

(No Model.)

2 Sheets—Sheet 1.

W. H. H. SISUM.
HACKLING MACHINE.

No. 557,621.

Patented Apr. 7, 1896.

WITNESSES:

Person L. Wells,
 Walter A. Pauling.

INVENTOR

William H. Lisle

BY *Edwin H. Brown*

HIS ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

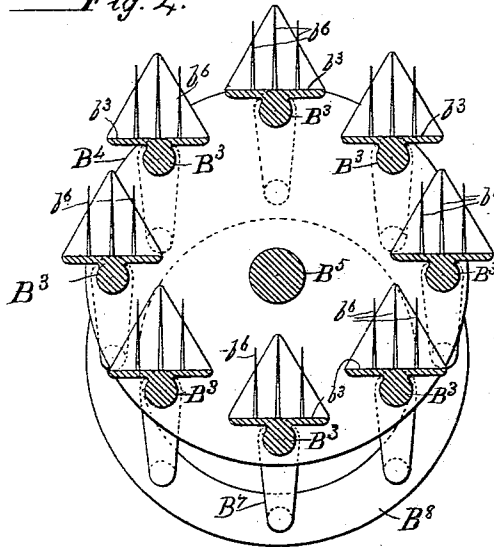


Fig. 3.

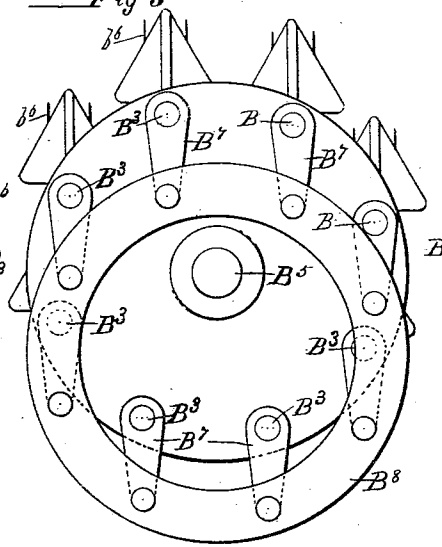


Fig. 5.

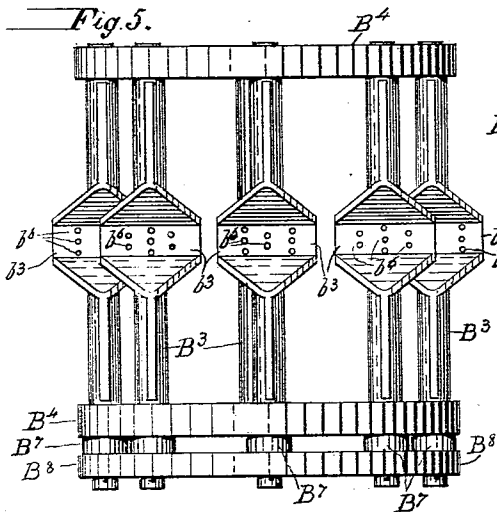
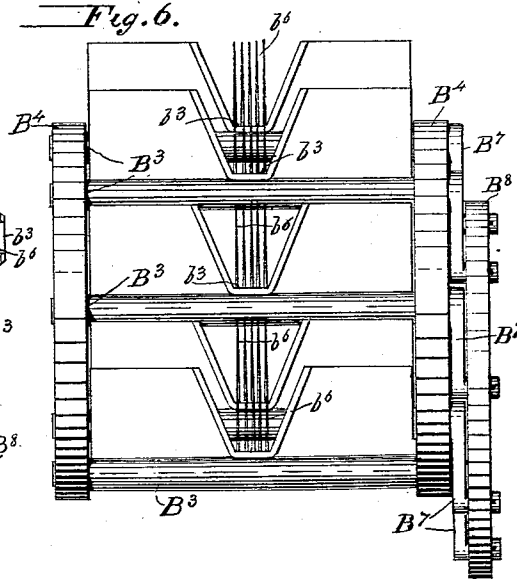


Fig. 6.



WITNESSES:

Richard L. Wells
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INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM H. H. SISUM, OF BELLEVILLE, NEW JERSEY.

HACKLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 557,621, dated April 7, 1896.

Application filed November 6, 1894. Serial No. 528,073. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. H. SISUM, of Belleville, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Hackling-Machines, of which the following is a specification.

The object of my improvement is to produce a hackling-machine which, for a given number of drawings or combings of fibrous material, will be shorter, and hence will occupy less space.

My improvement comprises a number of circularly-arranged sets of rods driven successively at faster speeds, provided with rests for fibrous material and teeth projecting from these rests for drawing or combing fibrous material, the said rods being combined with means for preventing them from having any rotary movement. Rollers may be arranged intermediately of different sets of the rods and driven at different speeds.

In the accompanying drawings, Figure 1 is a side elevation of a hackling-machine embodying my improvement. Fig. 2 is a plan or top view of the same. Fig. 3 is an end view on a larger scale of one set of rods and their appurtenances. Fig. 4 is a transverse section of parts shown in Fig. 3. Fig. 5 is a plan or top view of the parts shown in Fig. 3. Fig. 6 is a front view of the parts shown in Fig. 3.

Similar letters of reference designate corresponding parts in all the figures.

I will premise that the machine is intended to be used for various kinds of fibrous materials and not for any particular material or class of materials.

A designates the framework of the machine. It may be of any suitable construction. Mainly it will consist of side pieces and stretchers uniting the same. B' B² B³ designate three series of circularly-arranged rods severally provided with rests b' b² b³ for fibrous material and hackling-pins b⁴ b⁵ b⁶. These rods in each set are journaled in disks or heads B⁴, which are affixed to shafts B⁵, that are journaled in bearings B⁶, mounted upon the side pieces of the framework A. The rods at one end protrude through the disks and are provided with cranks B⁷, which at the outer ends are engaged with holes in

rings B⁸, that are held in position in the framework A, so as to be capable of only a rotary movement. They may be confined to a rotary movement by stops b⁷ extending inwardly from the adjacent side piece of the framework. By thus combining the rods and their cranks with the rotary rings the hackling-pins will be maintained at all times in vertical positions, although they revolve around the axes of the shafts B⁵.

The rests b' b² b³ consist of flat plate-like portions formed integral with the rods B' B² B³ or of plates attached to such rods, the ends being inclined upwardly so as to diverge from each other, the construction as a whole constituting upwardly-flaring supports for fibrous material. From the flat body or center portions of these rests the hackling-pins extend upwardly. The hackling-pins may be of the usual or any suitable form. These circular sets of rods are intended to be driven at different speeds and successively faster from one end of the machine to the other. Combined with these circular sets of rods are rollers C' C² C³. One pair of rollers, C', is arranged before the first set of rods B'. The fibrous material to be drawn or combed is introduced between this pair of rollers and passes from them to the rests and hackling-pins of the first set of rods B'.

Another set of rollers C² is arranged intermediately of the first set of rods B' and the second set of rods B². These rollers receive the fibrous material from the first set of rods and deliver it to the second set of rods.

The third pair of rollers C³ is arranged beyond the third set of rods B³.

The several pairs of rollers are intended to be driven at different speeds, and, moreover, each set of rods succeeding a pair of rollers is intended to move more rapidly than such rollers, and each set of rollers succeeding a set of rods is intended to move more rapidly than the rods. To be more explicit, the set of rods B' is intended to have a greater surface speed than the surface speed of the first pair of rollers C', the second pair of rollers C² are intended to move at a greater surface speed than the first set of rods B', the second set of rods B² are intended to move at a greater surface speed than the second pair of rollers C², the third set of rods B³ are in-

tended to move at a greater surface speed than the second set of rods B², and the third pair of rollers are intended to move at a greater surface speed than the third set of rods B³. Owing to this the hackling-pins of the different sets of rods will draw or comb out the fibrous material against the resistance offered by the hackling-pins of another set of rods or offered by a pair of rollers.

The pairs of rollers C¹ C² C³ are journaled in bearings arranged in housings formed in brackets C erected upon the side pieces of the framework A.

The gearing employed to secure the desired speeds may be of any suitable kind—as, for instance, a train of gear-wheels D meshed together and driven from one of the shafts of the last pair of rollers C³, such shaft being made to serve as a driving-shaft for the machine. From the last pair of rollers C³ the fibrous material may be delivered in cans for doubling a number of lots of similarly-treated fibers to secure uniformity in the finished product.

The hackling-teeth may be made of various sizes and shapes, according to the purpose of the machine—as, for instance, whether it is used as a breaker or spreader or a drawing-frame or a part of a spinning-jenny.

It will be seen that by my improvement I produce a very much more compact machine

of a given capacity than is possible where the pins are arranged on hackling-chains or upon bars propelled by screws.

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

1. The combination of a number of sets of rods, heads or disks in which these rods are journaled, cranks fitted to said rods, crank-pins extending from the cranks, and parts capable of only a rotary movement in which the crank-pins are journaled, the rods being provided with pins, and each set of rods being driven at a different speed than any of the other sets, substantially as specified.

2. The combination of a number of sets of rods, heads or disks in which these rods are journaled, rests for fibrous material secured to the rods pins extending from the rests, cranks fitted to the rods, crank-pins extending from the cranks, and parts capable of only a rotary movement in which the crank-pins are journaled, each set of rods being driven at a different speed than any of the other sets, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. H. SISUM.

Witnesses:

ANTHONY GREF,

WILLIAM A. POLLOCK.