ones. F is And before we describe the apparatus for laying the wool or other fibrous substance straight upon this cylinder we will complete the description of the steam cases. When the materal operated upon leaves the doffer it is drawn through the ordinary drawing rollers here marked by the letters 30 R, R, and part of our said Invention consists in placing the steam cases S, S, S, as here shewn. These cases are bored with five holes on their upper surface, so as to emit a jet of steam against the material above it as it is drawn over them. The whole of the steam cases herein-before described are fed with steam from the main steam pipe marked E, by means of the 35 branch pipes marked G, except the steam case marked B, which is fed as before described by the pipe r, and the small steam case marked D, which receives its steam from one of the curved cases C, by means of the small pipe e. Now, whereas the application of the said steam cases for the purpose aforesaid constitutes the first part of our said improvements; and we will now describe 40

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the apparatus for laying the material operated upon straight in the doffer, which apparatus constitutes the second part of our said improvements. g is the end of a bar or rod, which passes under the whole length of the doffing cylinder; and the motion which it is required to perform in order to 5 lay the fibres straight in the doffer is represented by the dotted lines and arrow. In order to effect this motion we apply the following apparatus to the rod or bar q. And it should here be observed, that the framework for supporting this apparatus is omitted for the purpose of better explanation, it being evident what framework would be required to support the parts here shewn. 10 f is a fixed centre. b and t are two flat bars of iron with slots. The bar b moves against the fixed centre f, and the bar t is acted upon or moved by the rod W, which works, by means of the pin at V, in the slot of the bar t. The parts at X and Y are bevil gear connected by the shaft Z. This bevel gear at Y works the rod W by means of the crank or arm i. The upper end of the shaft b is 15 fixed on a pivot to the lower end of the eccentric board or cam U, and this board or cam works against the under side of the horizontal and fixed plane N; and this apparatus, when the bevel gear is put in motion by any of the ordinary means, will cause the rod or stroker g to describe the figure represented by the dotted lines. We also place a cylinder at L, with fans upon it, 20 for the purpose of stroking or laying the material to be operated upon straight on the cards at that particular part of the process where it is introduced, though we do not claim this as any part of our said Invention. But whereas we claim as our Invention the steam cases herein-before described for the purposes aforesaid, and the apparatus also herein-before described for laying 25 the wool or other fibrous substance straight on the cylinder called the doffer.

And such our Invention being, to the best of our knowledge and belief, entirely new, and never before used within that part of His said Majesty's United Kingdom of Great Britain and Ireland called England, His said Dominion of Wales, or Town of Berwick-upon-Tweed, we do hereby declare this to be our Specification of our said Invention, and that we do verily believe this our said Specification doth comply in all respects, fully and without reserve or disguise, with the proviso in our said herein-before in part recited Letters Patent contained; wherefore we do hereby claim to maintain exclusive right and privilege to our said Invention.

In witness whereof, we, the said John Edward Brooke and James Hargrave, have hereunto set our hands and seals, this Twenty-third day of January, in the year of our Lord One thousand eight hundred and twenty-six.

JOHN EDW<sup>D</sup> (L.S.) BROOKE. JAMES (L.S.) HARGRAVE.

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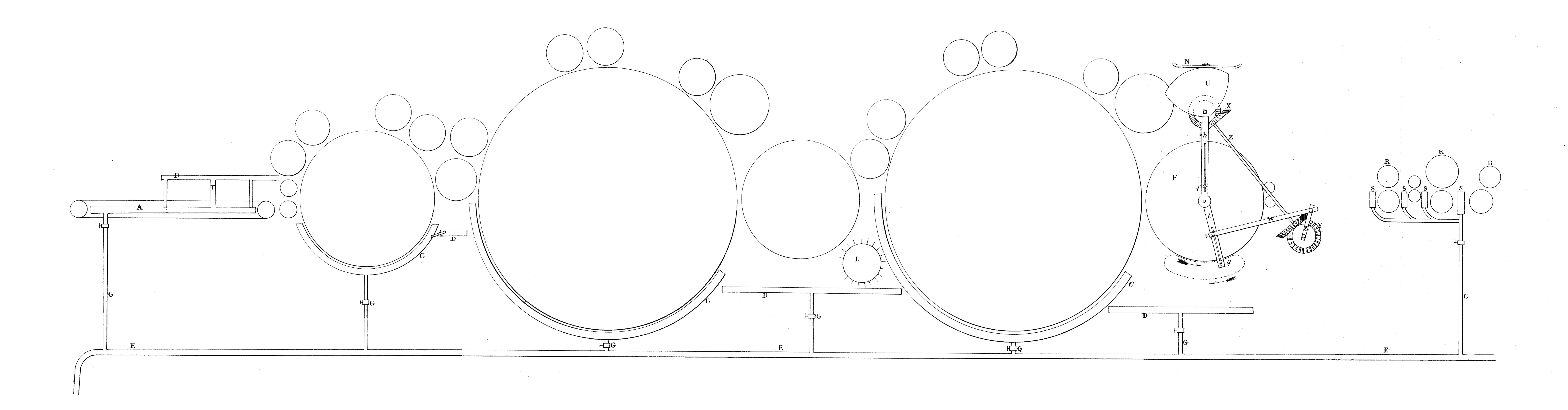
AND BE IT REMEMBERED, that on the Twenty-third day of January, in the year of our Lord 1826, the aforesaid John Edward Brooke and James Hargrave came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was 5 stamped according to the tenor of the Statute made for that purpose.

Inrolled the Twenty-sixth day of January, in the year of our Lord One thousand eight hundred and twenty-six.

LONDON:

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C.



The enrolled drawing is colored.

Drawn on Stone by Malby & Sons