(No Model.)

H. J. MILLAR.

TRANSPORTATION CASE FOR COILED LEAD PIPE.

No. 384,327. Patented June 12, 1888.

Fig 1.

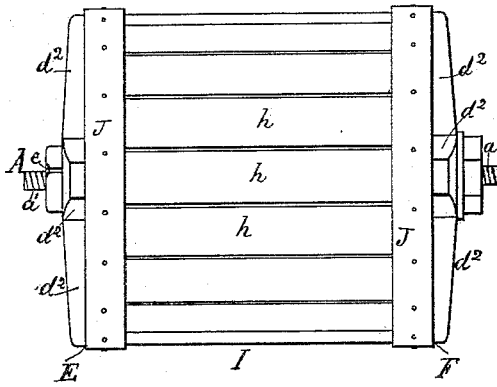


Fig 2.

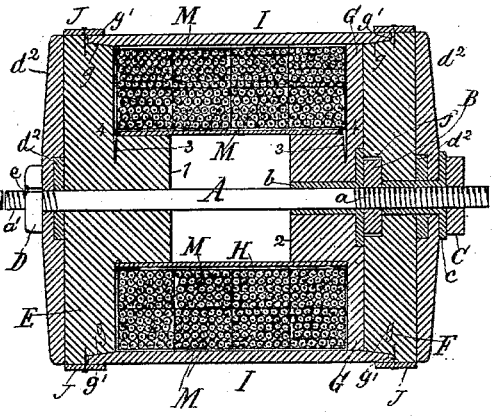


Fig 3.

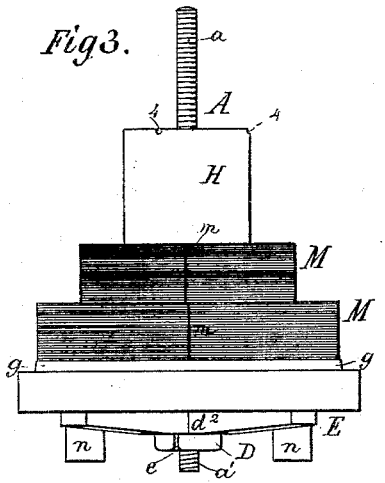


Fig 5.

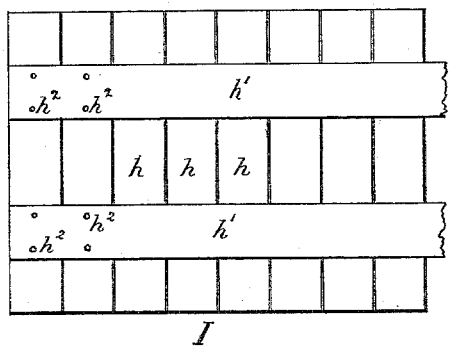


Fig 4.

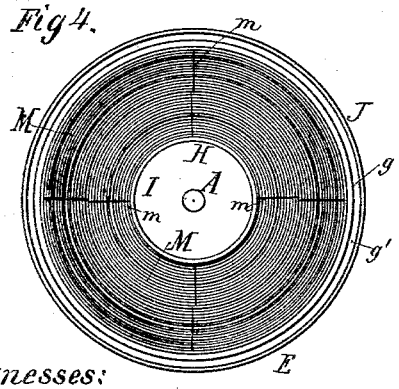


Fig 6.

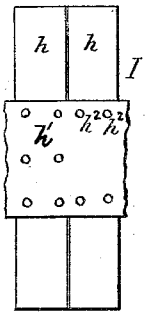
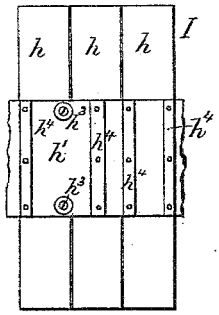


Fig 7.



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UNITED STATES PATENT OFFICE.

HENRY J. MILLAR, OF UTICA, NEW YORK.

TRANSPORTATION-CASE FOR COILED LEAD PIPE.

SPECIFICATION forming part of Letters Patent No. 384,327, dated June 12, 1888.

Application filed February 6, 1888. Serial No. 263,096. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. MILLAR, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Packing Transportation-Cases for Coiled Lead Pipe; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention consists in certain novel constructions, arrangements, and combinations of the parts composing my improved case for transportation of coils of lead pipe, as will be hereinafter described and specifically claimed, whereby sections of lead pipe put up into coils of a given quantity or different given quantities may be packed concentrically around a longitudinal tie-axle of the case, and when desired a section of the largest diameter may be slipped over another section of smaller diameter, and the ends of the respective sections may abut against one another and the heads of the case, or one section may abut by one of its ends against one head of the case, while its other end abuts against another head of the head. My improved packing and transportation case also affords great safety of carriage from one place to another, lessens labor of handling, and reduces expense for freight, and, while it admits of ready separation for purposes of packing and unpacking the coils of lead pipe, its construction is such that serious injury and rapid wearing out from frequent separation for the purposes named will not be experienced, and at the same time convenience for any repairs that may be necessary is afforded.

In the accompanying drawings, Figure 1 is a side elevation of my improved packing and transportation case ready for shipment. Fig. 2 is a longitudinal section of the same, illustrating the way two layers of coils of lead pipe may be packed in the case. Fig. 3 is a side elevation of a portion of the case set up in position for being packed. Fig. 4 is a top view of Fig. 3. Figs. 5, 6, and 7 are plan views of short broken sections of the flexible outer and closing portion of the case, showing different ways of fastening the stays to the connecting belting or listing.

In the drawings, A represents a central tie bar or axle, which in this instance, by the aid of nuts B and C and a collar or shoulder, D, serves the purposes of a clamping-tie between the several main constituent parts E, F, G, H, and I of the improved packing and transportation case shown in the accompanying drawings, the said parts being fitted around said tie bar or axle, as will now be more fully described.

The shaft A is screw-threaded, as at *a*, or otherwise suitably, and its ends project considerably beyond the heads of the case, and the heads E F G are fitted upon it by means of metal tubular bushings, as *b* and *c*, in the manner shown. The two outer heads, E F, are formed with strengthening cross-cleats d^2 in a well-known manner of staying parts of structures, and the head E is kept from turning and slipping longitudinally on the tie bar or axle by a shoulder-pin, *e*, let into a groove in the collar D, as shown. The collar D may be either turned on the shaft or secured by a screw-thread, *a'*, or welded or otherwise secured thereon.

On the inner face of the head E a short hub, 1, is formed, and on the inner face of the intermediate head, G, is a similar hub, 2, while on the periphery of each of these hubs, about where they start out from the heads E and G, narrow stop-lugs 3 are provided. Between the heads, upon the hubs, the metal abutment and spacing-reel cylinder H, which is open at both ends and provided with notches 4 corresponding to stop-lugs 3, is fitted and kept in place from turning by the lugs 3, fitting into the notches at the two ends of the cylinder.

In the present illustration of the packing and transportation case it is not material whether the cylinder is held by lugs 3 or not.

The inner head, G, should be allowed to slip freely over the screw-thread *a* of the tie bar or axle A when the nuts C and B are turned back and removed from the said axle, and it and the cylinder H are firmly bound together by means of the nut B, said nut bearing against the metal bushing or wearing-tube *b* of head G when screwed up. The outer head, F, should also be formed with its bushing *c* large enough to slip freely over the screw-thread *a*, and on its inner face it is counterbored, so as to form socket *f* for the reception of the nut B when the head F is slipped home and

confined by the nut C. The nut B is intended to be in thickness equal to or a little greater than the depth of the socket *f*, and thus crushing of the inner head, G, by the outer head, F, by a too violent screwing up of the nut against said outer head, is rendered impossible, for the nut by bearing against the tubular bushings of the heads F and G will receive any undue strain caused by screwing up the nut C. The heads E and F are chamfered off or formed with a beveled or other suitably-shaped bearing-surface, as at *g*, and around each of the heads, so as to extend over the beveled or other suitably-shaped bearing and abutting surface or chamfered portion, a hoop, J, of copper or other suitable metal, is nailed, screwed, or otherwise suitably fastened. By thus constructing the heads endless recesses *g'* are formed for the reception of the chamfered ends of the staves *h*, which form the barrel-like inclosing portion I of the packing and transportation case. In the manufacture of the inclosing portion I a suitable number of staves, *h*, are placed edge to edge and fastened to a flexible band or bands, as *h'*, which bands are of a length equal to the diameter of the chamfered parts of the head. The fastenings may be rivets, as h^2, or screws and washers, as h^3, or rivets and strips h^4, or any other suitable device. The flexible inclosing portion I thus formed of staves and bands united, as described, serves as a protection to the coils of pipe, and it occupies the position shown in Figs. 1 and 2 when the coils of lead pipe are packed in the case for transportation.

The coils of pipe M are wound in nearly cylindrical form and tied, as indicated at *m*, in the usual manner, and to pack them in my cases the heads F and G and the outer inclosing portion, I, are removed by unscrewing, first, the nut C from the tie bar or axle A, slipping off the head F, and taking away the portion I; second, by unscrewing the nut B from the said tie bars or axles and then slipping off the head G. The remaining part of the case is set upright upon temporarily-provided skids or blocks *n n*, as illustrated in Fig. 3, and in this position the tied sections of coiled pipe are slipped down over the cylinder H. The diameter of the different coils and the sizes or gages of the pipe of the different sections may be variant.

The diameter of the coils may be proportioned so that one series of coils of a given diameter may be slipped first upon the cylinder and fitted snugly, and the next diameter may be such that the sections can be slipped upon the first series of coils and fit the same snugly, and at the same time fit closely the inner surface of the barrel-like inclosing portion I when the said portion is set in position, as illustrated in Fig. 2. The case being thus supplied with the proper number of coiled sections of pipe for filling it, the head G and the nut B are readjusted to their positions and the nut screwed tight home. Now the inclosing portion I is set in the endless recess *g'* of the head E, and the head F and nut G are readjusted to their positions and the nut screwed tight home, so as to bind the parts firmly together.

The tie bars or axles A are extended beyond the ends of the cases, as shown, and thus serve also as a means by which the packing and transportation cases can be hoisted from one story to another by means of a sling, with rings to slip over the projecting ends.

The hoops J, which may be either flat, oval, or half-round in cross-section, while serving as the means for aiding in forming the endless recesses *g'* for the reception of the ends of the staves of the portion I, also serve for protecting the ends of the staves and for strengthening the heads, and, together with the cross-cleats d^2, prevent splitting of the heads. The recesses *g'* may, if desired, be formed by cutting circular grooves in the heads some distance inside the hoops.

The improved cases herein described are intended to be the property of the lead-pipe manufacturers, and will be shipped back by the dealers when the coils of pipe have been taken out of the same, which is done by removing the heads F and G in the same manner as when the parts, as hereinbefore described, were removed for the purpose of packing the coils in the case.

The barrel-like form of my packing and transportation cases will effect considerable saving in freight, as they can be shipped in that form as fourth-class freight, thus causing a reduction of from, say, twenty-five cents to one dollar on each case, according to the weight of the cases and distance carried.

I contemplate in some instances dispensing with the cylinder H and placing the coils of lead pipe around the tie bars or axles and between the heads E and G; also to dispense with the hubs 1 and 2, and to have the coils of lead pipe come in contact with tie bars or axles. I also would state that the counterbore *f* for the nut B, the extensions of the tie-axle beyond the heads of the case, and the flexible outer covering, I, fitted in recesses of the heads, are intended to be used in connection with the central tie-tube claimed in my application, No. 263,325, filed February 8, 1888, and therefore these parts are not necessarily confined to the tie bar or axle herein shown.

What I claim is—

1. The packing and transportation case comprising in its construction a central screw-threaded tie bar or axle, A, provided with a stop collar or shoulder, D, heads E G F, nuts B and C, and protecting inclosing portion I, substantially as and for the purpose described.

2. The combined packing and transportation case comprising the cylinder and inclosing body portion, two outer heads, and an intermediate head, one of which outer heads and the intermediate head being arranged to slip away from the other outer head for the insertion of the coils of pipe, substantially as described.

3. The combination, with the screw-threaded

tie bar or axle A, shoulder D, heads E and G, and nut B, of the head F, formed with the counterbore or socket *f*, and the nut C, substantially as and for the purpose described.

4. The combination, with the body portion, of the heads E and F, chamfered or formed with a bearing and abutting surface at *g*, and provided with hoops which aid in forming endless recesses between themselves and the chamfered or bearing portions of the heads, substantially as and for the purpose described.

5. The combined packing and transportation case comprising the cylinder, an inclosing body portion formed of staves joined together by flexible connections, two outer heads, and an intermediate head, one of which outer heads and the intermediate head being arranged to slip away from the other outer head for the insertion of the coils of pipe, substantially as described.

6. The combination of the outer inclosing portion, I, of the packing and transportation case, formed of staves flexibly connected, except at one edge of each of the last staves, with the outer heads, E, F, and G, cylinder H, a screw-threaded tie axle or bar, A, having shoulder D, and the nut C, substantially as described.

7. The body portion I of the combined reel and transportation-case, formed of staves connected together by flexible connections applied wholly on the inner surface of the staves with no portions of the connections exposed externally of the case and liable to injury by coming in contact with objects over which the case may be rolled, substantially as described,

In testimony whereof I hereunto affix my signature in presence of two witnesses.

HENRY J. MILLAR.

Witnesses:

JOHN MACGILL,

LEONARD FLEISHMAN.