S. Baxendale.

Making Wadding.

No. 46,065. Patented Jan. 31, 1865.

Fig. 1.

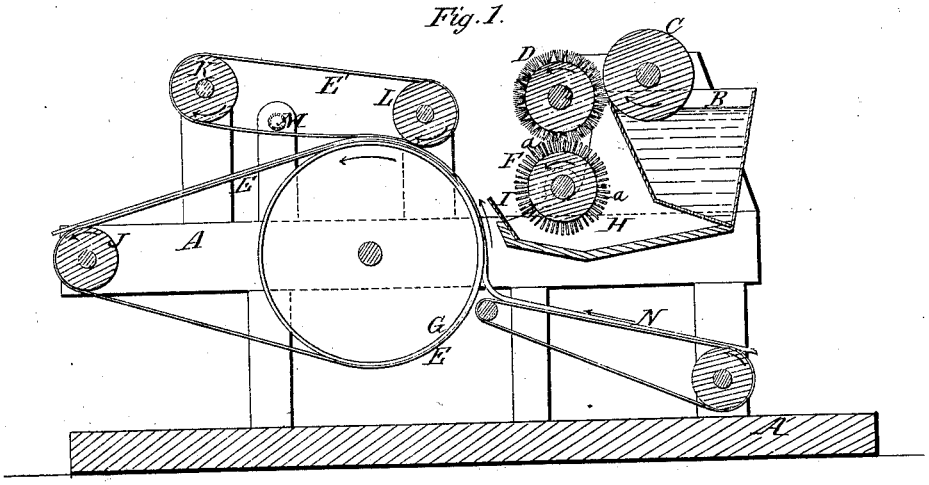
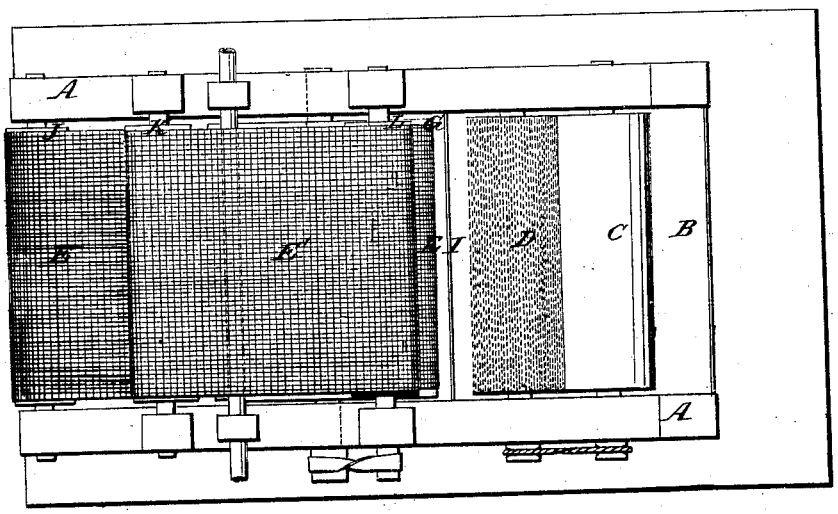


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL BAXENDALE, OF SOUTH MALDEN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR SURFACE-SIZING WADDING, &c.

Specification forming part of Letters Patent No. **46,065**, dated January 31, 1865.

To all whom it may concern:

Be it known that I, SAMUEL BAXENDALE, of South Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machinery for Surface-Sizing Wadding, Batting, and other Fibrous Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section of a machine with my improvements. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in the several figures.

My improvements are more especially designed for the sizing of wadding or bats made of shoddy, which, owing to its want of tenacity before it is sized, cannot be sized by the apparatus commonly used for cotton-batting.

It consists principally in the employment for sprinkling the sizing upon the bat or web of a pin-pointed cylinder, or a cylinder having rigid projections, operating in combination with a rotary brush, or its equivalent, from which it receives the size on its pins, and throwing the sizing upon the bat or web by centrifugal force.

It also consists in a deflector so applied in combination with the aforesaid cylinder as to deflect a portion of the current of air produced by the rapid revolution of the said cylinder, and thereby conducting a portion of it downward into a waste-box, which receives the waste-sizing from the said cylinder, and another portion onto the bat or web for the distribution of the sizing on the surface thereof.

It also consists in the combination, with a device for throwing or sprinkling the sizing upon the bat or web, of a pair of endless carrying-aprons made of wire-cloth or other reticulated or perforated metallic fabric; and it further consists in the employment within the upper of said aprons of a blast-pipe or blowing apparatus for releasing the sized bat or web from that apron and causing it to pass with the lower of said aprons to the drying-room or to a device which conveys it to said room.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A is the framing of the machine, on one end of which is supported the stationary box B, which contains the sizing, and into which dips the rotating supplying-roller C, from the surface of which the sizing is supplied to the rotating brush D, arranged in front of the said roller. Below the rotating brush is arranged the pin-pointed cylinder F, which throws the sizing upon the bat or web. This cylinder, the journals of which are supported in fixed bearings, may be made of wood or other suitable material, and is studded thickly all over with pins *a a* of wire of from about one-quarter of an inch to three-quarters of an inch in length, and of such thickness that they will not bend in passing through the brush as the cylinder and brush revolve. This cylinder revolves at a high velocity, so that its pins may throw upon the bat or web by centrifugal force the sizing which they receive from the brush D as the bat or web, which is represented in red color in Fig. 1, is carried by the lower endless apron E of wire-cloth or other reticulated or perforated metallic fabric over the large rotating cylinder G, which is arranged in suitable bearings some distance in the front of the cylinder F.

Below the pin-pointed cylinder F there is arranged the waste-box H, which receives the waste-sizing from the said cylinder, and at the front side of the waste-box there is arranged the deflector I, which consists of a plate or board of a length equal to that of the said cylinder, and which may be adjustable at various angles to deflect into the waste-box a portion of the current of air produced by the rapid revolution of the said cylinder and direct another portion of the said current upon the endless apron E for the distribution upon the web or bat of the sizing sprinkled thereon by the pins *a* of the cylinder F.

The lower reticulated or perforated metallic endless apron, E, runs upon the large rotating cylinder G, before mentioned, and upon a rotating cylinder or roller, J, which may be arranged so that the said apron may deliver the web or bat into a drying-room, or to another apron which conveys it to the drying-room, or be arranged within or beyond the drying room, so that the apron E may carry the bat or web through the drying-room.

The cylinder G, may be hollow, and have its periphery composed of wire-cloth or other

perforated or reticulated material. The upper apron, E′, which is made of similar material to the lower one, E, runs upon two rotating cylinders or rollers, K and L, the latter of which is so arranged that the bat or web will be subjected to pressure between the two aprons as it passes over the cylinder G, for the purpose of producing the adhesion of the fibers of which it is composed by means of the sizing which is spinkled upon it by the pins *a* of the cylinder F. The upper apron, E′, need not be so long as the lower one, E, and the cylinder or roller K is arranged at some distance above the apron E, so that the two aprons may be separated where the batting is required to leave the upper apron.

M is a blast-pipe, arranged transversely within the upper apron, E′, not far from the cylinder or roller K. This pipe is connected with a suitable blowing apparatus, and has a slit or perforations in its under side through which the air is blown through the recticulations or perforations of the said apron upon the bat or web to detach it from the said apron and cause it to follow or be carried by the lower one to the drying-room. Instead of this pipe M there may be a rotary fan or other blower arranged within the apron E′.

N is an endless apron, which brings the bat or web from the machinery by which it is formed to the endless apron E, which receives it at the back of the cylinder G, and carries it upward past the deflector I and pin-pointed cylinder F, to receive the sizing thrown from the points of the pins of the said cylinder by centrifugal force. After receiving the sizing, which is distributed upon it by the portion of the current of air from the pin-pointed cylinder which passes over the deflector I, the bat or web is carried under the apron E′, which compresses it in such manner as to produce the adhesion of its fibers. The aprons E and E′, being made of a reticulated or perforated metallic fabric, cause the adhesion of the fibers to be produced without rendering the web compact, and leave it loose and elastic while giving it a desirable degree of tenacity. The bat or web after having been compressed between the two aprons E E′, is detached from the upper one, E′, by the blast from the pipe M, or its equivalent, and carried on by the lower apron, E, to the drying room or apparatus.

The cylinder F, instead of having wire pins *a* on its circumference, may have rigid projections made of flat plate, or of other form.

The sizing may be sprinkled on the endless apron E or cylinder G preparatory to their receiving the bat or web, and the bat or web be made to take the sizing from the apron or cylinder in passing over it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the rotary cylinder F, having pin-points or other rigid projections on its periphery, with the rotary brush D, or its equivalent, from which the pins or projections of the said cylinder receive the sizing to sprinkle it upon the bat or web by centrifugal force, substantially as herein specified.

2. The deflector I, in combination with the cylinder F, substantially as and for the purpose herein described.

3. The reticulated or perforated metallic endless aprons E E′, in combination with a device for sprinkling the sizing upon the bat or web, substantially as and for the purpose herein set forth.

4. The employment, in combination with two perforated or reticulated endless metallic aprons, E E′, operating together as herein described, of a blast-pipe, M, or other equivalent device for delivering a blast of air applied within one of the said aprons, substantially as and for the purpose herein set forth.

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Witnesses:
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