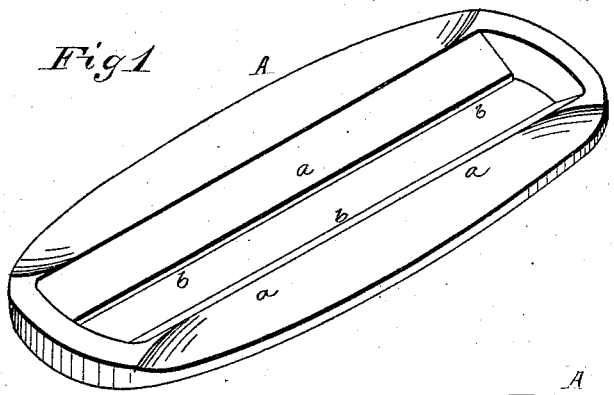
C. C. ROE.

MODE OF UNITING THE ENDS OF BELTING.

No. 169,482. Patented Nov. 2, 1875.

Fig 1



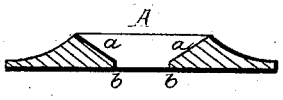


Fig 2

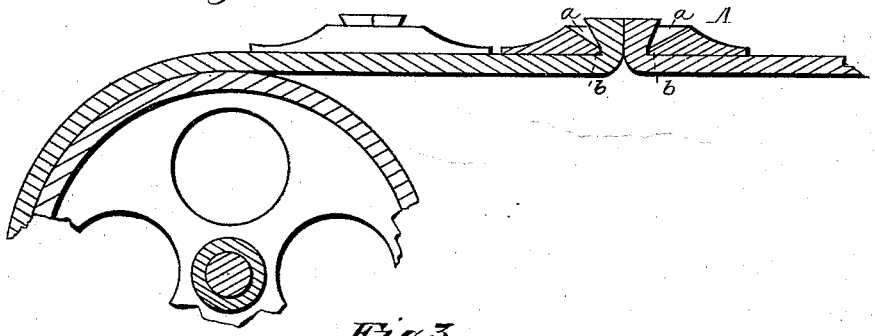
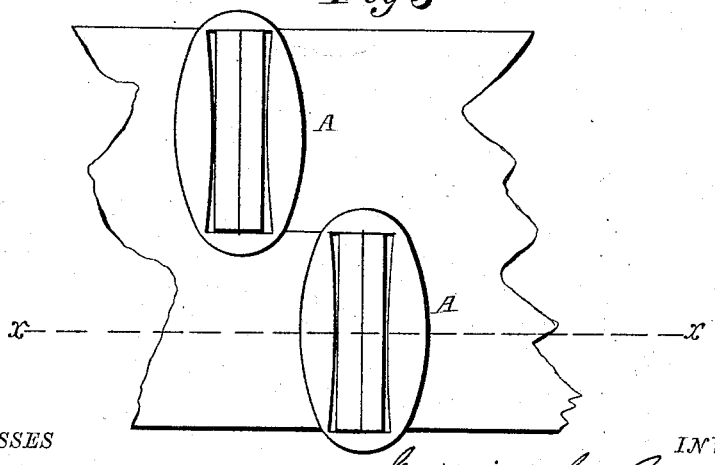


Fig 3



WITNESSES

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CYRENIUS CHAPIN ROE, OF HAMILTON, CANADA.

IMPROVEMENT IN THE MODES OF UNITING THE ENDS OF BELTING.

Specification forming part of Letters Patent No. **169,482**, dated November 2, 1875; application filed April 5, 1875.

To all whom it may concern:

Be it known that I, CYRENIUS CHAPIN ROE, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented a certain new and useful Machine Belt-Buckle or Fastener; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

This invention relates to an improved method of securing the ends of machine-belts, its object being to connect the ends through the medium of a simple, convenient, and effective metallic fastening or buckle, whether the belt be made of leather, rubber, felt, or other material commonly employed for the purpose, without riveting, sewing, or otherwise injuring the strength of the belt, and which will not come in contact with pulleys over which the belt runs.

Machine-belts, as usually constructed, have been fastened at the ends by cementing, sewing, or riveting the same together, which necessitates the cutting or punching of the material, greatly impairing its strength, or by means of metallic hooks, which, besides the weakening of the material occasioned by the punching necessary for their application, entail a great loss of power by the slipping of the belt when such metallic portions come in contact with the pulleys. The slipping of such metallic hooks also gives rise to great irregularity in the running of the machinery, which is an additional drawback to their use. A slotted metallic buckle has also been employed, the slot being considerably larger than the ends of the belt to be secured, said ends being held therein by means of a wedge driven between the two in such manner as to cause said ends to impinge against the edges of the slots, and in this manner be held therein. Such wedges are liable to be thrown out by centrifugal force when the belt is in rapid motion, and also tends to cut and weaken the ends by pushing them too closely against the edge of the slot.

By my invention all of the above-enumerated objections are obviated.

My invention consists in the method of securing the ends of machine-belts by means of a rectangular or other shaped metallic plate, made flat or nearly so on the under side, which is in contact with the belt when in position, slotted longitudinally, the width of the slot being such as to hold the ends of the belt to be united without the use of a wedge or key, which is apt to fly out when the belt is in motion, the upper face of said plate being beveled outward from the slot on each side of the same, forming thin binding or pinching edges, which impinge against and hold the ends of the belt when subjected to a longitudinal strain, as hereinafter more fully described.

In the drawing, Figure 1 represents a perspective view of my improved device, Fig. 2 a sectional view of the device and a detached portion of the pulley and the belt united by the device, and Fig. 3 a detached view of the device, as applied to a very broad belt.

The letter A represents the buckle, composed of a metallic plate of oval, rectangular, or other convenient shape, having a longitudinal slot through the same, extending nearly from one end to the other. Said slot should be exactly equal in length to the width of the belt, and in width exactly equal to the thickness of the two ends of the belt when placed together. The lower surface of the plate, which lies in contact with the outer surface of the belt when it is stretched, is made flat, so as to bear evenly against said surface. The upper surface of said plate is beveled from the slot outward, as shown at *a a*, forming two thin binding-edges, *b b*, which serve to pinch and secure the ends of the belt when the same is subjected to a longitudinal strain. Said binding-edges, however, are not made thin enough to cut or injure the belt when subjected to such strain. When the belt is designed to run over a single train of pulleys, the plate may be of a length somewhat greater than the width of the belt, the length of the slot being exactly the width of said belt. In this case the buckle will project at each side of the belt, which would interfere with the shifting devices if the belt were used on a double train of pulleys, and shifted from one to the other, as is sometimes necessary. To obviate this difficulty, when a shifting-belt is required the buckle is made somewhat less in length than the width of the belt, and the ends of the same are cut on each side so as to fit the

slot. When a very wide belt is employed the center is subjected to great strain, which might pull the ends of the belt out of the buckle, if one large buckle, extending entirely across the belt, should be employed. To obviate this, two smaller buckles may be used and applied to the belt, by dividing its ends longitudinally, midway between the two sides of the same for a short distance, and cutting the material away on opposite sides of the ends, so as to leave a tongue on each end, which will lie side by side when the ends are brought together, over which the buckles may be secured, as shown in Fig. 3. The buckle is applied to the belt by simply placing the inner surfaces of the ends of the belt together and slipping it over the same to a sufficient distance. The belt is then stretched over the pulleys, when the longitudinal strain thus given will cause the binding-edges *b b* to impinge against the ends of the belt, the flanges on the upper side of the buckle causing the said ends to take a wedge-shape, which will effectually prevent these from being drawn out. It will be seen that the buckle is entirely on the outer surface of the belt, and can by no possibility come in contact with the pulley, thus avoiding all the slipping attendant upon the use of the metallic fastenings heretofore employed, and the consequent loss of power and irregularity of motion in running the belts.

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

The method of uniting the ends of machine-belts by means of a metallic buckle, slotted longitudinally and adapted to set over said ends, the width of such slot being exactly the same or slightly less than that of the two ends, so that the ends, when the belt is stretched longitudinally, will impinge against and be held by the edges of the slot without the use of a wedge or key, substantially as described.

Dated at Hamilton, Ontario, Canada, March 19, 1875.

C. CHAPIN ROE.

In the presence of—
WM. BRUCE,
H. G. STONE.