H. KNOWLES.

SELF FASTENING COUPLING CLASP FOR STRAPS OR HOOPS.

No. 25,125. Patented Aug. 16, 1859.

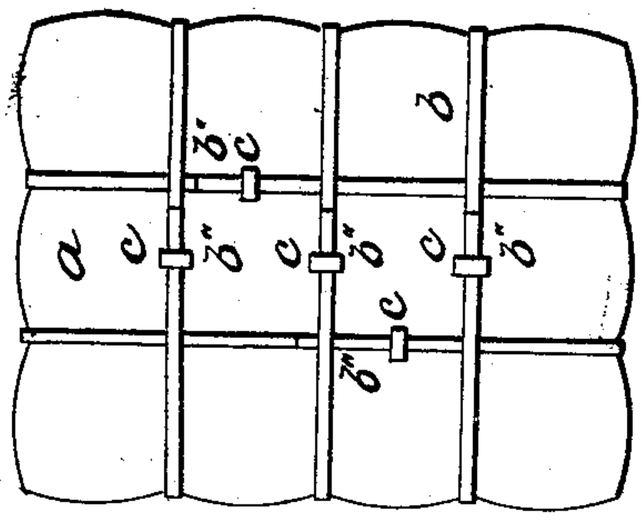

Fig. 1.

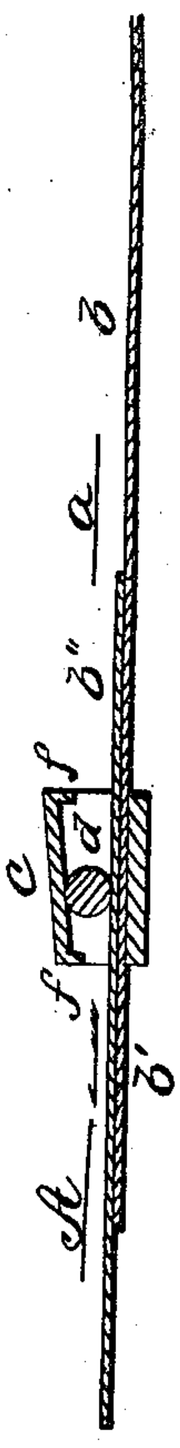

Fig. 2.

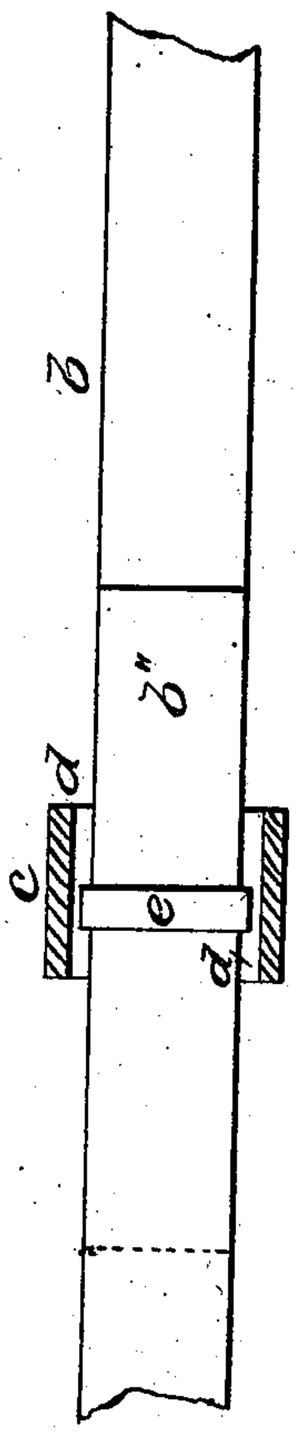

Fig. 3 A, a.

Witnesses:

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UNITED STATES PATENT OFFICE.

HAZARD KNOWLES, OF NEW YORK, N. Y.

IMPROVEMENT IN CLASPS FOR FASTENING BANDS ON COTTON-BALES, &c.

Specification forming part of Letters Patent No. **25,125**, dated August 16, 1859.

To all whom it may concern:

Be it known that I, HAZARD KNOWLES, of the city, county, and State of New York, have invented a certain new and Improved Self-Fastening Coupling-Clasp for Straps or Hoops; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view of the coupling-clasp applied to the two ends of an iron strap, Fig. 2, a longitudinal section, and Fig. 3 a horizontal section taken at the line A *a* of Fig. 2.

The same letters indicate like parts in all the figures.

The object of my invention is to fasten the end or ends of straps or hoops for binding bales of cotton and other packages, and for other purposes. Many plans have been invented for this purpose, as substitutes for rivets, but so far as I am informed they have all been found to be objectionable in practice, and especially so as applied to the baling of cotton. The leading objects are so to couple or connect the ends of the straps or hoops that but little time and skill will be required in making the application, and to effect the coupling by simply inserting the end or ends in the coupling or clasp, and so that without punching holes, or bending or otherwise weakening the strap or hoop, the end or ends thereof shall be firmly gripped to resist any force applied to draw it or them out; and my said invention consists in effecting this purpose by means of a roller combined with and placed within the wedge-formed mortise or opening of a sleeve, so that the end of the strap or hoop to be secured may be readily inserted in the said mortise in one direction, and when force is applied in the opposite direction, the friction of the said roller shall cause it to be drawn and rolled toward the small end of the mortise, and thereby cause the roller to bind and grip the strap against the opposite face of the mortise by a force increasing as the force increases which is applied to draw it out.

In the accompanying drawings, my invention is represented as applied to a bale of cotton; and in the said drawings *a* represents a bale of cotton, and *b* an iron strap, such as is usually employed for hooping bales of cotton; and *c* metal a sleeve with a mortise, *d*, made through it to receive the ends of the strap *b*. This mortise should be a little wider than the strap, to admit of the ready insertion of the ends of the strap, and, as represented, it should be wedge-formed in the direction of the length of the strap, and of such depth as to receive freely the two ends of the strap lapped on each other, and a cylindrical metal roller, *e*, when the said roller is at or toward the butt-end of the mortise, but the other end of the mortise should be less in depth than the diameter of the roller and the thickness of the two straps; and to prevent the roller from dropping out of the mortise, the upper surface of the mortise at each end is formed with a flange, *f*. The roller is without journals and rests on the outer surface of the upper end of the strap, and lies between that and the upper inclined surface of the mortise. In applying this to a bale of cotton, while under pressure, after bending the strap *b* around the bale, the end *b'* is inserted in the mortise *d* and under the roller, and then the other end, *b''*, is inserted into the small end of the mortise and between the other end, *b'*, of the strap, and the roller which rolls toward the flange on the wide end of the mortise to admit of the free entrance. The strap is then drawn tight by pulling on the end *b''*, but the moment it is liberated and the tension begins to draw it back in the direction of the arrow—that is, toward the small end of the mortise—the friction of the strap on the periphery of the roller carries it (the roller) toward the small end of the mortise until it comes in contact with the upper inclined surface of the mortise, at which time it begins to roll and wedge down the strap with a bite so strong that neither end of the strap can be drawn out, for the greater the force applied to draw out the strap the more the roller becomes wedged into the mortise, and the more firmly it grips the strap against the bottom of the mortise. In this way it will be seen that bales and other packages can be strapped or hooped with great expedition, and by means which will clamp the ends of the straps as firmly if not more firmly than by any other known mode, and without reducing the strength of the straps, and without injury either to the straps or to the clamping sleeve and roller, so that the means employed can, if desired, be used again;

and, although I have above described both ends of the strap or hoop as being inserted in the sleeve and clamped by the rolling action of the roller in the wedge-formed mortise, it will be evident that the same mode of operation is applicable to the securing of one end of a strap.

I am aware that it has been proposed to secure straps in the mortise of a sleeve by means of an eccentric or cam-formed roller; but in such case the roller was provided with and could not operate without turning on journals, which not only rendered the construction expensive, but the action was not sure, for the reason that any impediment to the turning of the roller on its journals would prevent the grip, and unless the strap was forced up in contact with the roller there was nothing to insure its turning, all of which defects are avoided by my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

The method of securing straps by means of a roller, substantially such as described, in combination with the wedge-formed mortise of the sleeve which receives the strap, substantially as described.

Witnesses: HAZARD KNOWLES.
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