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Improved Railway Journal Boxes Wanted.

The present method of applying oil to the axles of railway cars is to take a quantity of fibrous material like waste or rags and saturate it with the lubricating material, and stuff the space in the box underneath the axle full of this saturated material, so that it is in contact with the journal. At the back of the box there is a more or less ineffectual attempt at making a tight joint to prevent oil from leaking out and dust from getting into the box. That these attempts are ineffectual is shown by the condition of the wheels, which in most cases are covered with grease. There must be great uncertainty about the packing waste being in contact with the journal after the box has run a long distance and the contents of the box have been subjected to the consolidating effects of the jar and concussions of the road. This is, perhaps, the best practicable means of effecting this purpose; but it must be admitted that it is a very rude contrivance for doing it.

Our object in calling attention to the defects in the means employed and the methods adopted for lubricating cars is to account for the constant and almost universal annoyance from hot boxes. A record kept on one line showed that in one month there were 3,034 hot boxes. We take the foregoing from the *Railroad Gazette*. It is indicative of the great demand there is at the present time for improvements in railway journal boxes. The aggregate length of American railway lines is now about eighty thousand miles. The consumption of oil, grease, and waste for lubricating car wheels is enormous; and the delays, accidents, and damages from hot boxes very great. It does seem as if some ingenious mind could invent a simple improvement that would obviate all these evils. On this head our cotemporary makes the following suggestions:

"The lubrication of railroad cars is a much more complicated subject than at first sight appears. Not only is it a question of the quality of the lubricants used, which is of itself still involved in much darkness, and the secrets of which will perhaps not be revealed excepting to the earnest interrogations of mechanical, chemical, and microscopic science, but there are questions of material and proportions of the journal and journal bearing, and construction of the oil-box itself. Let any one talk with a manufacturer of journal bearings for cars, and he will learn that there is very great diversity of opinion with reference to the material and methods of manufacture of such bearings. Brass compounded in various ways, phosphor-bronze, Babbitt metal, lead, etc., all have their advocates. The manufacturer will tell you that, if railroad companies were only willing to pay a fair price for good bearings, there would be very much less difficulty with lubrication. Now, undoubtedly the material which forms the bearing is a very important element, but it is obvious that, as the journal rubs against the bearing, the quality of the former is just as important a factor in the question of friction as that of the bearing is.

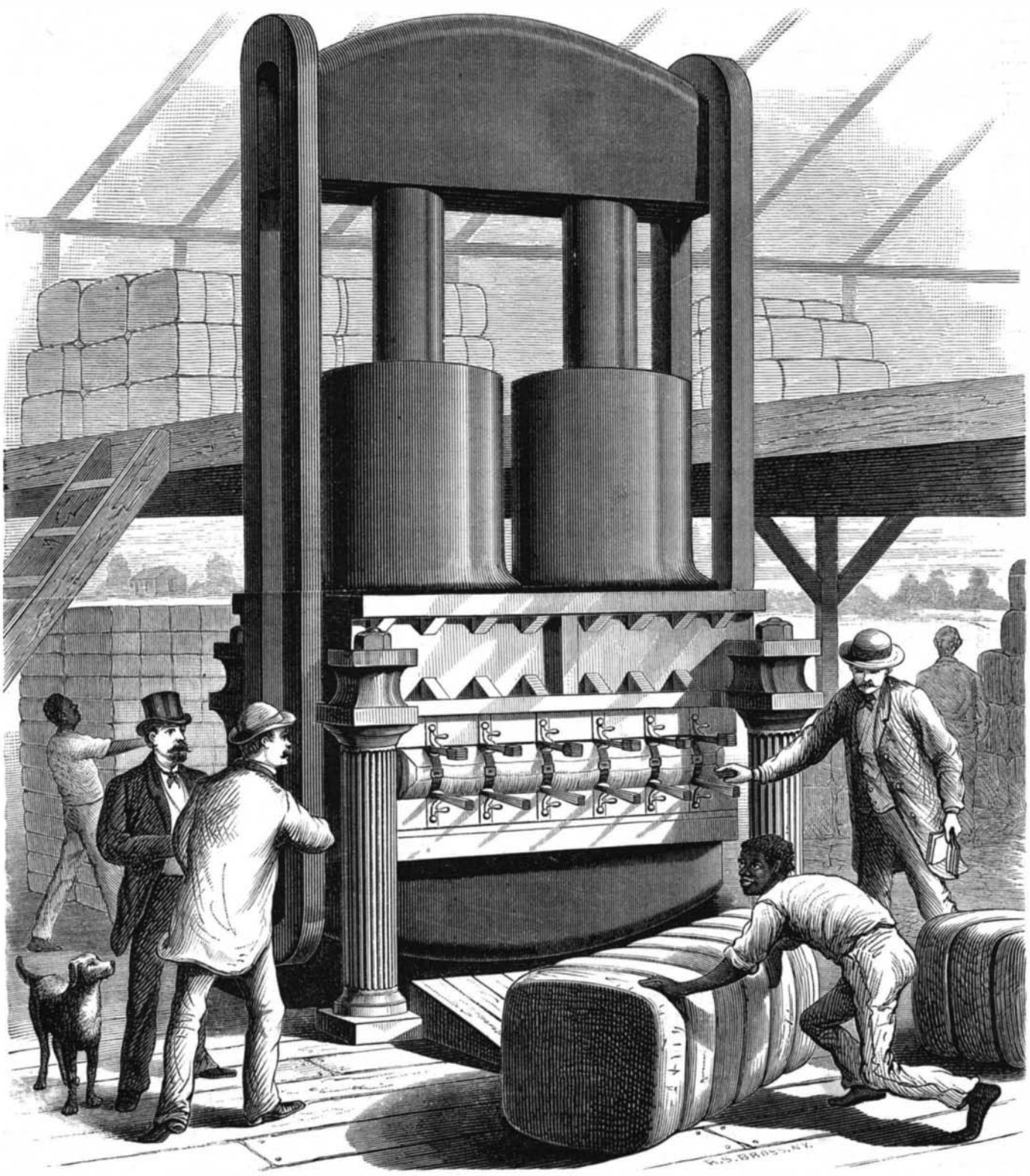
IMPROVED METHOD OF COMPRESSING COTTON.

Since the close of the late civil war, much attention has been given to the problem of putting the cotton crop of America into such shape as to give vessels and rail lines the greatest possible revenue from its carriage.

To a great extent this has been brought about by the fact that since the above period railroads have been active competitors for this business. Prior to the war no cotton was carried by rail from the South direct to spinners, Northern markets, or for export; while to-day it forms a very important element in the business of our great trunk lines. Not only is cotton now carried overland direct to our American mills, but in all important centers bills of lading are given by the rail lines to all points in Europe, and the exchange is sold against these bills to local banks at these points. Memphis, Nashville, St. Louis, Montgomery, Selma, and other cities afford buyers and shippers export facilities to-day equal to New Orleans or Savannah. For the crop year just closing it is no exaggeration to say that the trunk lines of the North have carried 1,000,000 bales. This revolution has been brought about by the compress.

In 1865, a car load of compressed cotton consisted of 30 to 35 bales. To-day, from 40 to 45 bales, weighing 20,000 lbs. is the standard. Low rates and the most rigid economy are now compelling an advance in the last named tonnage. Cars capable of carrying 25,000 to 30,000 lbs. are replacing the old standard of 20,000 lbs. Improved road beds and bridges are making these loads safe and economical to move. And now the rail lines are demanding heavier loads.

The object of the invention herewith illustrated is to accomplish this point. Band stretchers, pulleys and tighteners, and devices of such nature usually require special fastenings, thus compelling the compress to throw out the buckles that come on the cotton and substitute others adapted to the tightening mechanism. This is expensive. The use of the stretcher involves considerable loss of time and may reduce the work of the compress from 70 to 35 bales an hour.



BURR'S IMPROVED METHOD OF COMPRESSING COTTON.—Fig. 1.

Mr. Burr's method, it is claimed, allows the employment of any fastening in use, and, instead of reducing the capacity of the compress, increases it. The bed or saddle of the press and, B, the follower or bottom block, to which the platens are attached, are shown in Fig. 1. These platens have fixed ribs, A, Figs. 2 and 3, running transversely across their faces. At B are blocks placed in the spaces between the ribs and having a thickness equal to the height of the ribs and a length equal to the width of the bed. These blocks are provided with two or more guide rods, C, that pass through the plates, D, and are secured by the check nuts, as shown. These nuts, besides acting as guides, regulate the height to which the blocks, B, rise. Recesses are formed in the blocks, B, to receive springs of rubber, E. These springs surround the guide rods, and bear the blocks upward with such force that their combined action is more than sufficient to hold up the superimposed bale. Twenty to thirty bands cut to proper length are fastened by twine into a snug bundle and the buckles fastened on the ends, as shown in Fig. 4. These bundles are laid up-

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