

C. L. BRÉHIER.
 APPARATUS FOR MANUFACTURING METALLIC HOOPS.
 APPLICATION FILED SEPT. 20, 1910.

1,021,300.

Patented Mar. 26, 1912.

3 SHEETS—SHEET 1.

Fig. 1

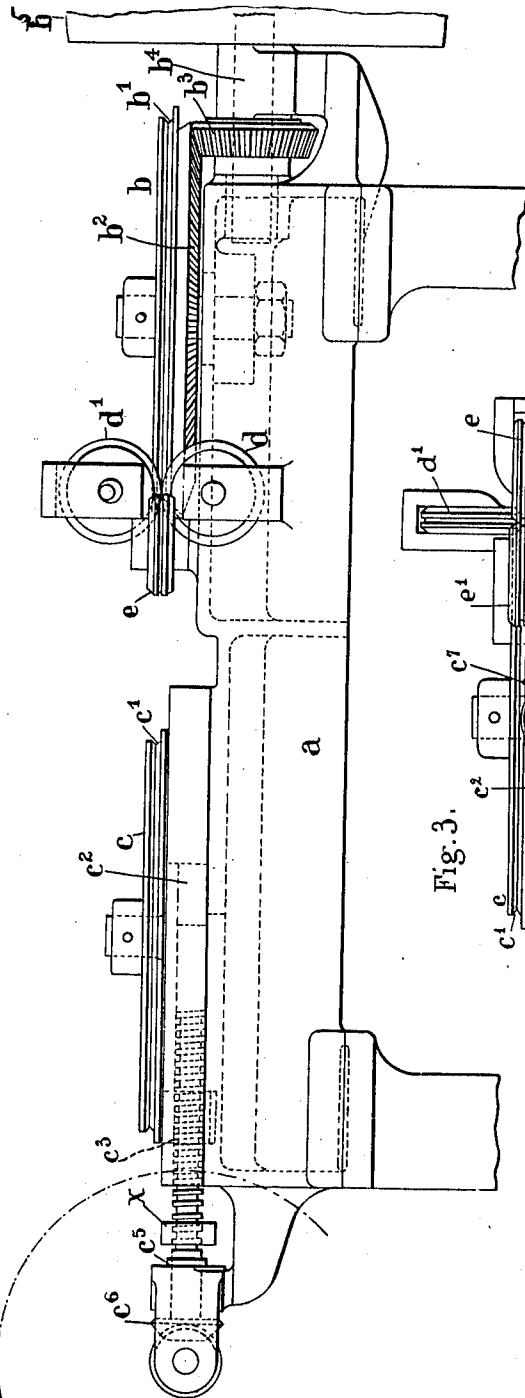
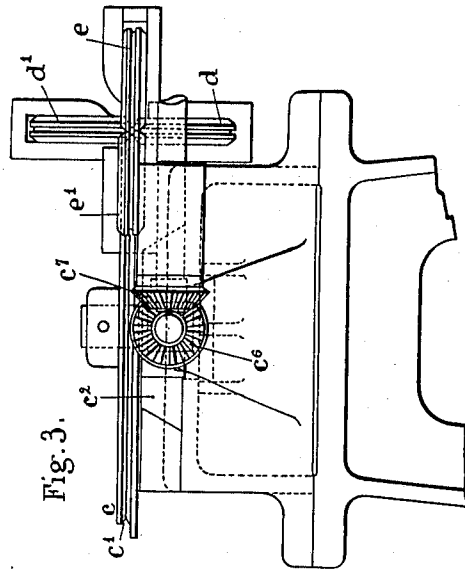


Fig. 3.



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3 SHEETS—SHEET 2.

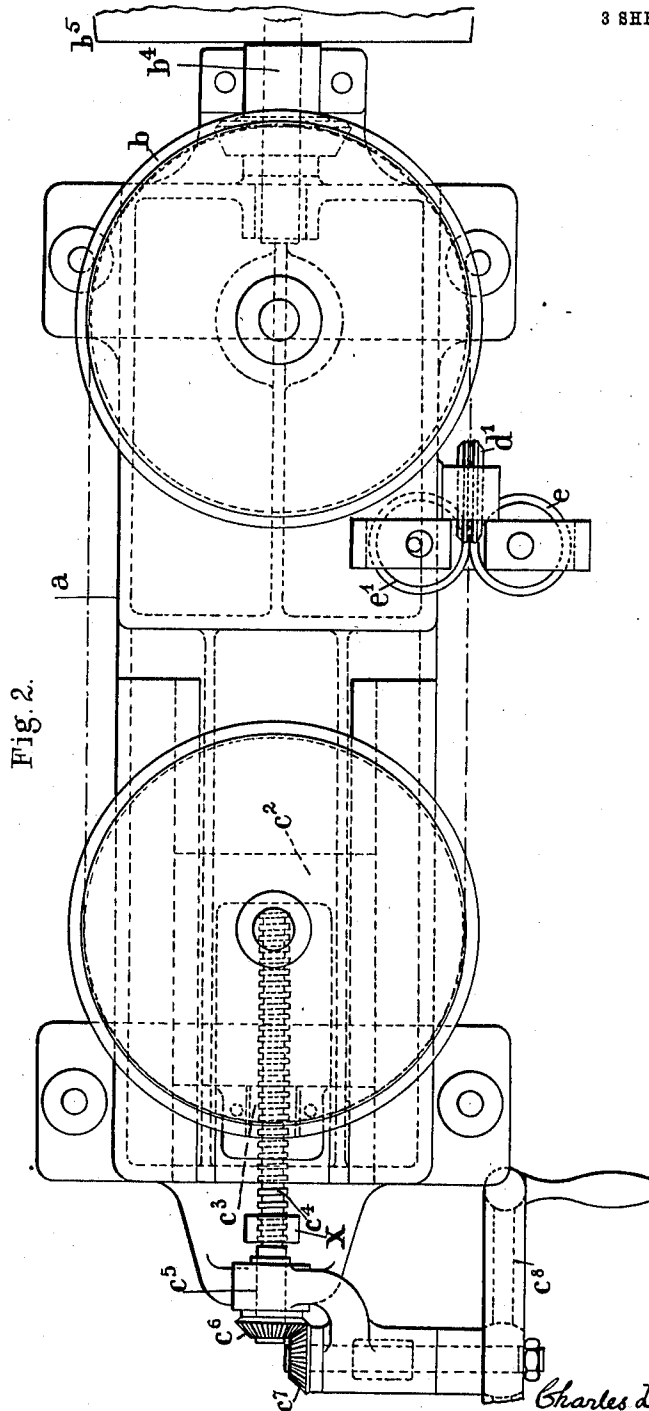


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 4.

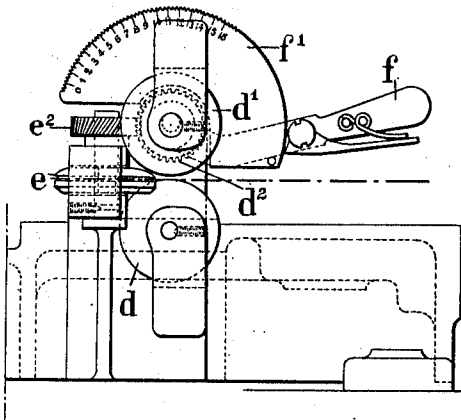


Fig. 5.

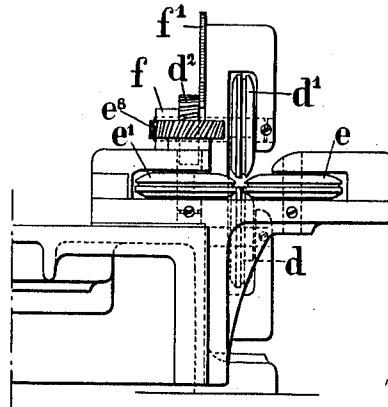
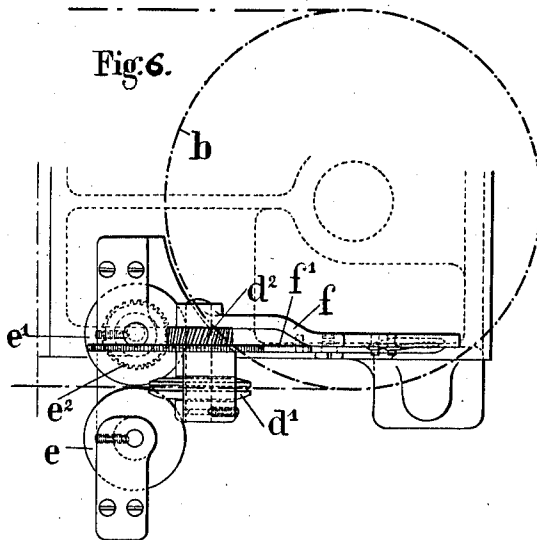


Fig. 6.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MANUFACTURING METALLIC HOOPS.

1,021,300.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed September 20, 1910. Serial No. 582,904.

To all whom it may concern:

Be it known that I, CHARLES LÉON BRÉHIER, a citizen of the Republic of France, and a resident of 52 Rue de l'Ourcq, Paris, France, have invented a new and useful Apparatus for Manufacturing Metallic Hoops, of which the following is a specification.

This invention relates to an apparatus for the manufacture of metallic hoops or circles by the rolling of rings which have been produced in any manner. This apparatus is characterized by a system of driving the hoops independently of the rolling means which turn freely, consisting of two disks having grooved edges around which the circle or hoop is stretched, one of them being driven and the other free, but subjected to a pull which tends to draw it away from the first. The metallic circle or hoop placed around the two disks is therefore submitted to a tension which gives it a sufficient adhesion upon the driven disk to allow it to overcome the resistance of the rolling means. For the purpose of automatically suspending this tension a stop adjustable in position is arranged in the path of the tensioning disk. Consequently the rolling ceases when the circle has attained a diameter or caliber determined by the position given to the stop. The apparatus is represented by way of example in the annexed drawing, in which:—

Figure 1 is a view in front elevation. Fig. 2 is a corresponding plan. Fig. 3 is a side view. Figs. 4 and 5 are elevations at right angles to each other of the means for adjusting the forming rolls; and Fig. 6 is a plan thereof.

The apparatus comprises a frame *a* at one of the extremities of which is pivoted a horizontal disk *b* having a groove *b'* and comprising at its lower part a toothed crown *b²* meshing with a bevel pinion *b³* keyed or secured upon the shaft *b⁴* of the main drive carrying a driving pulley *b⁵*. At the other end of the frame is a second disk *c* having a similar groove *c'* of the same diameter as the groove *b'* of the disk *b*; this disk *c* is freely pivoted upon a slide *c²* which is displaced longitudinally by any suitable mechanism. For example it is shown as sliding upon a dove-tail in the frame *a*, and carrying a nut *c³* in which is engaged a screw *c⁴* rotatively maintained in a support *c⁵* fixed upon the side of the frame. The end of the screw *c⁴* carries a bevel pinion *c⁶* in mesh

with a second beveled pinion *c⁷* journaled at right angles and operated in any suitable way, for example by means of a hand wheel *c⁸*.

In front of the frame *a* are arranged the pairs of rollers *d d'* and *e e'* at right angles to one another and journaled freely in their support. The rollers *d'* and *e'* are mounted eccentrally so as to be progressively displaceable at will toward or away from the corresponding rollers *d* and *e* which are fixed in position.

The eccentric axes of the rolls *d'* and *e'* may be simultaneously made to approach their coöperating rolls *d* and *e* progressively as the rolling and drawing of the hoop proceeds, in any suitable way, for example by means of the hand lever *f* fast on the axis of the roll *d'*. A spiral gear *d²* likewise fast on this axis meshes with a coöperating spiral gear *e²* keyed on the axis of the roll *e'*. The lever *f* is provided with a spring latch by which it is held in position upon the toothed segment *f'* which is suitably graduated to indicate the position of the rolls and thus the gage of the hoop.

A stop *x* adjustable in position is arranged upon the screw *c⁴* in the path of the slide *c²* in such a way that when it is arrested thereby, the pull upon the circle ceases and as the drawing action continues, the adhesion of the circle upon the driving disk *b* diminishes until the time when it becomes less than the resistance offered to the advance of said circle by the rolling device. The position of the stop will have been so fixed that at this moment the circle or hoop has exactly the required diameter or caliber.

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

1. An apparatus for the manufacture of metallic hoops from rings comprising a pair of grooved disks, one loose and one driven, upon which the ring is stretched, a set of loose reducing rolls arranged in the path of the ring and means for drawing said loose disk away from the driven disk to maintain the tension of said ring upon the driven disk during the operation of the apparatus.

2. An apparatus for the manufacture of metallic hoops from rings comprising a pair of grooved disks, one loose and one driven, upon which the ring is stretched, a set of loose reducing rolls arranged in the path of

the ring and means for drawing said loose disk away from the driven disk to maintain the tension of said ring upon the driven disk during the operation of the apparatus, 5 in combination with a stop arranged in the path of said drawing disk to automatically relieve the tension and thus stop the drive of the ring through the reducing rolls after the ring has reached the desired caliber.

10 3. An apparatus for the manufacture of hoops or circles by the drawing of metallic rings, comprising a frame, a disk mounted upon said frame, said disk having a grooved periphery, means for revolving said disk, a 15 second disk mounted upon said frame, said second disk having a grooved periphery, means for adjusting the relative position of said disks, and drawing rollers mounted in pairs in line with said grooved peripheries.

20 4. An apparatus for the manufacture of hoops or circles by the drawing of metallic rings, comprising a frame, a disk mounted upon said frame, said disk having a grooved periphery, means for revolving said disk, a 25 second disk mounted upon said frame, said second disk having a grooved periphery, means for adjusting the relative position of said disks, a stop arranged in the path of said second disk, said stop being adjustable

in position and adapted to arrest the action 30 upon reaching the desired extension, and drawing rollers mounted in pairs in line with said grooved peripheries.

5. An apparatus for the manufacture of hoops or circles by the drawing of metallic 35 rings, comprising a frame, a disk revolubly mounted upon said frame, said disk having a grooved periphery, a crown bevel wheel secured to said disk, a bevel pinion meshing with said bevel wheel, a shaft upon which 40 said bevel pinion is keyed, a driving pulley keyed upon said shaft, a second disk, said second disk having a grooved periphery, a slide upon which said second disk is revolubly mounted, said slide being slidable 45 upon a dove-tail on said frame, a nut carried by said slide, a screw engaging said nut, means for revolving said screw, a stop mounted upon said screw, and drawing rollers mounted in pairs in line with said 50 grooved peripheries.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES LÉON BRÉHIER.

Witnesses:

CHARLES DONY,
LEON PEILLET.