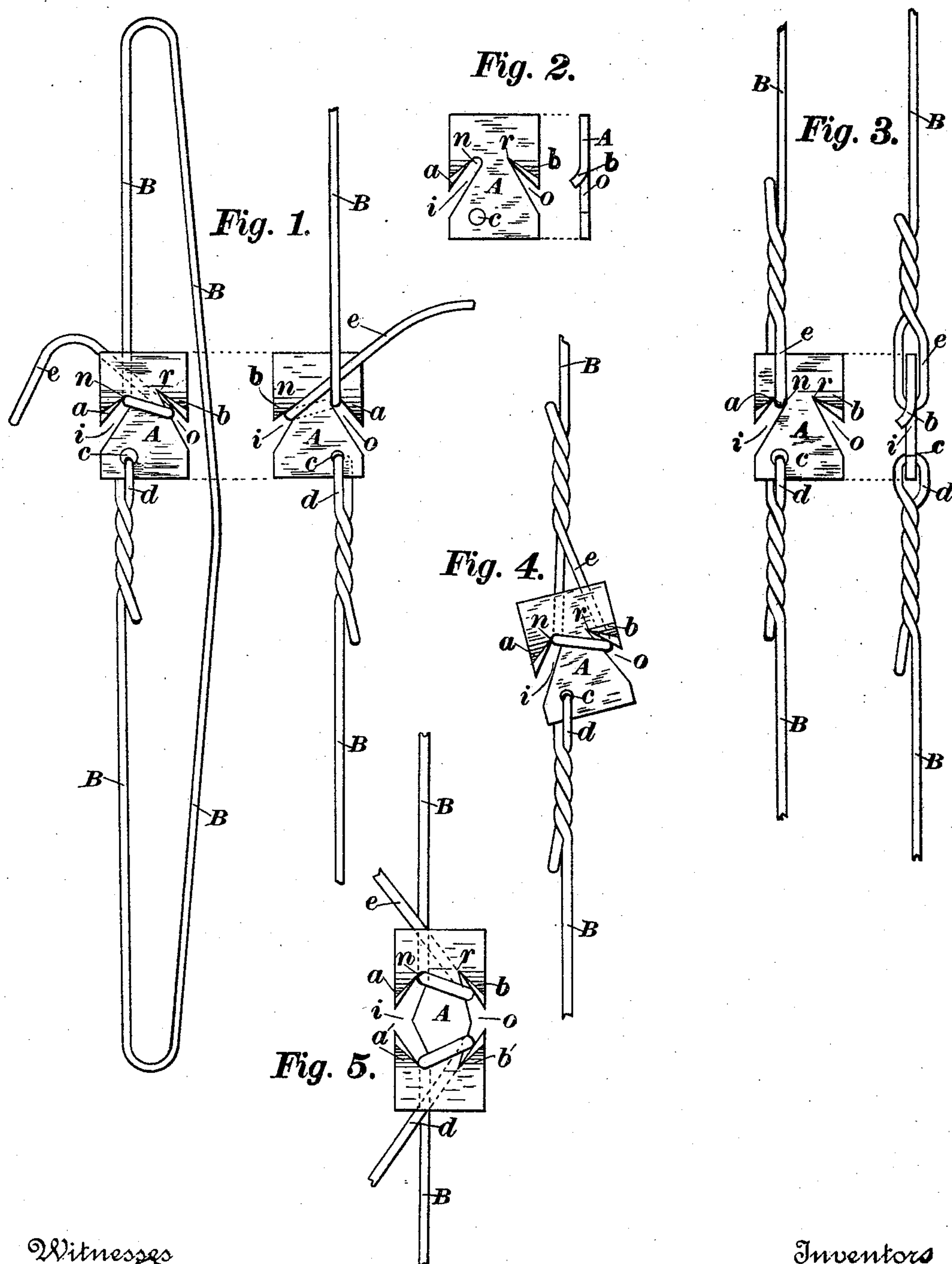


(No Model.)

E. E. REED & K. M. TURNER.
BALE TIE.

No. 457,292.

Patented Aug. 4, 1891.



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UNITED STATES PATENT OFFICE.

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BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 457,292, dated August 4, 1891.

Application filed May 1, 1890. Serial No. 350,142. (No model.)

To all whom it may concern:

Be it known that we, EDWIN E. REED, residing at Williamston, in the county of Ingham and State of Michigan, and KELLY MONROE TURNER, residing at Chicago, in the county of Cook and State of Illinois, both citizens of the United States, have invented a new and useful Bale-Tie, of which the following is a specification.

Our invention relates to improvements in that class of bale-ties which are commonly made of metal and are used in connection with a piece of wire to firmly bind together bales of cotton, hay, &c.; and our object is to produce a device which is so formed that it will be equally adapted to firmly secure the binding-wire around the bale, either as an adjustable or fixed tie, and not cost more in its manufacture than other ties which are commonly applied to binding-wire which has a fixed length by having its ends formed into loops for making connection with the tie-plate, as will be fully explained hereinafter. This object is attained by the construction shown in the accompanying drawings.

Figure 1 shows, respectively, a front and back view of the tie as usually applied in practice. Fig. 2 shows, respectively, the tie-plate in front and edge view detached from the binding-wire. Fig. 3 shows tie-plate attached to binding-wire of fixed length. Fig. 4 shows method of attaching fixed-length binding-wire different from Fig. 3. Fig. 5 shows double-end tie-plate and method of attaching ends of wire of any required length with ends of wire not fixed.

Similar letters refer to like parts in all the drawings.

A is the tie-plate, which is made of metal and in the form shown by Fig. 2. This tie-plate is usually of rectangular form, and has hooks *a b* cut into each side, as shown. It will be noticed that the hook *a* forms a slot *i* which is slightly tapered. The bottom *n* of this slot is wide enough to receive any diameter of wire which would be adequate to give the strength necessary for the purpose intended, while the bottom *r* of the slot *o*, formed by hook *b*, is tapered almost to a point, so as to act as a lock to hold the loose end of the binding-wire, as will be explained hereinafter.

There is a hole *c* in plate A, which hole is placed longitudinally with the plate A in line with the bottom *n* of slot *i*, and in hole *c* one end *d* of the binding-wire B is secured, as shown. In Fig. 1 is shown the other end *e* of wire B, which has no loop and is attached to plate A by first passing it under the plate and then into slot *i* and to the bottom *n*. The plate A now forms a connection for both ends of the wire, and by grasping the end *e* of the wire it can be pulled close and tight around the bale, when the end grasped can be brought over across the plate A and engaged in the slot *o*. The end of the wire is now pulled to the left under plate A, when it stands in the position shown in the right-hand view, Fig. 1, and is between the plate and part of itself, as shown in the right-hand rear view, Fig. 1. On account of the tapered slot *o*, when the bale is released from the press and swells, the end of the wire is pulled deeper into the tapered slot *o*, and the greater the strain upon the wire the deeper it is drawn into the tapered slot and the stronger will it be held from slipping from its position. In baling with the ordinary ties the end of the wire is sometimes twisted around itself, which is not only difficult to accomplish with the fingers, but it becomes necessary to lift the wire from the bale, which cannot be done unless it is comparatively loose, and which is objectionable.

In our invention the wire can be drawn as tightly as is desired and the end simply brought around under the end of the plate A above the part of the wire in contact with the bale, an operation which is quickly accomplished, will not tire or injure the fingers, and makes a perfect lock for the end of the wire, which cannot be unlocked by any amount of rough usage to which baled goods are always subject.

The application of tie-plate A, as shown in Fig. 1, illustrates how it is adapted to bales that vary slightly in size; but in bales which do not vary in size the binding-wire is made of a fixed length, as shown in Figs. 3 and 4, where the ends of the wire is formed into loops, which loops engage plate A in the two ways shown.

In Fig. 3 the loop at the end *e* of wire B en-

gages hook *a*, the bottom *n* being in line with hole *c*, to which is attached the other end *d*.

In Fig. 4 the loop at the end *e* of wire B engages both hooks *a* and *b*. Fig. 5 shows a double-end plate A, having hooks *a b* and *a' b'*, which hooks, standing in opposite directions, are adapted to hold binding-wire which is not provided with loops at either end, and therefore has no fixed length. This variation in the construction of plate A is well adapted to securing the binding-wire around bales which vary greatly in size, and when the binding-wire is taken from the coil and when it is not convenient to make the usual loops at the ends.

It will be noticed that in the construction of the plate A the hooks *a* and *b* are set to one side, as shown in the edge view, Figs. 2 and 3. By bending or setting the hooks to one side, similar to the manner in which ordinary rip-saw teeth are set, the points of the hooks are thrown above the level of the front of plate A, and it becomes much easier to engage the wire with the hooks than if they were not set; and since the set to one side of the hooks can be done at the same time the plates are cut out of a sheet there is no additional cost, and the plates are thereby much better adapted to fulfill the purpose for which they are intended, since this feature greatly

facilitates the engagement of the end of the binding-wire with the hooks when the plate lies flat upon the bale.

This form of tie possesses several valuable qualities, among which may be mentioned that it is both cheap and strong, does not present any angles to catch against anything that may contact with the bale, and is adapted to be used without any previous special preparation of the binding-wire which it connects, and yet can be used with any of the ordinary kinds of binding-wire having looped ends or fixed lengths.

What we claim as our invention is—

In a bale-tie, a plate A, having two slots *i* and *o* cut into the edges of said plate A to form hooks *a* and *b*, one hook at each edge of said plate A, said slot *i* being large enough at the bottom *n* to freely admit a binding-wire B, while the opposite slot *o* has a V shape, the sides of said slot *o* approaching each other to a distance less than the diameter of binding-wire B, said slots *i* and *b* acting in combination to hold and lock binding-wire B, as hereinbefore described.

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