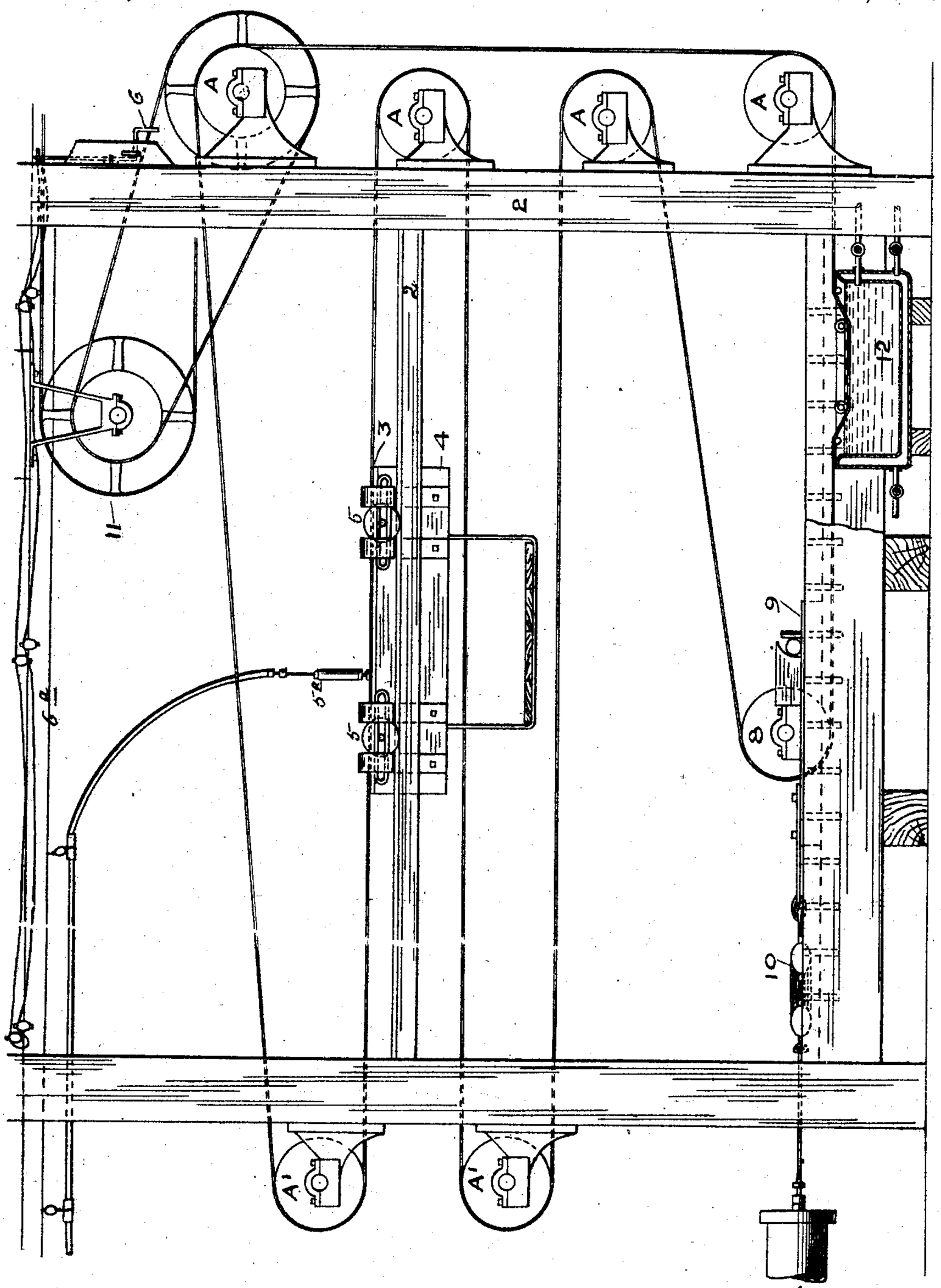
M. H. & C. G. COOK.

APPARATUS FOR STRETCHING AND STRAIGHTENING LEATHER BELTING.

APPLICATION FILED OCT. 4, 1907.

908,958. Patented Jan. 5, 1909.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR STRETCHING AND STRAIGHTENING LEATHER BELTING.

No. 908,958. Specification of Letters Patent. Patented Jan. 5, 1909.

Application filed October 4, 1907. Serial No. 395,969.

To all whom it may concern:

Be it known that we, MILTON H. COOK and CLIFFORD G. COOK, both citizens of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Apparatus for Stretching and Straightening Leather Belting, of which the following is a specification.

Our invention relates to an apparatus which is especially designed for the stretching and straightening of leather belting to prepare it for permanent use.

It consists in the combination and arrangement of parts which will be more fully explained by reference to the accompanying drawing, in which the figure is an elevation showing our invention.

The leather of which belting is made is taken ordinarily from skins of animals, which have been tanned, and the strips cut from the leather are cemented, riveted and otherwise secured together to provide as great a length as may be required for the belt. Leather has various degrees of firmness, and a belt thus made up will stretch unequally and the edges will not run truly, when subjected to the ordinary working strain to which belts are subjected.

Our apparatus is designed to provide a means by which the completed belt may be straightened and stretched to a condition which will prepare it for regular use, and test the strength of the leather and the joints. This apparatus consists of a frame-work 2 which may be composed of vertical and horizontal timbers framed together and having any desired length between the verticals. Upon the vertical posts of the frame are journaled drums or pulleys A—A′. These pulleys are in line with each other, so that a belt may be carried over these pulleys backward and forward until the full length of the belt is in position.

We have here shown a number of pulleys upon each vertical portion of the frame-work, and they are so journaled that the peripheries of two of the pulleys stand further away from the frame than two which are intermediate thereof. This enables a long belt to be passed over all the pulleys, the belt extending from the peripheries of the upper and lowermost drums and beyond the line of travel of the intermediate pulleys, so that the belt passing over a pulley at the opposite end of the frame may return to one of the intermediate pulleys; and passing around this pulley it may again pass to another pulley at the opposite end of the frame, again turning over another of the intermediate pulleys and thence around the tension pulley, to be hereafter described, returning over the lowermost of the pulleys which, being projected beyond the periphery of the intermediate pulleys, allows the belt to pass to the upper pulley without contact of said intermediate pulleys.

The tension pulley 8 is journaled upon a suitable carriage 9 which is slidable in guides upon some portion of the frame-work. It is here shown as slidable upon the lower horizontal timbers of the frame, and by means of a stretching tackle 10 connected with the carriage 9 the pulley 8 may be drawn away from the pulleys A, so as to subject the belt to any degree of tension desired. It will be manifest that this tension may be effected by connection of a permanent weight with the stretching tackle, or the latter may be operated by hand to produce any desired tension, and then secured at that point, or by air screw, or hydraulic devices.

Power may be applied to drive the belt and the pulleys around which it passes, from a supplemental pulley, as at 11, which may be connected with any desired motor, and by means of a belt to a pulley upon the shaft of one of the pulleys A, the power may be transmitted to revolve the whole series. This enables us to stretch the belt to any desired degree, and this stretching, by reason of the unevenness of the leather, will develop irregularities in the travel of the belt, the edges of the belt in some parts stretching so that they will project out of the line of travel, while other portions will be correspondingly drawn in the other direction, thus causing the belt to run very irregularly. In order to overcome this defect and to properly straighten the belt, we have shown a plate or anvil 3 mounted upon a carriage 4, which carriage is provided with rollers 5 or guides so that it may travel freely upon horizontal members of the frame-work 2. In the present case it is illustrated as traveling upon the upper portion of the frame, and in a plane just below that portion of the belt which extends between the upper pulleys at opposite ends of the frame, so that this portion of the belt travels in close proximity with the plate or anvil. This plate or

anvil is supported so as to be sufficiently solid to resist the action of a hammer, and as the belt is passed over the anvil a hammer of any description may be used to give blows upon the leather. Such hammer may be electrically operated, or it may be pneumatic, or other equivalent hammer by which rapid blows may be imparted, and the portion of the belt being brought over the anvil will be operated upon by the hammer. 5ª shows such hammer and its connections. The result of this hammering is to loosen the fibers of the leather, and to so equalize the leather that all kinks or bends and irregularities in the edges of the leather will be removed, and the belt will run in a straight line.

The anvil carriage may be propelled from point to point by ropes or by hand, and the belt may be stopped at any point with relation to the carriage and anvil by a belt shifting lever 6, fast and loose pulleys, and ropes 6ª leading within reach of the operator on the carriage, and in this manner stopped at any point where the treatment of the belt is required.

By thus hammering the leather and applying a tension thereto, the belt will gradually be brought into a straight condition, and the stretching will bring it to a condition approximately such as it will take after long actual use, and thus the expense and delay of continually taking up the belt as it stretches by travel will be avoided.

The belts may be subjected to a dressing or finishing process or treatment as follows: 12 is a shallow tank conveniently located, and adapted to contain oil, water, or other suitable liquid for dressing the leather. Water may be used on water-proof cemented belts, or oil, or oil and tallow for regularly cemented belts. The tank is provided with a steam or water jacket, or other means for applying heat, and the belt is caused to pass through the warm liquid. This treatment tends to set the fibers of the leather in their elongated condition. After the belt is removed from the machine it may be trimmed in the usual manner and made ready for use.

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

1. An apparatus for stretching and preparing leather belts, said apparatus including a frame-work, pulleys journaled thereon over which the belt passes, means for applying a tension to the belt, and means for equalizing the tension of the fibers of the leather, said means including an anvil and a hammer between which the belt is caused to pass continually under tension.

2. An apparatus for preparing leather belts for use, said apparatus including pulleys over which the belt passes, means for applying a tension to the belt in the direction of its length, and an anvil and an opposed hammer between which the belt passes whereby the surface of the leather may be continuously hammered to equalize the internal tension of the leather.

3. In an apparatus for preparing leather belts for use, a frame-work, pulleys journaled upon opposite ends of said frame-work and so related that a belt may be passed backward and forward between the pulleys, means for imparting an endless travel to the belt, a tension pulley, an independent carriage upon which said pulley is journaled, and means for applying force to the carriage, and a pull upon the belt, and an anvil and hammer between which the belt passes to subject its surface successively and continuously to the blows of the hammer.

4. In an apparatus for preparing leather belts for permanent use, a frame-work composed of horizontal and upright members, pulleys journaled upon the uprights at opposite ends, said pulleys having peripheries so disposed with relation to each other that a belt may pass over the upper and lower pulleys without contact with the intermediate ones, a tension pulley, a carriage upon which it is mounted, means for applying tension to the belt passing over said pulley, a traveling cradle or frame having an anvil or plate mounted upon it directly beneath the line of travel of one portion of the belt, whereby the latter may be hammered upon the anvil, and means whereby the anvil carrying frame may be moved along the line of the belt as the work proceeds.

5. An apparatus for dressing and preparing leather belting, including means for hammering the belt, means for stretching the belt, and means for applying a warm liquid thereto.

6. In an apparatus for preparing leather belting, mechanism by which the belt is subjected to tension, means for hammering the belt while traveling, and a warm liquid-containing tank through which the moving belt is caused to travel.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

MILTON H. COOK.
CLIFFORD G. COOK.

Witnesses:
S. H. NOURSE,
F. E. MAYNARD.