D. S. TIBBALS.

Machines for Making Oakum.

No. 196,059. Patented Oct. 9, 1877.

Fig. 1.

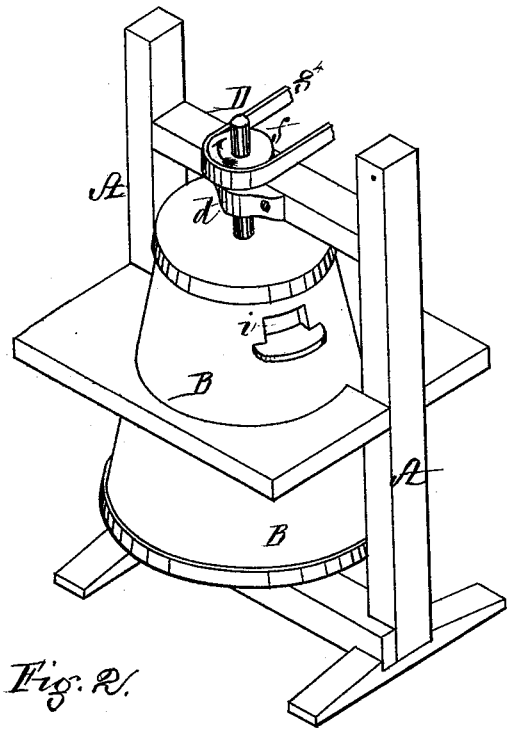


Fig. 2.

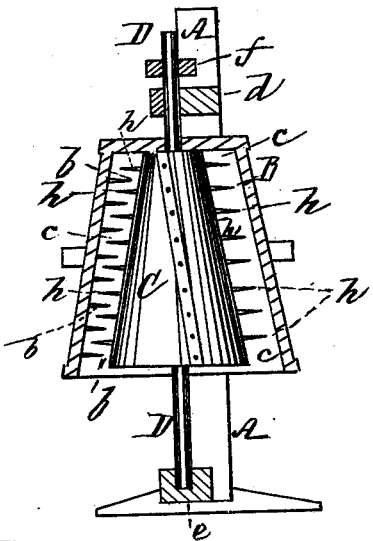
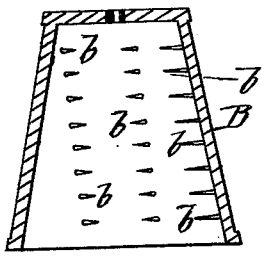


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL S. TIBBALS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING OAKUM.

Specification forming part of Letters Patent No. **196,059,** dated October 9, 1877; application filed August 21, 1877.

To all whom it may concern:

Be it known that I, DANIEL S. TIBBALS, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Machine for the Manufacture of Oakum, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a vertical section through the center of the same. Fig. 3 is a vertical section through the outer casing, the drum being removed.

In the ordinary process of making oakum from old rope, &c., the stock, before being subjected to the operation of carding, is first placed in a vat of boiling water, which is agitated by paddles or otherwise. This process is objectionable, as it injures the fibers and shortens the staple to a considerable extent, a portion of the stock being reduced to small pieces, which become separated and sink to the bottom of the vat, after which they cannot be utilized and are of no value. Furthermore, the stock is injured and its durability lessened by the action of the boiling water, which extracts the tar and juices of the rope, and thus greatly impairs the quality of the oakum produced.

My invention has for its object to overcome these difficulties, and enable me to produce a better quality of oakum; and consists in a machine composed of a conical casing, within which rotates a correspondingly-shaped drum, a space being left between the two for the passage of the stock, which is fed in at or near the top of the casing, and is acted upon by a series of pins or teeth projecting from the interior of the casing and the exterior of the drum, the pins inclining in opposite directions and serving to tear the stock and separate the fibers, at the same feeding it down and out of the machine in a proper condition to be carded, the stock before being placed in the machine being subjected to the action of steam, which softens it, and facilitates the operation of opening the strands and separating the fibers.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the framework of the machine, within which is secured a circular casing, B, made in the form of a frustum of a cone, and provided on its interior surface with a series of sharp pins or teeth, *b*, arranged in rows slightly inclined to one side of a vertical plane. Within this casing B is placed a drum, C, of a shape corresponding to that of the casing B, but of considerably less diameter, in order to afford a space, *c*, between the two for the passage of the stock. This drum C is secured upon a vertical shaft, D, running in a bearing, *d*, and supported at its lower end in a step, *e*, a pulley, *f*, being attached to the upper end of the shaft, over which passes a belt, *g*, by means of which the drum is rapidly rotated.

The exterior surface of the drum C is provided with a series of sharp pins or teeth, *h*, similar to the pins *b*, and like them arranged in rows slightly inclined to one side of a vertical plane, but in a direction opposite to that of the rows of pins *b*.

The pins *b h* are of such length as to lap each other, the pins *h* on the drum C being so arranged as to pass through the spaces between the pins *b*, and by inclining the rows of pins in opposite directions, as shown, the pins *b h* of two rows working together will act successively on the stock from the top to the bottom of the casing instead of all simultaneously, as would be the case if the rows of pins were arranged in vertical planes, and consequently less power is required to operate the machine.

The stock, (composed of old rope, &c.,) cut into suitable lengths, after having been softened by subjecting it to the action of steam, is introduced within the casing B through an aperture, *i*, at or near its top, and, falling into the space *c*, is instantly caught between the rows of pins *b h*, which, as the drum C is rapidly rotated, serve to tear it apart and separate the fibers, and at the same time carry it down and deliver it through the open bottom of the casing onto the floor in a perfect condition and ready to be carded, there being no loss of stock, as heretofore; and where my improved machine is employed a much better

quality of oakum can be produced from a given description of stock, for the reason that the immersing of the stock in boiling water, as heretofore, is dispensed with, and the injurious effects incident thereto thereby avoided.

I am aware that conical cylinders with rotating drums are old; but these have heretofore been provided with pins or teeth in vertical rows, a whole row acting simultaneously, while mine act successively on the stock from the top to the bottom of the casing.

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

In a machine for making oakum, the stationary conical casing B, provided with the inclined rows of pins *b*, in combination with the rotating drum C arranged within it, and provided with the oppositely-inclined rows of pins or teeth, substantially as and for the purpose set forth.

DANIEL S. TIBBALS.

In presence of—
P. E. TESCHEMACHER,
N. W. STEARNS.