(No Model.) 3 Sheets—Sheet 1.

W. ORR.

COTTON BALE COVER.

No. 443,619. Patented Dec. 30, 1890.

Fig. 1.

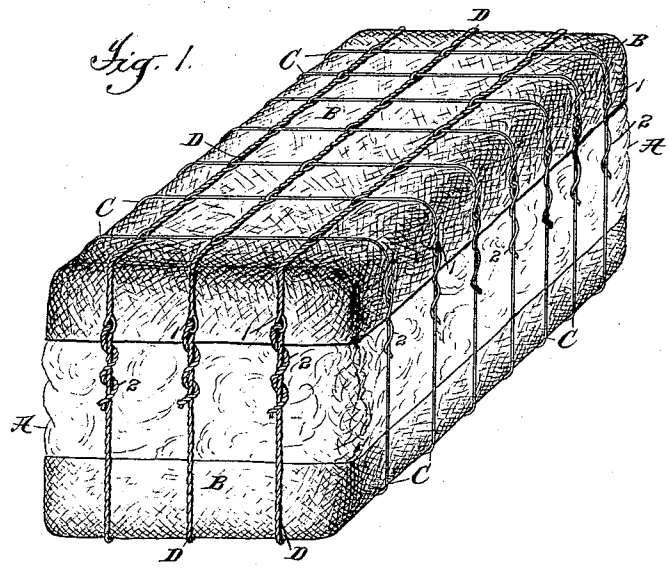
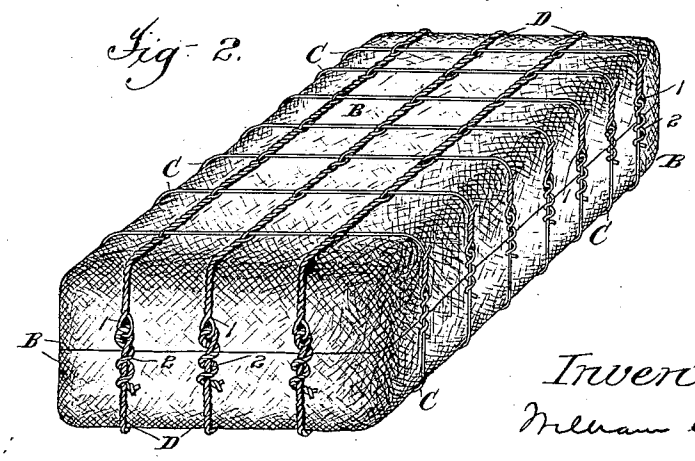


Fig. 2.



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W. ORR.

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Fig. 3.

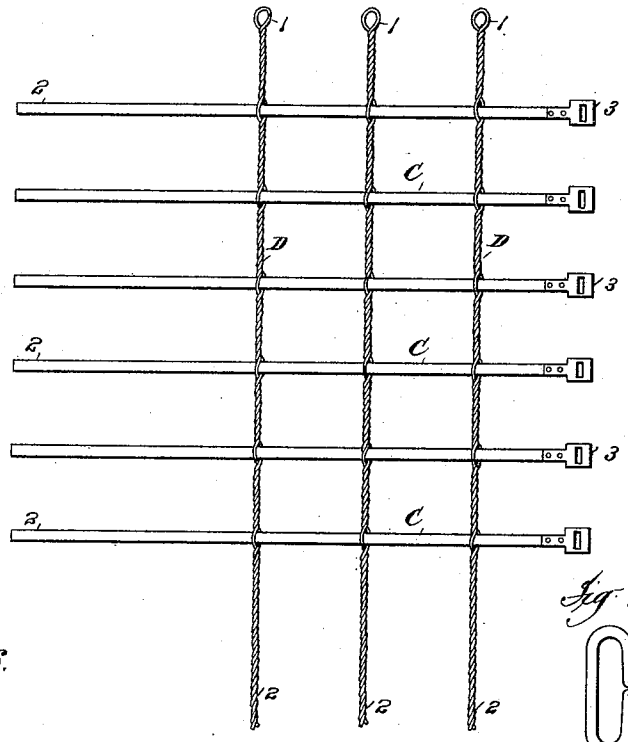




Fig. 6.

Fig. 7 Fig. 8.

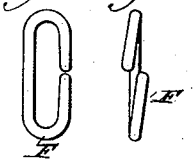
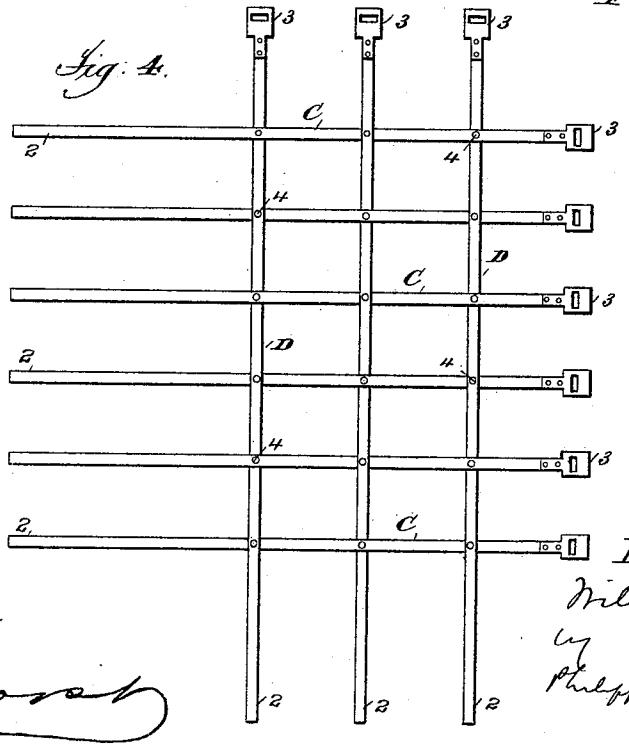


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

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Fig. 5.

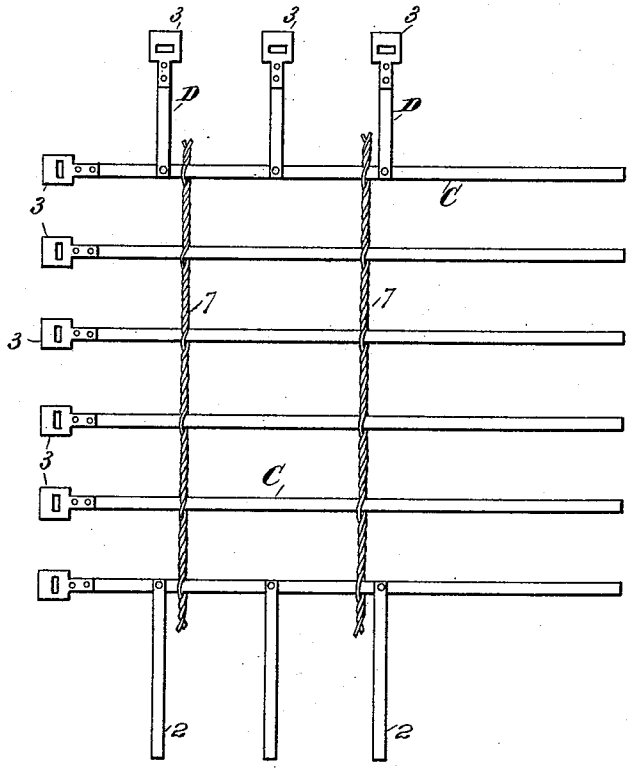


Fig. 9.

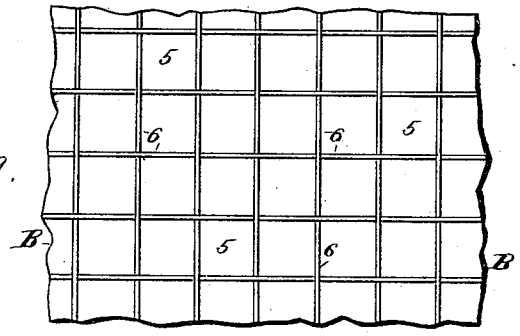
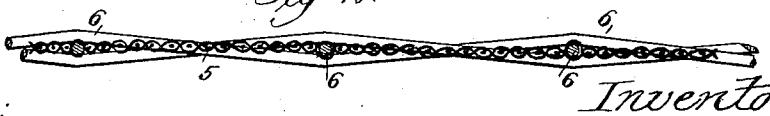


Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIAM ORR, OF TRENTON, NEW JERSEY, ASSIGNOR TO THE NEW JERSEY WIRE CLOTH COMPANY, OF SAME PLACE.

COTTON-BALE COVER.

SPECIFICATION forming part of Letters Patent No. 443,619, dated December 30, 1890.

Application filed March 24, 1890. Serial No. 345,046. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ORR, a citizen of the United States, residing at Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in Cotton-Bale Covers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to cotton-bale covers, its object being to provide an improved cover which shall be more simple, cheap, and convenient in use and shall hold the cotton fiber more securely in place and better protect it from waste and dirt than those heretofore employed.

The method of baling cotton generally employed heretofore is as follows: The inner cover consists of jute, cotton, or other suitable material woven in very coarse meshes and heavy strands, so as to have sufficient strength to stand the strain of the compressed fiber and of the rough handling which it receives. This inner cover is made in two separate pieces, one covering the top of the bale and the other the bottom, each being long and wide enough to lap over the sides and ends of the bale, the ends being covered entirely when the bale is first compressed at the ginning-mill, but the sides only partially covered, the edges of the two parts of the cover being adapted to meet on the sides of the bale when it is doubled at the compress, the two parts of the cover then overlapping at the ends of the bale and causing a waste of much material. To hold this cover in place, bale-ties, usually of strip-iron, are passed around the outside and fastened by buckles. These ties are put on while the bale is in the ginning-press and are passed through slots left for that purpose in the floor of the press and in the follower. These ties encircle the bale only in one direction, protecting only the top, bottom, and sides of the bale, but leaving the ends unprotected, except by the inner covering previously described, the two parts of which are sewed together along the ends of the bale. Thus the sewing of the inner cover must stand the strain upon the ends of the bale, and it is found that the ends of many of the bales burst out, and that the ties next the ends are frequently broken by the excess of pressure thereon. The ties usually employed are of sufficient length to reach entirely around the bale as it comes from the ginning-press, and it is found necessary to remove all or nearly all of them before the bale is put in the compress, as it is not possible to adjust such ties, if left on the bale, without cutting each tie and using an extra set of buckles. I avoid these objections by providing an outer jacket, by which the strength will be more evenly distributed over the whole of the bale, which may be more conveniently and cheaply applied, and which may be used for the bale as originally compressed at the ginning-press and doubled at the compress without removing the ties. To accomplish this I protect the inner cover and contained cotton fiber by an outer jacket of wires or metal strips consisting of two series of wires or bands extending at right angles with each other, one series covering the bale so as to protect the top, bottom, and sides, and the other series passing around the ends of the bale, this jacket being formed, preferably, in two parts connected by loops or buckles or in any other suitable manner.

I provide also an inner cover in two parts so constructed as to overlap the sides and ends of the bale equally, the edges of the two parts being adapted to meet on the ends and sides when the bale is finally compressed.

I provide also in connection with my outer cover or jacket an inner cover so constructed as to increase its strength and greatly diminish its cost by forming it of any suitable material having woven therein at certain intervals, preferably in both warp and filling, strands of much greater strength, thus enabling the inner cover to be made of very light and cheap material and still be of sufficient strength to withstand the rough handling to which the bale is subjected.

For a full understanding of my invention a detailed description will now be given, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a cotton-bale as it leaves the ginning-press provided with a cover of the preferred form of my in-

vention. Fig. 2 is a similar view of the bale after passing through the compress. Figs. 3, 4, and 5 show modifications of the jacket. Fig. 6 shows one form of buckle. Figs. 7 and 8 are side and front views of another form of buckle. Fig. 9 is a detail of a portion of the inner cover, and Fig. 10 is a section of the same on an enlarged scale.

Referring especially to Figs. 1 and 2, A represents the cotton fiber or lint, and B the inner cover, which may be of any suitable material, but preferably is of a construction which will be hereinafter fully described.

About the bale and inner cover is a jacket composed of a series of ties C, extending in one direction about the bale so as to cover the top, bottom, and sides of the same, and a second series of ties D, extending at right angles to the ties C and covering the top, bottom, and ends of the bale, these two series of ties forming the jacket, which is substituted in place of the single series of ties in common use. This metallic jacket is formed, preferably, in two parts, one part covering the top and upper portion of the sides and ends of the bale and the other part the bottom and lower portion of the sides and ends.

Each part of the jacket of Figs. 1 and 2 is of the same construction as to the arrangement of looped and plain ends as that shown in Fig. 3, the wires forming the ties C D being each provided, preferably, with loops 1 at one end, the other end 2 being plain, and the two parts of the jacket being so arranged that the plain ends of the wires on one part may be passed through the loops formed in the ends of the wires of the other part for the purpose of securing the two parts of the jacket together. This construction, in which the two parts of the jacket are duplicates, is preferred, because it enables the entire jacket to be made without adjustment of the machine; but it will be understood that the wires of one part may be provided with loops at both ends, if desired, and the wires of the other part be without loops.

While both series of ties may be formed of either single or twisted wires, which may be looped around each other or otherwise secured together where they cross, I prefer the construction shown, in which the ties D consist of two or more strands twisted together, and the ties C are formed, preferably, of a single wire passed between the strands of ties D, by which the ties C are held against lateral movement, but are allowed free longitudinal movement for drawing them taut in securing the bale. The ties C may also be formed of two or more strands, if desired.

In Fig. 3 is shown a modification of my jacket, in which the ties D are formed, as in Figs. 1 and 2, of twisted wires provided with loops at their ends, the ties C, however, being formed of flat metallic bands passed between the strands of ties D and provided at their ends with buckles 3 of any suitable form.

In Fig. 4 both series of ties are formed of flat metallic bands provided with buckles 3 at one end, the end and side bands being preferably secured together where they cross by rivets 4.

While it is preferable, both on account of convenience of construction and of the greater strength given to the bale, that the ties of the end series should pass completely around the bale when secured together, this is not absolutely necessary.

As shown in Fig. 5, the end ties may be secured to the side ties next the ends and cover only the ends of the bale overlapping the top and bottom sufficiently for attachment to the side ties. It will be understood that if greater strength is desired the end ties in this construction may be extended and secured to more than one of the side ties.

In the construction shown in Fig. 5 the side ties will be secured together in any suitable manner, so that each part of the cover will form a single construction. I have shown them thus secured by means of wire bands 7, formed of twisted wires with the ties passed between them and thus held in position. Each part of my jacket therefore consists of two series of metal ties, the ties of one series crossing all the ties of the other series and being connected at the intersections, or the ties of the two series being connected together in any other suitable manner to form a single construction, which may be handled and applied as a single piece.

By the term "part" as applied to my two-part jacket, therefore, I intend to cover any construction employing two series of metal ties arranged as described and claimed, or secured together in any suitable manner, so as to form such a single construction.

While the wires of the preferred form of jacket have been shown as provided with loops formed therein, and this is the preferable construction, it will be understood that the invention is not limited to a jacket composed of wires having loops formed in their ends, but that buckles may be used for securing the wires together. Such buckles are shown in Figs. 6, 7, and 8, Fig. 6 showing a buckle E, connecting the two wires C, and Figs. 7 and 8 a buckle F of another form, which may be substituted for buckle E. The buckle may be used in the same way as the loop, the end of the wire being passed through and secured by twisting, or a loop may be formed in the end of the wire and inserted through the opening of the buckle. Any other suitable means for securing the ends of the ties may be used.

As stated above, I may use with my metallic jacket an inner cover of any suitable material, such as jute, manila, hemp, cotton, or any twisted and woven fiber or of woven or braided flax, rushes, straw, or similar material that would make a sufficiently strong and cheap cover. I prefer, however, to make an inner cover of twisted fibers of cotton, manila, jute, or similar material having the

main web formed of small or light strands, and having interwoven therein, preferably in both warp and filling, at suitable intervals, heavier strands of much greater strength, which strands may be single or formed of a number of strands, as preferred. This construction is shown in detail in Figs. 9 and 10, in which the inner cover B has a main web formed of small or light strands 5 and the heavier strands 6 woven therein at suitable intervals. By this construction I am able to form the inner cover of a very light and cheap material, the cover being strengthened by the heavier strands, so as to afford the necessary strength required to withstand the rough handling to which the bale is subjected.

If desired to further cheapen the cover, the heavier strands may be formed of a cheaper material. For instance, the main web may be of light cotton, and the heavy strands of manila, jute, hemp, or some other cheap material which has sufficient strength to hold the hooks employed in handling the bale and prevent their forming large holes in the cover.

The method of applying my improved cover is as follows: One part of the outer jacket is first laid in position upon the floor of the press and one part of the inner cover spread in proper position over it, these forming the cover for the bottom and lower portion of the sides and ends of the bale. The press is then filled with the cotton fiber, after which the second piece of the inner cover is placed on top of the cotton and the second piece of the outer jacket placed over this. After the bale has been pressed to size, as shown, the two pieces constituting the outer jacket are united by passing the ends of the wires of one part through the loops of the corresponding opposite parts and the slack taken out by drawing the wires taut, when the ends protruding through the loops will be bent over so as to form a holding-loop and then twisted to prevent slipping, as shown fully in Fig. 1. If buckles are employed in place of the loops, the operation is substantially the same, except that the ties will be fastened, as usual, with buckles.

As shown in Fig. 1, the inner cover does not protect the entire surface of the bale either at the sides or ends, the jacket serving to protect the fiber in the uncovered portion sufficiently for such handling as is required previous to doubling.

When it is desired to double or further compress the bale for shipment, the bale shown in Fig. 1 will be placed in the compress without loosening the ties, and will then be compressed to the size shown in Fig. 2, in which the edges of the inner cover overlapping the sides and ends meet in the middle of the bale, thereby covering the bale completely and protecting the fiber from waste and the accumulation of dirt in the handling required during the shipment and transportation. The bale having been reduced to the proper size, the slack in the ties is taken out by drawing the wires through the loops until the ties are taut, when they will be firmly secured by twisting around the wires, as shown in Fig. 2. It will be seen that this construction affords a very convenient means for securing a cotton bale both as it comes from the ginning press and from the compress, it being unnecessary to remove the ties for the latter operation.

The end ties not only protect and hold together the ends of the bales, preventing their bursting out, but they avoid the necessity of sewing the ends together and effect a saving of a considerable portion of the under cover, as with them it is necessary to have the cover overlap the ends only sufficiently to meet when the bale is doubled.

What I claim is—

1. A cotton-bale jacket made in two parts, each part consisting of two series of metal ties extending at right angles to each other, one part covering the top and upper portion of the sides and ends of the bale and the other part the bottom and lower portion of the sides and ends of the bale, and the ends of the ties of the two parts being secured together when in place upon the bale, substantially as described.

2. A cotton-bale jacket made in two parts, each part consisting of two series of wires extending at right angles to each other, one part covering the top and upper portion of the sides and ends of the bale and the other part the bottom and lower portion of the sides and ends of the bale, and the ends of the ties of the two parts being secured together when in place upon the bale, substantially as described.

3. A cotton-bale jacket made in two parts, each part consisting of two series of metal ties extending at right angles to each other, one series consisting of twisted wires of two or more strands between which the ties of the other series are passed, one part covering the top and upper portion of the sides and ends of the bale and the other part the bottom and lower portion of the sides and ends of the bale, and the ends of the ties of the two parts being secured together when in place upon the bale, substantially as described.

4. A cotton-bale jacket made in two parts, each part consisting of two series of wires extending at right angles to each other, one series consisting of twisted wires of two or more strands between which the wires of the other series are passed, one part covering the top and upper portion of the sides and ends of the bale and the other part the bottom and lower portion of the sides and ends of the bale, the ends of the wires of the two parts being secured by loops formed in the wires of one part, substantially as described.

5. A cotton-bale jacket made in two parts, each part consisting of two series of wires extending at right angles to each other, one part covering the top and upper portion of the sides and ends of the bale and the other

part the bottom and lower portion of the sides and ends of the bale, the ends of the wires of the two parts being secured by loops formed in the wires of one part, substantially as described.

6. A cotton-bale cover consisting of an inner cover and an outer jacket, each made in two parts, one part of both cover and jacket covering the top and upper portion of the sides and ends of the bale and the other part covering the bottom and lower portion of the sides and ends of the bale, the ends of the ties of the two parts being secured together when in place upon the bale and the inner cover overlapping both the sides and ends of the bale, and the edges of its two parts meeting on both the sides and ends when the bale is doubled at the compress, substantially as described.

7. A cotton-bale cover consisting of an inner cover of woven material having strands of greater strength woven therein at intervals and an outer metallic jacket, each made in two parts, one part of both cover and jacket covering the top and upper portion of the sides and ends of the bale and the other part covering the bottom and lower portion of the sides and ends of the bale, the inner cover overlapping both the sides and ends of the bale, and the edges of its two parts meeting on both the sides and ends when the bale is doubled at the compress, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM ORR.

Witnesses:
A. D. CARNAGY,
H. N. CORNING.