2 Sheets—Sheet 1.

N. W. SPEERS.

Bale-Ties and Apparatus for Applying the same.

No. 200,775. Patented Feb. 26, 1878.

Fig. 1

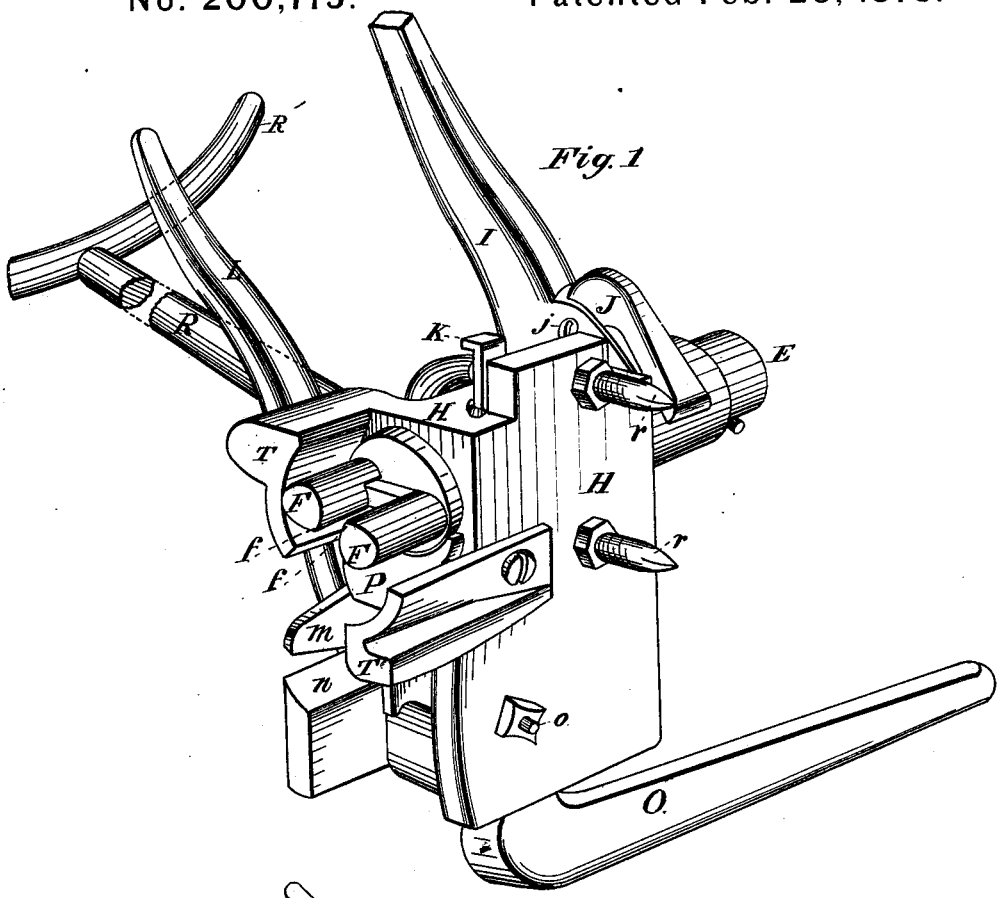
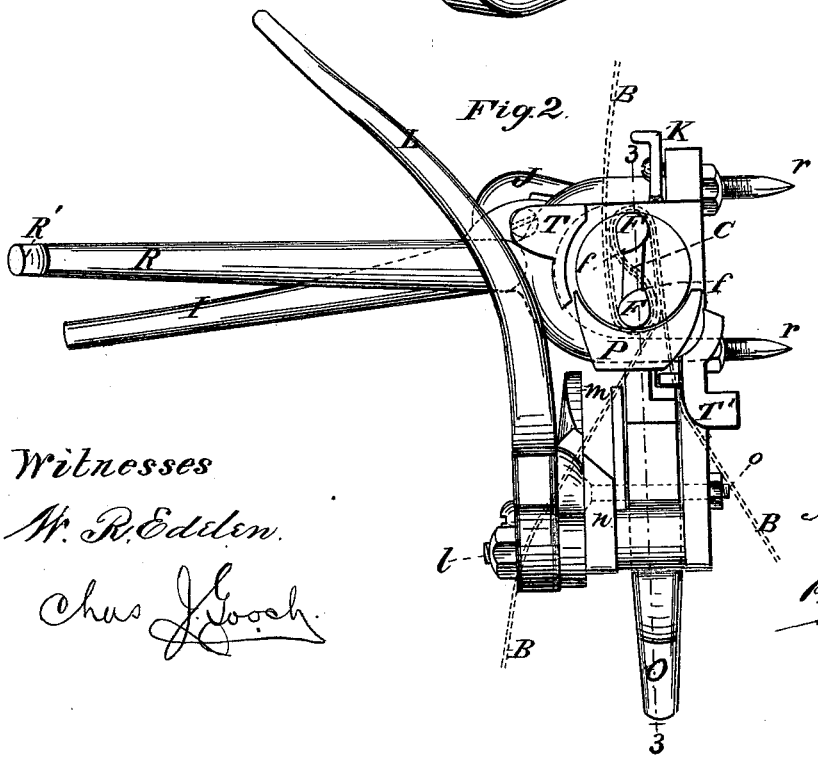


Fig. 2.



Witnesses

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2 Sheets—Sheet 2.

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Bale-Ties and Apparatus for Applying the same.

No. 200,775. Patented Feb. 26, 1878.

Fig. 4.

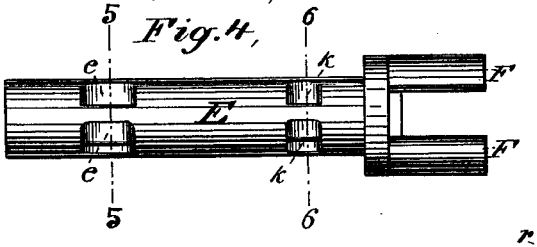


Fig. 3.

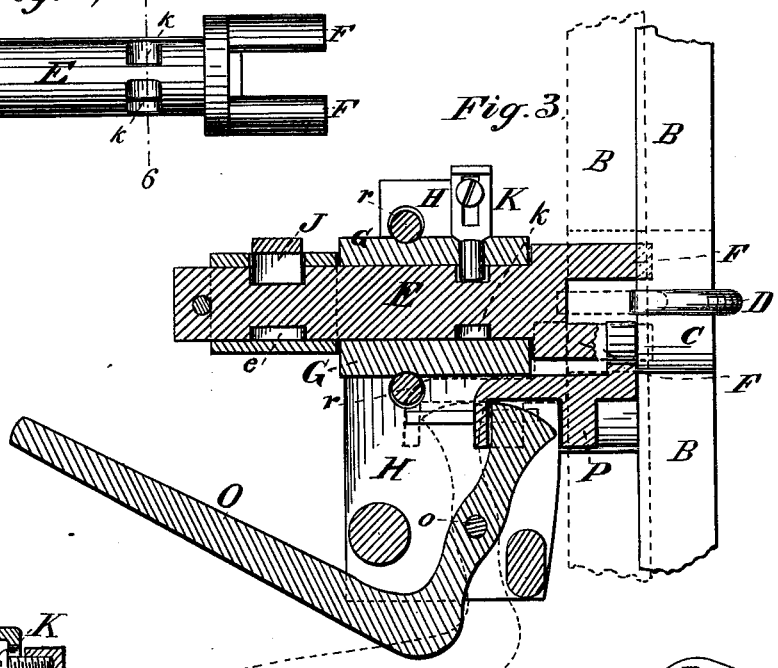


Fig. 6.

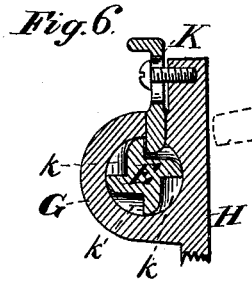


Fig. 5.

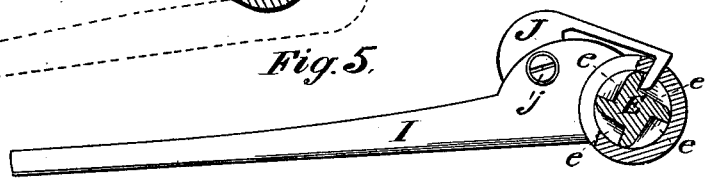


Fig. 7.

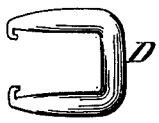


Fig. 9.

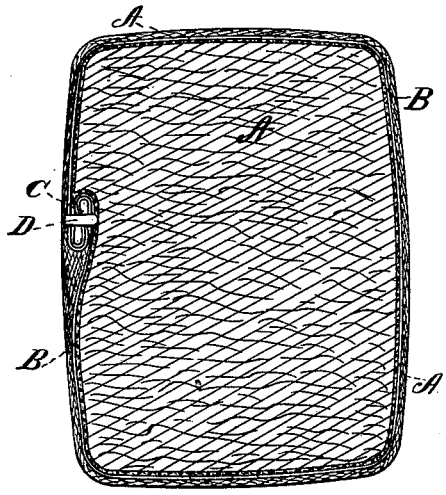
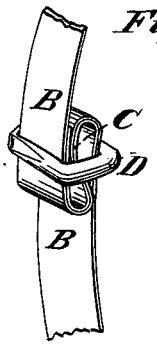


Fig. 8.



Witnesses.

W. R. Eddon

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UNITED STATES PATENT OFFICE.

NOAH W. SPEERS, OF MEMPHIS, TENNESSEE, ASSIGNOR OF ONE-EIGHTH OF HIS RIGHT TO ADA BROWN, OF SAME PLACE.

IMPROVEMENT IN BALE-TIES AND APPARATUS FOR APPLYING THE SAME.

Specification forming part of Letters Patent No. **200,775**, dated February 26, 1878; application filed August 10, 1877.

To all whom it may concern:

Be it known that I, NOAH W. SPEERS, of Memphis, in the county of Shelby and State of Tennessee, have invented a certain new and useful Improvement in Bale-Ties and Apparatus for Applying the Same, of which the following is a specification:

My improved tie is formed by producing a double crimp in the hoop or band, and fastening the same by means of a U-shaped keeper.

The invention further consists in a crimping device, adapted to engage two ends or parts of the hoop or band, and twist them one upon the other into S shape, so that they will mutually interlock.

The invention further consists in a device for discharging the crimped and locked hoop.

The invention further consists in a device for applying the crimping apparatus to the side of a cotton-bale, and securing it while in operation.

In the accompanying drawing, Figure 1 is a perspective view of the crimping apparatus. Fig. 2 is an end view thereof. Fig. 3 is a vertical longitudinal section of the same on the line 3 3, Fig. 2. Fig. 4 is an elevation of the crimping-shaft. Fig. 5 is a transverse section of the same on the line 5 5, Fig. 4, showing the operating-lever and ratchet in elevation. Fig. 6 is a transverse section thereof on the line 6 6, Fig. 4, showing the detent or dog for securing the shaft against reverse movement. Fig. 7 is a side view of a keeper for application to the crimped band. Fig. 8 is a perspective of a portion of the crimped band with the keeper applied. Fig. 9 is a transverse section of a bale, illustrating the application of the invention.

A may represent a cotton or other bale; B B, portions of a band or hoop; C, the S-shaped crimps produced in the hoop by my device; and D, the U-shaped keeper, by which said crimps are retained. For producing this S-shaped crimp, I employ a shaft, E, formed at one end with two parallel studs, F F, which are formed at one part with angles *f*, adapting them to hold the band or hoop, as hereinafter described. The shaft E works in a box, G, on the frame H. It is operated by means of a ratchet-lever, I J, I being the lever, and J the ratchet, pivoted thereto at *j*, and formed to engage with suitably-shaped notches *e* in the shaft, so as to impart a rotary motion to the shaft in one direction with great force.

To prevent reverse motion of the shaft, a dog, K, is employed, sliding in the frame H, and engaging in notches *k* of suitable shape in the shaft E. L is a lever, fulcrumed at *l*, and operating a shearing-blade, *m*, which works in conjunction with a stationary blade, *n*, on the frame, for cutting off so much of the hoop-iron as is required to form a band or severing therefrom any surplus portion. O is a lever, fulcrumed at *o*, and by its short upper arm operating a slide, P, which is guided horizontally in the frame, and has a suitable shape to discharge the crimped band from the crimper, as hereinafter described. R is a fork, the prongs *r* of which extend through suitable openings in the frame H, and project within the substance of the cotton-bale, so as to retain the apparatus in position against the face of the bale while in operation. The rear part of the fork is formed with a cross-piece, R′, against which the operator bears with his chest.

The operation of the device is as follows: The apparatus being placed against the front of a cotton-bale, as illustrated in Fig 2, the hoop is passed around the bale, and the ends between the studs or jaws F of the crimping-shaft, any surplus hoop-iron being cut off by the shears *m n*, if necessary. The crimping-shaft is then rotated by means of the lever I, imparting a double S-shaped crimp to the interlocked portions of the band, as shown in Fig. 2, which illustrates the position of the parts when this interlocked crimp is completed. The U-shaped keeper D is then applied to retain this crimp, and the lever O is operated to throw the crimp off from the crimping-shaft.

The apparatus may be used to take up the tying-bands, which are already in position on a bale, by placing the studs F of the shaft in oblique or diagonal position, so that one of them may be conveniently inserted under the hoop. The operation is then performed, as already described. By this means the band of a cotton-bale, as now ordinarily tied for transportation, may be drawn up fully six inches, and so secured.

The shaft E may, if preferred, be made hollow, and may contain within it the slide to discharge the crimped band, said slide being operated by a rod extending beyond the open rear end of the hollow shaft, so as to be acted on by the lever.

Having thus described my invention, the following is what I claim as new, and desire to secure by Letters Patent—

1. The bale-tie herein described, consisting of the interlocking **S**-shaped crimps C and **U**-shaped keeper D, for securing the same.

2. The crimping apparatus constructed with a forked shaft, E F, and a ratchet-lever, I J, for rotating the same.

3. A bale-tying machine constructed substantially as described, with a fork-shaft, E F, and ratchet-lever I J, and detent-dog *k* and a slide, P, for discharging the crimped band.

4. The combination, with a crimping-machine, substantially as set forth, of the shears L *m n*, for severing the hoop.

5. The combination, with a bale-tying machine, operated substantially as set forth, of the fork R, for retaining the same in position on the bale while in operation.

N. W. SPEERS.

Witnesses:
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CHAS. J. GOOCH.