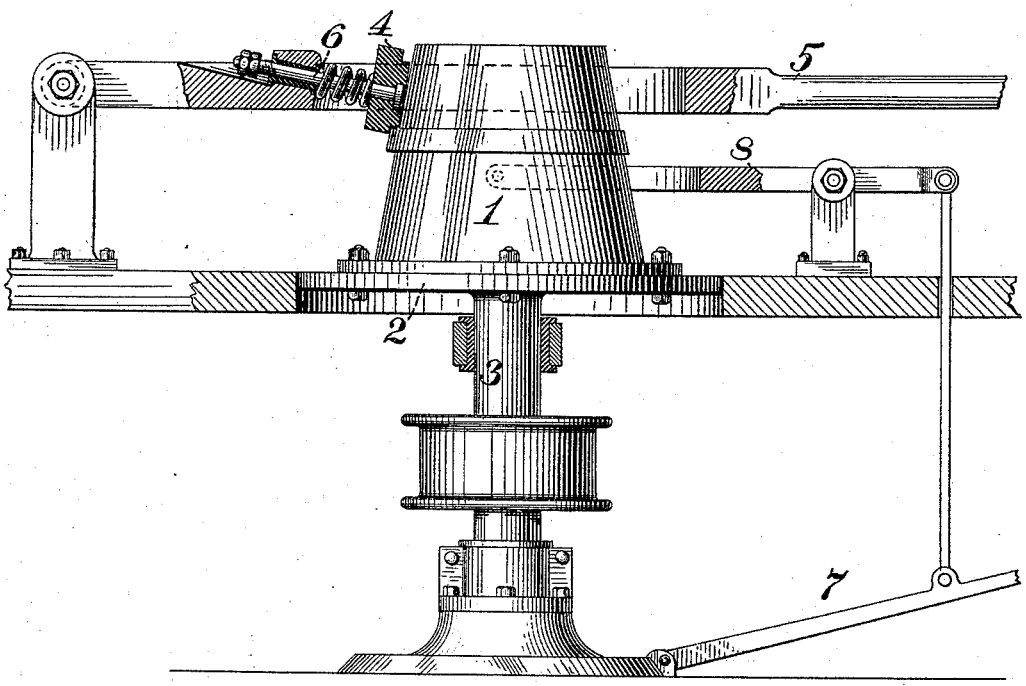
(No Model.)

E. J. COCHRAN.

MANUFACTURE OF HOOPS.

No. 492,348. Patented Feb. 21, 1893.



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UNITED STATES PATENT OFFICE.

EDWARD J. COCHRAN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WILLIAM GARRETT, OF JOLIET, ILLINOIS.

MANUFACTURE OF HOOPS.

SPECIFICATION forming part of Letters Patent No. 492,348, dated February 21, 1893.

Application filed April 11, 1892. Serial No. 428,620. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. COCHRAN, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in the Manufacture of Hoops, of which improvements the following is a specification.

The invention described herein relates to the manufacture of hoops, and has for its object the formation of a uniform bevel for all the hoops for any given size of barrel or pail.

It has heretofore been customary in the manufacture of hoops, to cut off a length of hoop iron equal to the length of the desired hoop, punch the rivet holes in the ends of the blank and then pass this blank between rolls which will act only along one edge of the blank, thereby elongating said edge sufficiently to produce when the ends of the blank are riveted together, a hoop of the desired bevel. This method of manufacturing hoops while efficient in producing hoops which shall be applied intermediate of the ends of the barrel or pail, is not sufficiently accurate in its results for the manufacture of the hoops which are to be placed on the ends of the barrel or lower end of the pail, for the reason that these end hoops, as I may term them, are forced on the barrels or pails only a distance equal to the width of the hoop, and hence, unless the hoop is accurately beveled, it will either be too large along its upper or inside edge, or else too small to fit on the barrels or pails. This inequality in the bevel of the hoops arises from many causes, the material of one blank may be softer than the other, and hence, the edge of the softer hoop will be more greatly extended than the hard hoop, or one blank may be wider than the other, and therefore subjected to a greater extension for a greater distance of its width than the narrow hoop. The same inequality in elongation of different blanks will result from varying thicknesses of the blank.

The present invention consists, generally stated, in subjecting a riveted hoop to a stretching operation along one of its edges in such manner as to elongate such edge to exactly the required extent.

In the accompanying drawing forming a part of this specification is shown, partly in section and partly in elevation, a machine adapted for the practice of my invention.

In the practice of my invention, the hoop iron is cut off into blanks whose length when bent into a hoop form and its ends riveted together, will not exceed and is preferably less than the shortest perimeter of that portion of the pail or barrel, which the hoop is to occupy. These blanks having their ends riveted together are then dropped over a cone 1, which is secured to a revolving disk 2, mounted on a shaft 3, provided with a pulley by which the shaft is rotated. This cone, whose upper end is of less diameter than the diameter of the hoop to be beveled, is made of the size and shape corresponding to that of the pail or barrel, or rather, half of the barrel, to which the hoops are to be applied, and on said cone are placed suitable marks or indices which will show the distance which the hoops must be pressed in order to stretch them to the required size. The hoop having been placed over the cone, the lever 5 is shifted so as to bring a roller 4 on pin 6 attached thereto, into contact with the hoop, thereby progressively pressing the hoop along the cone. As the hoop will revolve with the cone, it is obvious that every part thereof will be gradually and progressively pressed down by the action of the lever and roller until it shall have attained the desired position on the cone. Then the lever 5 is raised and the attendant places his foot on the treadle 7, thereby raising the inner end of the lever 8, which is connected to the treadle, and lifting the hoop off the cone. The hoops should be made of such a circumferential length prior to stretching that, when forced to the proper place upon the cone, the metal of the hoop will have been stretched beyond its elastic limit, so that when forced upon a barrel or pail any swelling or enlargement thereof will not effect an enlargement of the hoop, so that when the hoop has once been forced into position, it will remain there until driven off.

It will be readily understood by those skilled in the art that by making the cone of the same size as the barrel or pail to which the hoops are to be applied, the latter may be stretched so that both edges thereof and the parts intermediate of the edges will closely hug the barrel or pail when driven thereon. And fur-

ther, as the metal of the hoops is stretched beyond the elastic limit thereof, they will not readily yield to any swelling of the barrel, and will thereby avoid an objectionable feature at present found in such hoops the metal of which is not stretched beyond its elastic limit, and will therefore expand with the swelling of the barrel, and if such swelling is excessive, will be stretched beyond the elastic limit of the metal, and will not, therefore, return when the wood contracts in drying.

I claim herein as my invention—

1. As an improvement in the art of manufacturing hoops the method herein described, which consists in uniting the ends of a strip of metal, thereby forming a hoop of less diameter than desired in the finished article, and bringing the hoop to the desired size by stretching the metal thereof beyond its elastic limit, substantially as set forth.

2. As an improvement in the art of beveling hoops the method herein described, which consists in subjecting one edge of a hoop to a greater elongation or extension than the opposite edge, such stretching or elongation being sufficient to effect a set of the metal along the enlarged edge, substantially as set forth.

3. As an improvement in the art of manufacturing hoops, the method herein described which consists in stretching the metal of a hoop beyond its elastic limit, one edge being subjected to a greater elongation than the opposite edge and thereby beveling the hoop, substantially as set forth.

In testimony whereof I have hereunto set my hand.

EDWARD J. COCHRAN.

Witnesses:

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