G. BRODIE.

Cotton-Bale Ties.

No. 151,831. Patented June 9, 1874.

Fig. 1.

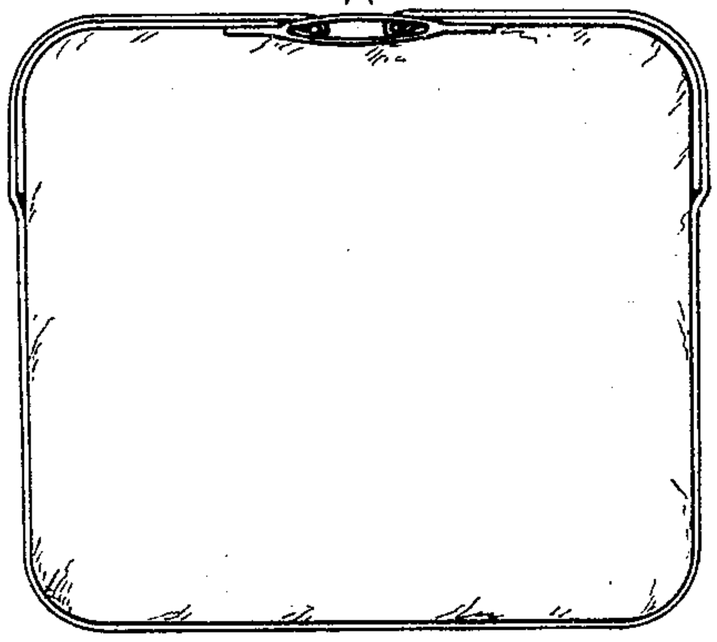


Fig. 2.

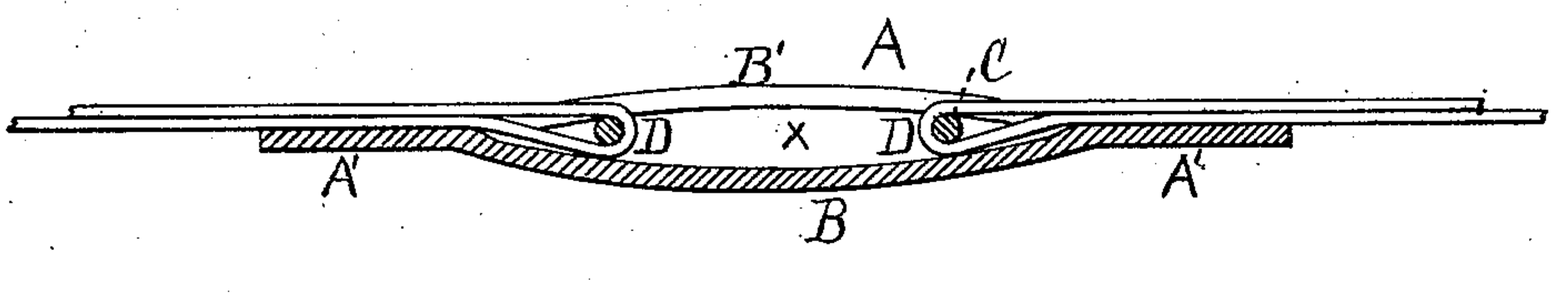


Fig. 3.

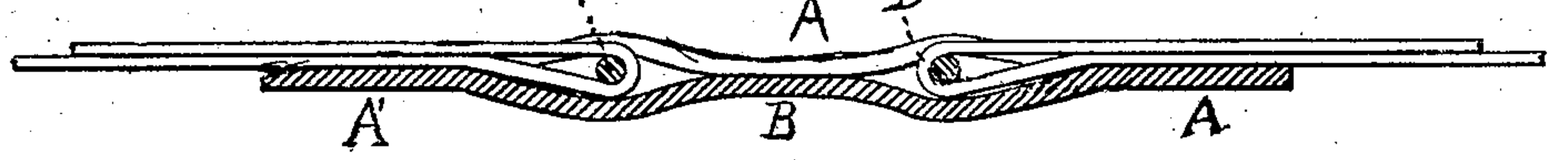
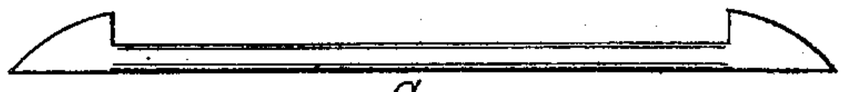


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE BRODIE, OF PLUM BAYOU, ARKANSAS.

IMPROVEMENT IN COTTON-BALE TIES.

Specification forming part of Letters Patent No. **151,831**, dated June 9, 1874; application filed September 18, 1873.

To all whom it may concern:

Be it known that I, GEORGE BRODIE, of Plum Bayou, in the county of Jefferson and State of Arkansas, have invented certain Improvements in Bale-Ties, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon, making part of this specification, in which—

Figures 1 and 3 are vertical sectional views of my tie, Fig. 3 showing the tie itself, while Fig. 1 shows the tie applied to a bale. Fig. 2 is a vertical sectional view of my tie. Fig. 4 is a side view of the fastening-pin.

My present invention is an improvement on a style for fastening metallic bands around cotton-bales, and which is embraced and claimed in the patent issued to William Field, August 17, 1858, No. 21,190, and which, as assignee, I owned. The fastening referred to consisted in securing the looped ends of the band over a pin or key, which had its bearings in the upper walls of the tie-plate. After much experience and practically testing all the different styles of fastening which are recognized as peculiarly belonging to the cotton-bale-tie art, I have ascertained that a fastening consisting of the loop, key, and slotted plate, as used by Field and claimed by him in the patent referred to, is the strongest fastening known to the trade; or, in other words, that, with this fastening, the ordinary metallic band or hoop will stand a greater resistance without breaking than with any other, and that, when the band does break, it is simply because the pressure to which it is subjected is greater than the natural strength of the metal can resist, and which, of course, no fastening, no matter what its merits are, can remedy. Yet, with all these advantages, there are disadvantages in connection with the Field arrangement of the plate, key, and loop which have prevented its going into general use, and which to avoid is the object of my present invention. It is well known to all familiar with the transportation and shipment of cotton that there is no article of commerce which is subjected to the same rough handling at the hands of stevedores and others as is the cotton-bale. The sudden fall or pitch and violent jar to which it is frequently subjected have constantly the tendency, more or less, to loosen the fastening, no matter what its character may be; and when such a fastening as Field's is once loosened, the tendency of the pin is to drop out, owing to the fact that it rests on the upper surface of the tie-plate, and without any bearing, except such as is exerted by the downward pressure of the band when called upon to resist the expansive force of the bale; and when, for any reason, this is overcome, and the band becomes at all slack, there is nothing to prevent the pins dropping out; and, besides this positive want of security, there is another great disadvantage in the fastening of Field's referred to: The pin which secures the head of the loop having its entire bearing above the plate, it projects beyond the plane of the surface of the bale, which is most objectionable, as, in turning and moving the bales, the fastenings of the one catch in and tear the bagging of the bales with which it is brought in contact. Now, in my improvement, these difficulties are all remedied. In the first place, I so form the tie-plate as to provide positive socket-bearings for the pin, and, at the same time, avoid cutting away any portion of the plate. I cut longitudinally through the plate, and of suitable length, parallel slits, which leaves a broad uncut wall. The center piece I bulge upward and the lateral walls downward, or vice versa, which provides double oval socket-bearings for the pin. The pin, after being inserted in the loop, rests and secures the loop on the depressed center piece of the tie, its ends being secured under and protected by the side walls of the tie, and secured in forked or socket bearings between the center piece and walls. As an additional security, I use a key with angular inclined shoulders at its end, which serves the more securely to lock the pin within the fastening. After the fastening has been effected with nippers or pinchers, it is easy, at the center of the tip-plate, to so press the walls and center piece together as to form, as it were, a continuous wall or bearing around the key, which, in connection with its shoulders, and which prevents its lateral slipping, renders it impossible for the key to become detached. The great advantage of this arrangement is, that the plate is adapted to fasten the pin and secure the

loop without cutting away any portion of the same, as is the case with all slotted tie-plates; and thus I preserve the entire strength of the metal, and, besides, the pin is entirely protected, and is so fastened as to afford the greatest and most positive security under all circumstances.

The construction and operation of my invention are as follows: The tie-plate A is formed out of any suitable metal, and may be either square or of a rectangular form. Through the flat surface of the plate are cut two slits, which are parallel to each other, and are relatively so arranged as to divide the surface of the plate into a center piece, B, leaving broad, well-defined side or lateral walls B′ B′ and broad uncut sections A′ A′ at the ends of the plate. The flat plate A having been thus cut, the plate is pressed longitudinally, its center piece B being bulged downwardly and its side walls B′ B′ upwardly, as shown in Fig. 2, or vice versa, which leaves an oval opening or space, *x*, between the center piece B and side walls B′ B′, as clearly shown in the drawing. Any style of pin or key that is suitable to the purpose may be used; but I prefer a key of the form shown at C, Fig. 5—that is, a circular pin terminating in enlarged inclined heads, and which form effectively prevents all possibility of the key becoming disengaged by its lateral slipping out of the head of the hook or loop D on the end of the bend.

From the foregoing description, my improved fastening will be readily understood. The key is inserted in the head of the loop or hook D, the latter resting on the center piece B, and the ends of the key resting under the side walls B′ B′. The expansive force of the bale draws the pin to a position shown in the drawing, and secures it, as it were, in socket-bearings; the shoulders being turned down prevents its lateral slipping. After the ends of the band are fastened, as an additional security, if desired, the sides of the tie may be taken with either nippers or pinchers, and its center piece and lateral walls pressed together, as clearly shown in Fig. 4, and in which position it will be seen that the key C is most securely locked in, being secured, as it were, in an entirely inclosed bearing.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The plate A, having its surface cut, as shown, and its center piece B and sides B′ B′ bulged in opposite directions, key C, and the hooked or looped ends of the band D, when the whole are combined and arranged to constitute a bale-tie fastening, substantially as described.

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

GEORGE BRODIE.

Witnesses:
EDWIN JAMES,
JOS. T. K. PLANT.