

T. TEBOW.

Improvement in the Manufacture of Bagging for Cotton, &c.

No. 115,388.

Patented May 30, 1871.

Fig. 1.

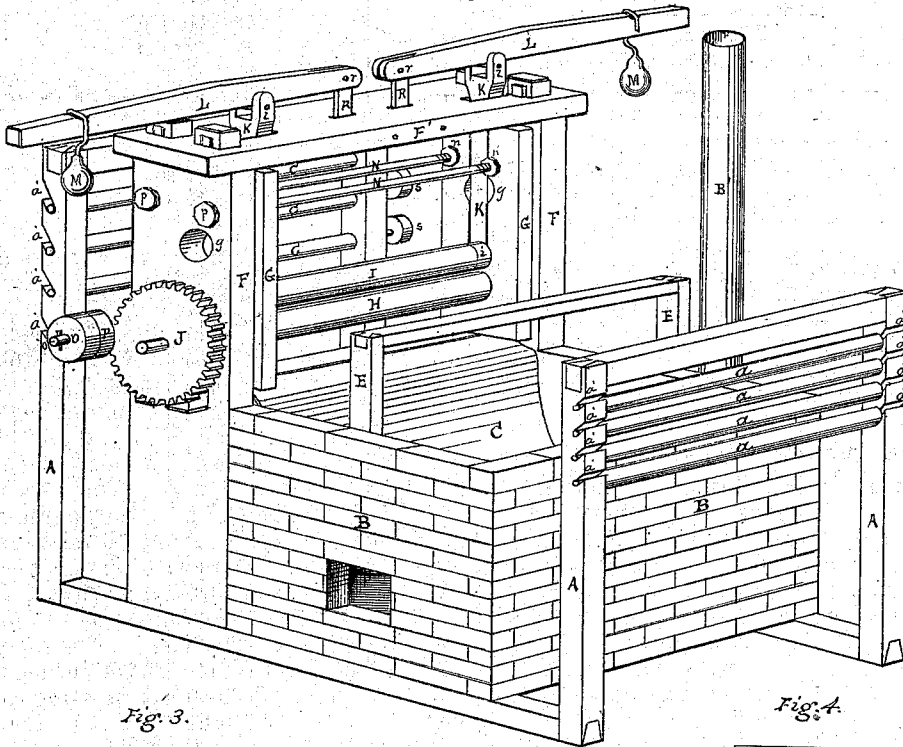


Fig. 3.



Fig. 2.

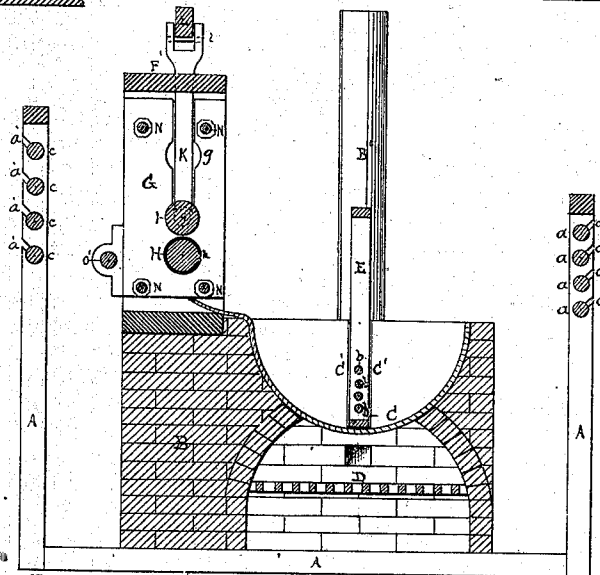
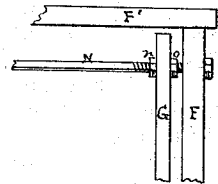


Fig. 4.



Witnesses
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IMPROVEMENT IN THE MANUFACTURE OF BAGGING FOR COTTON, &c.

Specification forming part of Letters Patent No. 115,388, dated May 30, 1871.

I, THEODORE TEBOW, of the city of Lexington, county of Fayette and State of Kentucky, have invented certain Improvements in Machines for Tarring Bagging, and a Process of Preparing Pine-Tar to be used in Tarring Hemp-Bagging, of which the following is a specification:

Nature and Objects of the Invention.

The first part of my invention relates to a combination of a kettle of peculiar form, in which the tar is boiled, with a vertical frame, in which is a series of rollers, under which a number of pieces of bagging may be passed and bathed in the boiling-hot tar at the same time, and the furnace by means of which the requisite heat may be furnished, as hereinafter described. The second part of my invention relates to a pair of pressure-rollers, operating one above the other, with devices for not only regulating the amount of pressure to be applied to the bagging which is to be passed between them to press out the surplus tar, but also to an inner frame, with co-acting devices, within the main frame, by means of which the upper pressure-roller is adapted to the pressing of pieces of bagging of various widths. The third part of my invention relates to a process of preparing the tar in such a manner that it shall thoroughly impregnate the fiber of the hemp and shall be deprived of its viscid or sticky character, so that it will not stick or the tar rub off in handling, and the bagging so made shall resist the action of moisture or decay.

Description of Accompanying Drawing.

Figure 1 represents a perspective view of a machine embracing my improvements; Fig. 2 represents a cross vertical sectional view of the same; Fig. 3, a detached central sectional view of the upper feed-roller; and Fig. 4, a front view of the top portion of the inner and outer frame, showing how the machine may be made to impregnate pieces of hemp-bagging of different widths by means of washers placed upon the axle of the upper roller.

General Description.

The kettle, *c*, has perpendicular sides, as shown, and vertical grooves *c'* in each side, for the uprights of the roller-frame to slide in.

The rollers *b b b b* may be more or less numerous, according to the depth of the kettle. It appears from Fig. 2 that only a small portion of the bottom of the kettle is exposed to the fire of the furnace. If such were not the case, then, when the tar in the kettle should become low, the walls of the same might become so hot as to take fire and burn the tar. Under each roller *b b b b* passes a piece of bagging from the rollers *a' a' a' a'*. The office of the frame *E E* is merely to keep the bagging deeply submerged in the tar until it shall be thoroughly saturated therewith before it shall be passed between the pressure-rollers *I H*, and the frame may be kept down by the hand of the operator, or otherwise. *D* is the grate; *A A A*, the main frame; *B*, the furnace; and *B'*, the chimney. The lower pressing-roller *H* journals in the uprights *F F*, and upon the left end of its journals has the cogged wheel *J*, which may be turned by a small pinion on the rod *o'*, which pinion may be turned by the fast pulley *P*, having a band over the same. The roller *H* turns the upper roller *I* in a contrary direction, and, by means of the yokes *K K* and the levers *L L*, the inner ends of which are attached and fastened at *R R*, and weights *M M*, the pressure of this upper roller upon the lower one may be regulated at will, so as to leave more or less of tar in the bagging, as may be desired. A half-pound of the former to a square yard of the latter is considered the best proportion. In order to regulate the length of the upper roller according to any width of bagging, the yokes *K K*, which pass down through the inner uprights *G*, through vertical slots in the same, may be drawn upward and out of the frame, and then roller *I* may be raised and taken out at either of the openings *g g*, and washers *i* taken off or put onto the journal *I'* of that roller, so as to make the roller long or short, as the width of the bagging may require. The iron rods *N N N N*, by means of the screw-nuts *n n n n*, arranged on each side of the uprights *G G*, hold that part of the frame together and regulate the distances between these uprights. The bagging, when passed between the pressure-rollers, is received and wound upon *c c c c*, which turn in open journals *a' a' a' a'*, in the rear uprights *A A*, and is then dry and ready for use.

Much of the success of the machine depends

upon the preparation of the tar before it is applied to the bagging.

My improvements are intended only for bagging made of large strands of American or Russian hemp or flax for covering bales of cotton. They do not contemplate the covering or coating of the bagging to turn water and air, but the thorough impregnation or saturation of the fiber of the hemp or flax to prevent its decomposition by mold or decay.

I use American and Russian tar together, but either will answer. A good compound is made of three parts American and one of Russian pine-tar. The object of using the latter is to secure a lighter and more lively color to the bagging after it has been tarred.

A pound of rosin to the kettle full of tar assists to give a bright color to the bagging, and causes the same to dry quickly; for instance, a pound of resin to four hundred gallons of tar. In these proportions I fill the kettle to the extent of five-sixths of its depth, and start a fire in the furnace, and when the tar comes nearly to a boiling point and has risen in the kettle, say, half-way from the original surface to the top, the fuel should then be at once withdrawn, or else the tar would rise and run over. The tar then sinks to its original level, and then the fire should be again started and increased gradually until it boils, and should boil from one and a half to two hours, according to the thickness of the tar; the thicker it is the longer it has to be boiled. The result of the boiling is that the tar becomes nearly as thin and fluid as water, and loses its viscid or sticky character, so that the bagging, when tarred, will not color a white handkerchief when rubbed against it. Were the tar not so boiled as to become fluid and applied boiling hot, it would not penetrate thoroughly the fiber of the bagging, as it should do. By my process the bagging is left supple and of a light and pleasant color. But the boiling or cooking process is one that requires very judicious management; for if the fire is not withdrawn, as before suggested, when the tar rises in the kettle, it will run over and waste, and as often as it rises the fire must be withdrawn. But when it becomes in proper condition it will boil without rising at all. As

a matter of course, when the stones or bricks have become heated less fuel must be used.

The difficulty in making the tar boil in every instance, without rising, grows out of the fact that the tar is often heated too quickly, and how slowly it should be heated depends greatly upon its thickness. Therefore the operator must consider all these conditions, and stir the tar during the process of heating, in order to secure a uniformity of temperature as near as may be throughout the whole mass.

I will suggest, further, that, as the tar becomes thin and fluid from the heating, the sand, more or less of which is usually found in all tar, as well as other foreign and heavy matters therein, will settle upon the bottom of the kettle, and prevent the ready communication of heat therefrom to the tar.

Such matters may be removed by the use of a skimmer, having its bottom perforated with holes, and having a long handle, because such foreign matters and the sand will form a crust or cake, which the skimmer will hold while the tar runs through the holes in the bottom of the same.

Claims.

I claim as my invention—

1. The combination of the kettle C with its two vertical slots, C' C', and perpendicular sides, the furnace and the frame E E with its rollers *b b b b*, constructed substantially as and for the purpose described.

2. The combination of the pressure-rollers I H, the inner frame composed of the uprights G G, the yokes K K and openings *g g*, the rod *o'* with its pinion and pulleys, and the rods N N N with their nuts *n n n n*, constructed and operated substantially as and for the purpose described.

3. The described process of preparing the tar for tarring hemp and flax bagging, substantially as above set forth and described.

4. The improved cotton-bale covering herein described, namely, coarse-strand bagging impregnated with tar by the process described, substantially as set forth.

Witnesses: THEODORE TEBOW.

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