

No. 706,193.

Patented Aug. 5, 1902.

S. McCAY.

BALE TIE.

(Application filed Jan. 13, 1902.)

(No Model.)

Fig. 1.

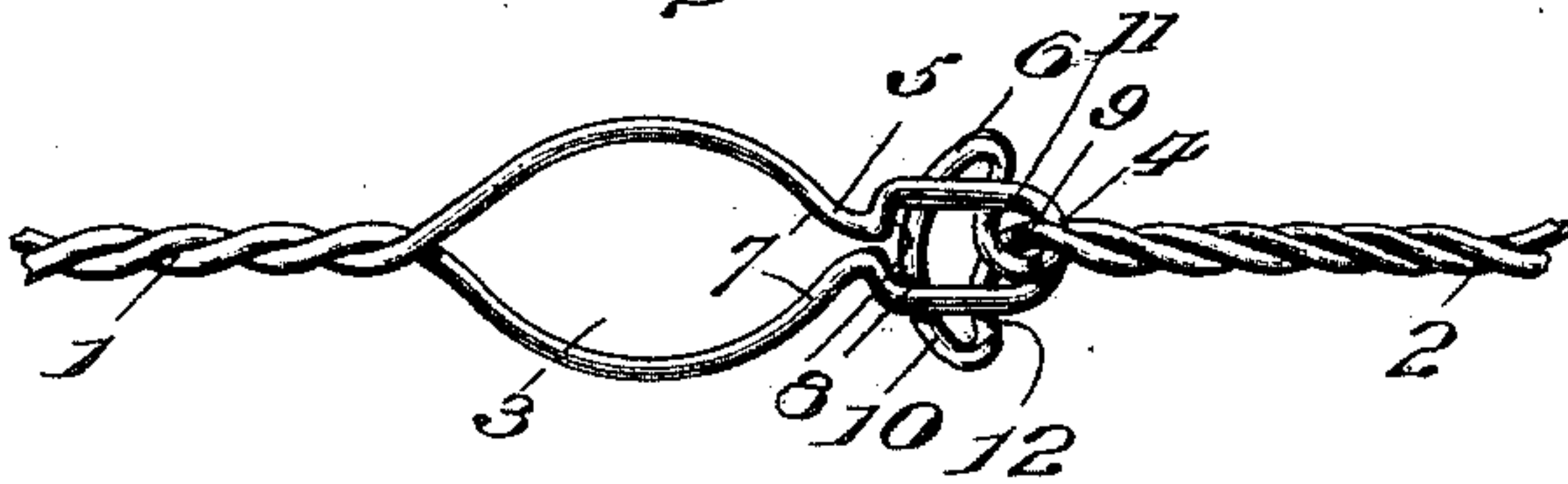


Fig. 2.

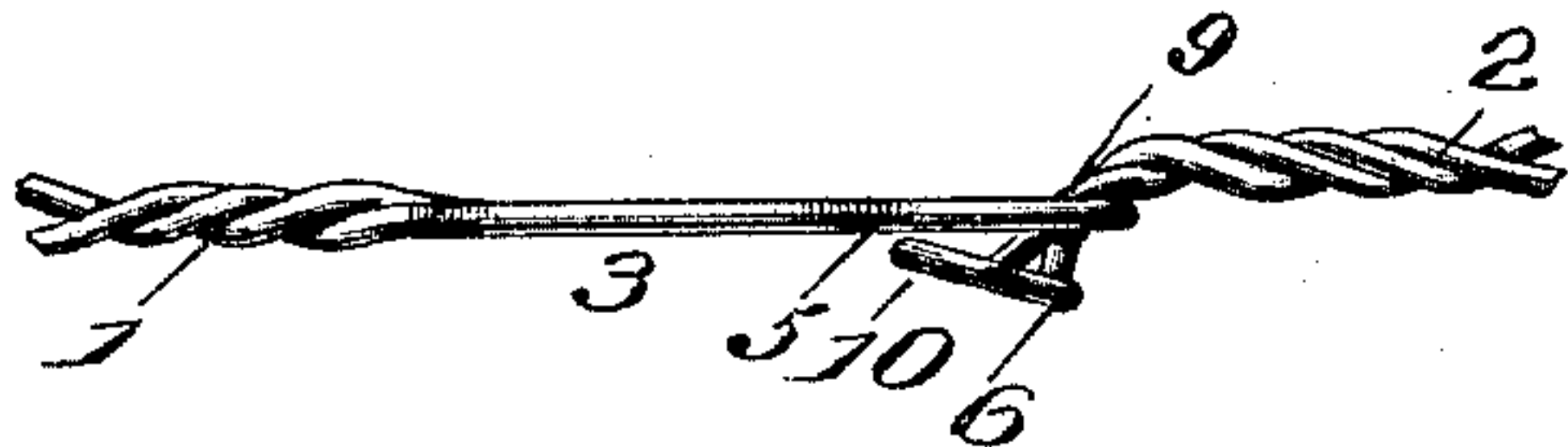


Fig. 3.

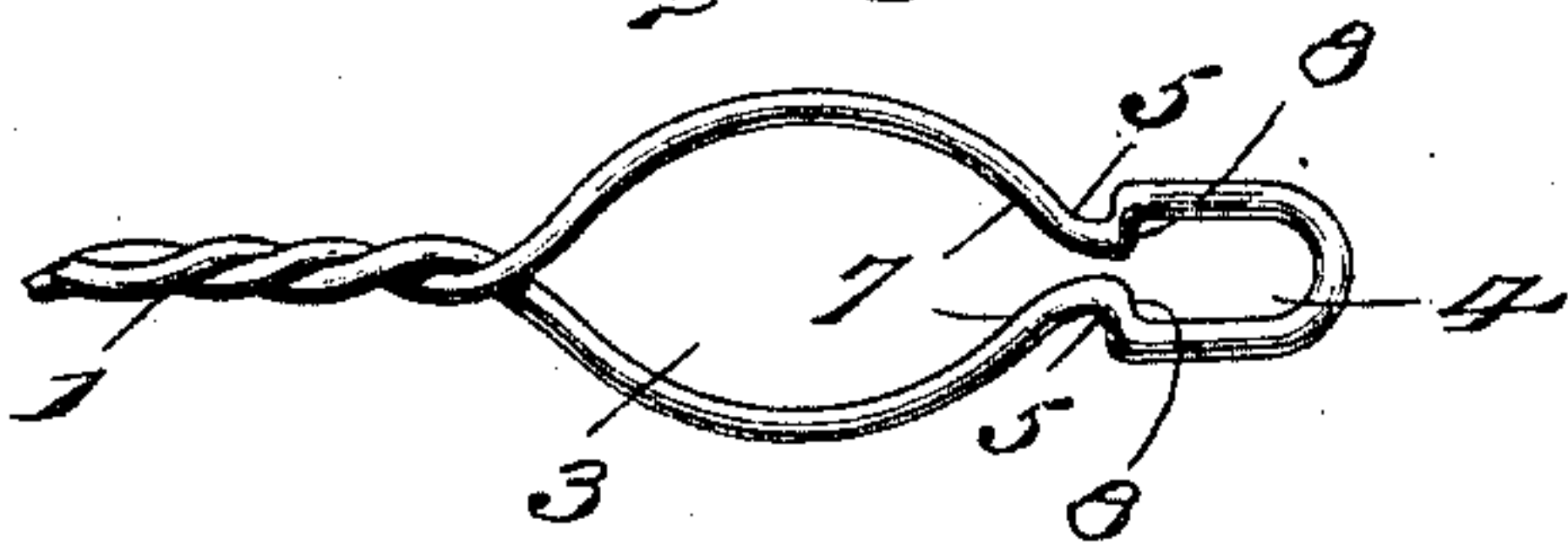


Fig. 4.

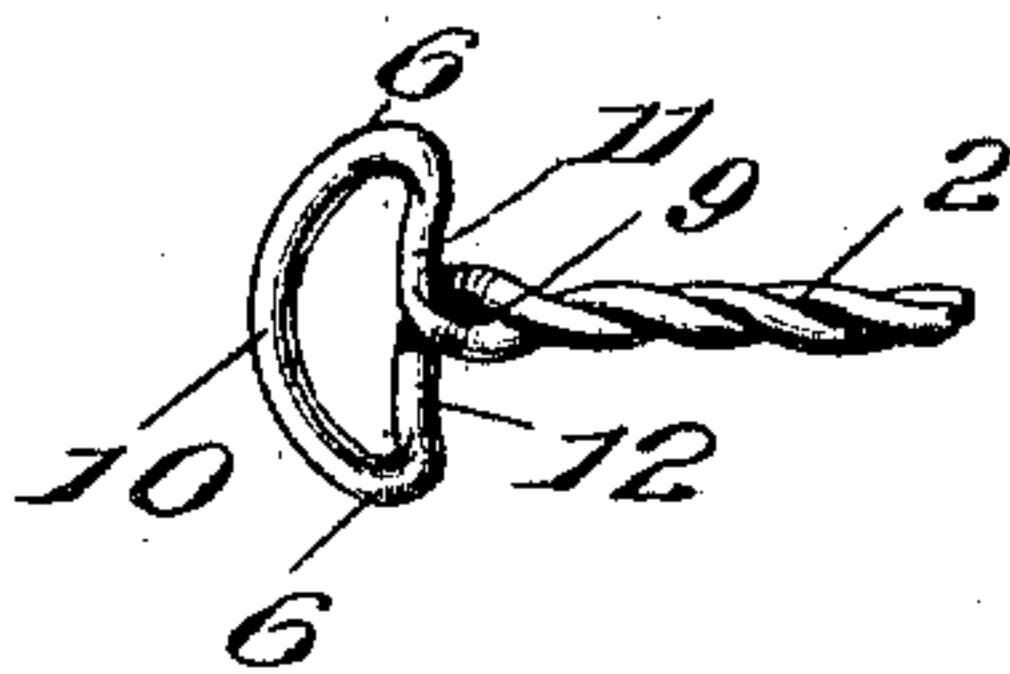


Fig. 5.



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UNITED STATES PATENT OFFICE.

SPENCER McCAY, OF TOPEKA, KANSAS.

BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 706,193, dated August 5, 1902.

Application filed January 13, 1902. Serial No. 89,573. (No model.)

To all whom it may concern:

Be it known that I, SPENCER McCAY, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Bale-Ties; 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.

One of the chief objections urged against the use of metal ties as generally constructed in the binding of bales is the frequent opening or separation of the ends of the tie after being snapped or engaged when the tie becomes slack by reason of compression of the bale when forcing it from the press.

This invention aims to provide a tie of the character aforesaid which will automatically lock and prevent casual separation of the joint when the tie is released from tension from any cause. Simplicity of construction and cheapness of manufacture, combined with ease of manipulation in coupling the ends of the tie when in position, are essential features in the formation of the article.

In accordance with this invention the tie is provided at one end with entrance and receiving loops, separated by an intermediate stop to prevent separation of the tie when coupled, and at the opposite end with a head to pass through the entrance-loop into the receiving-loop and interlock therewith, said head being constructed to brace the offset at the base thereof and inclined to add to the security of the joint.

The invention consists, essentially, of the novel features, details of construction, and combinations of the parts, which hereinafter will be more particularly set forth, illustrated, and finally claimed.

In the drawings hereto attached and forming a part of the specification, Figure 1 is a plan view of the end portions of a bale-tie embodying the invention, said ends being coupled. Fig. 2 is a side view of the parts shown in Fig. 1. Fig. 3 is a plan view of one end of the tie. Fig. 4 is a view similar to Fig. 3 of the other end of the tie. Fig. 5 is a side view of the parts shown in Fig. 4.

Corresponding and like parts are referred to in the following description and indicated

in all the views of the drawings by the same reference characters.

The tie is formed of wire of suitable gage, and its end portions are folded and inter-twisted for a short distance from the extremities, as shown at 1 and 2, the terminal portions being shaped substantially as shown to provide the coupling members.

One end of the tie comprises an entrance-loop 3 and a receiving-loop 4, separated by a contracted portion 5, which forms a stop or lock to prevent accidental separation of the members adapted to be coupled. The entrance-loop 3 is elongated lengthwise of the tie, whereas the receiving-loop 4 is approximately of D shape, the straight side being adjacent to the entrance-loop 3 and constituting the stop to prevent the head 6 at the opposite end of the tie from passing back into the loop 3 after the members have been coupled. The contracted part 5 separates the loops 3 and 4, and its members flare or diverge toward the loop 3, as shown at 7, and are bent abruptly toward the loop 4 to form shoulders 8, which unitedly constitute the straight side of the receiving-loop 4 and the stop-shoulders against which the offset 9 of the cooperating member abuts when the tie is slackened from any cause. The passage between the contracted portion 5 is extremely narrow, or the inwardly-deflected side portions may touch, the purpose being to prevent return of the head into the entrance-loop 3 after passing into the receiving-loop 4. The opposite end portion of the tie is formed with a head 6, whose outer bar 10 is curved or deflected away from the inner bar 11, which is curved adjacent to the twisted part 2, as shown at 12, so as to centralize the parts 1 and 2 when coupled, as shown most clearly in Fig. 1, and prevent lateral movement, as well as to add to the security and strength of the joint. The head 6 is inclined, as shown most clearly in Figs. 2 and 5, to cause the middle portion of the outwardly-deflected bar 10 to touch the inner end portion of the loop 4, as shown most clearly in Fig. 2, thereby bracing the offset 9, so as to prevent straightening thereof and a giving away of the joint when the tie is under linear strain. The twisted portion 2 is offset at the base of the head 6, as shown at 9, and this offset portion engages with the

outer end of the loop 4 and interlocks therewith to sustain the strain coming upon the tie when in service.

The entrance and receiving loops 3 and 4 are in the same plane with the twisted portion 1, and the head 6 is flat. Hence the joint formed by the ends of the tie when coupled is flat and lies close to the bale and is not liable to catch against an object either to the injury thereof or to the weakening of the joint. Moreover, this formation of the joint involves a simple construction and economical manufacture both in material and time.

A bale-tie embodying the invention is adapted to have its end coupled by passing the head 6 through the entrance-loop 3 and pulling upon the members to cause the offset 9 to pass by the contracted portion 5 into the receiving-loop 4. The part 9, riding upon the inclined portions 7, gradually forces the side portions of the contracted part 5 apart, and the instant the shoulders 8 have been cleared the side members of the contracted portion 5 spring together and prevent return of the head into the loop 3, thereby providing a secure lock. The strain is extended by the outer end of the loop 4 and the offset portion 9, and the latter is braced by the deflected bar 10 bearing against the inner end portion of the loop 4 in the manner stated. The head 6, sitting crosswise of the loop 4, prevents outward displacement of the offset portion 9 when the tie is strained.

Having thus described the invention, what is claimed as new is—

1. In a bale-tie, a coupling end comprising entrance and receiving loops separated by a contracted portion having the members facing the entrance-loop diverged and the members facing the receiving-loop abruptly bent to form stop-shoulders, and a cooperating coupling end having a cross-head to pass through the entrance-loop preliminary to passing into the receiving-loop, the side portions of the contracted part being separated by a portion of the end provided with the head riding upon the said diverged members, and said side portions springing together to

prevent return of the head into the entrance-loop after passing into the receiving-loop, substantially as set forth.

2. In a bale-tie, a coupling end comprising entrance and receiving loops separated by a contracted portion having diverged members facing the entrance-loop and abrupt shoulders facing the receiving-loop, and a coupling end having a head to pass into the entrance-loop, thence by the contracted portion into the receiving-loop and having its outer bar forwardly deflected to obtain a bearing against a side of the receiving-loop near its inner end to brace and stiffen the joint, substantially as set forth.

3. In a bale-tie, a coupling end comprising entrance and receiving loops separated by a contracted portion having abrupt shoulders facing the receiving-loop and diverged members facing the entrance-loop, and a coupling end having a head inclined to the plane of the aforesaid loops and having its outer bar deflected to obtain a bearing against a loop a distance from the outer end of the receiving-loop, substantially as set forth.

4. In a bale-tie, a coupling end comprising entrance and receiving loops and an intermediate contracted portion, the receiving-loop being approximately of D form and the contracted portion having its side members diverged toward the entrance-loop and abruptly bent toward the receiving-loop to form the straight side thereof, and a second coupling end having a head offset and inclined, the outer bar of said head being outwardly deflected and the inner bar having portions adjacent to the offset portion curved to form side hooks, the outer bar of the head constituting a brace, the parts being constructed for operation substantially in the manner specified.

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

SPENCER MCCAY. [L. S.]

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