G. E. Smith.

Hoop-Bending Mach.

No. 95,845. Patented Oct. 12, 1869.

Fig. 1.

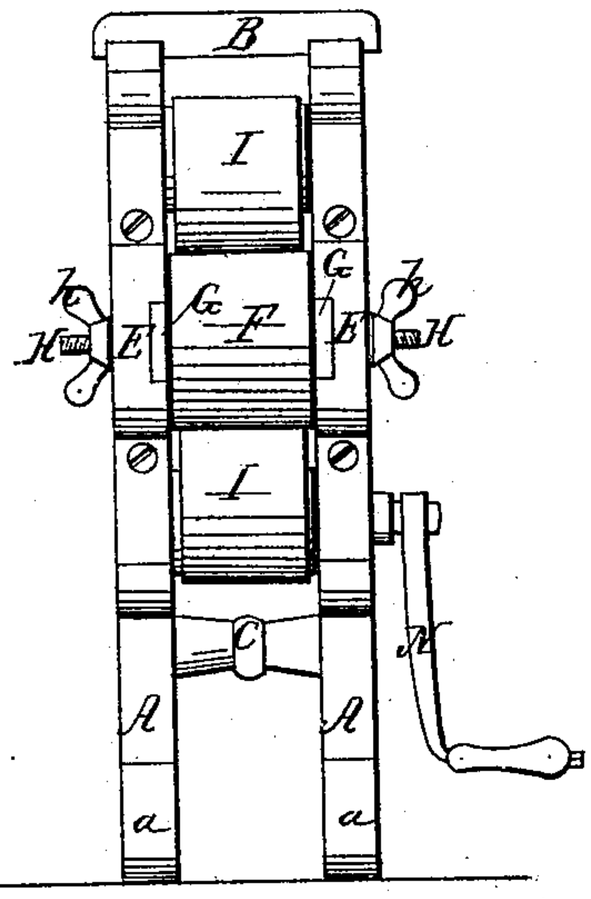

Fig. 3.

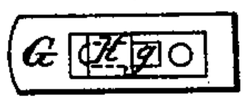

Fig. 2.

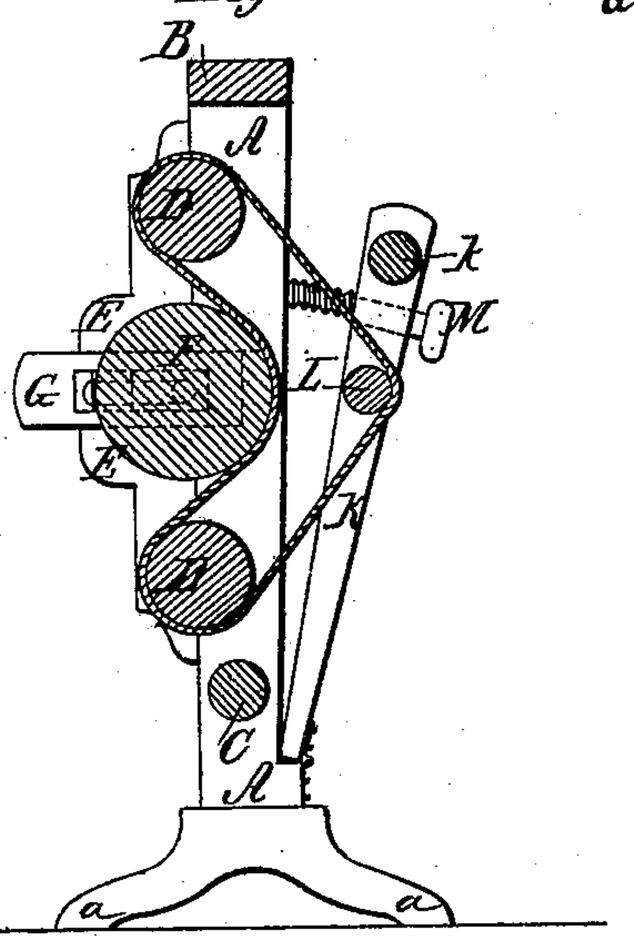

Fig. 4.

Witnesses;
F. W. Howard
Saml. J. Marr.

Inventor;
Geo. E. Smith
by Rindle and Dyer.
Attys.

United States Patent Office.

GEORGE E. SMITH, OF MIDDLEPORT, NEW YORK.

Letters Patent No. 95,845, *dated October* 12, 1869.

IMPROVEMENT IN HOOP-BENDING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE E. SMITH, of Middleport, in the county of Niagara, and in the State of New York, have invented certain new and useful Improvements in Hoop-Bending Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a front elevation of my improved device;

Figure 2 is a vertical cross-section of the same;

Figure 3 is a side view of the slide for adjusting the bending-roller; and

Figure 4 is a cross-section of the same.

Letters of like name and kind refer to like parts in each of the figures.

My invention has for its object the bending or forming of hoops to the required circle; and to this end,

It consists in the peculiar combination and arrangement of a series of rollers, connected by means of a belt or band, and also in the means employed for adjusting the tension of said band, and for changing the relative positions of said rollers, whereby the size of the circle to which the hoop is bent, is increased or diminished, as may be desired.

In the annexed drawing—

A A represent two uprights, suitably supported upon feet *a a*, and connected together at the top by a cross-bar, B, and near the bottom by a roller, C, the whole forming the frame of the machine.

D D represent two rollers, suitably journalled upon the front side of the frame, the bearings for the journals being partly within the uprights and partly within a cap, E, secured to the front of each.

Midway between the rollers D D, is another roller, F, journaled within the inner ends of two slides G G, which correspond with and are fitted into dovetailed grooves or rabbets, within the inner faces of the caps and uprights, so as to slide horizontally and allow said roller to be adjusted to and from the other rollers.

In order that the slides may be secured in position when adjusted, a bolt, H, is passed through a longitudinal slot, *g*, in each slide, and through an opening in the cap, and has upon its outer end a wing-nut, *h*, which, when turned to the right, firmly binds the slide against the cap, and prevents it from moving.

Although the bolt is stationary, the slot within the slide permits said slide to move freely in or out when said bolt is loosened.

The rollers are connected by means of a belt, I, passing around the upper and lower ones and pressing against the centre roller, but as the tension of said belt would vary with each adjustment of said roller, the following-described means are employed for obviating such difficulty.

A frame, K, consisting of two uprights, joined together at their upper ends by a cross-bar, *k*, is hinged at its lower end to the uprights A A, as shown in fig. 2.

Journalled within said frame, in a line with or parallel to the before-described rollers, is a small roller, L, around which is passed the belt from above and below the rollers D D.

A screw, M, passes through each side of the frame K, and bears at its inner end against the upright A, so that by turning said screws to the right or left, the upper end of said frame K and the roller L are adjusted to or from the main frame, and the tension of the belt correspondingly changed.

A crank, N, secured to the extended journal of the lower roller, completes the device, which is operated as follows:

The end of the hoop is pressed between the belt and the lower side of roller F, (the inner side of the hoop being against the roller,) and the crank turned to the left, by which means said hoop will be drawn around said roller, and, by the pressure of the belt, bent to an accurate circle, the diameter of which will depend upon the relative position of the rollers.

This machine possesses many advantages, among which are—

First, a great saving in time, as by its use one man can accomplish as much labor in a given time as has heretofore been performed by two men.

Second, the hoops are more perfectly shaped than those produced by other means, and are neither broken nor otherwise injured by the process, whereby an additional saving results, there being no waste of material, as is usual.

Having thus fully set forth the nature and merits of my invention,

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

The within-described device, consisting of the frame A A, B, and C, the rollers D D, F, and L, the adjustable slides G, bolts H, and nuts *h*, the belt I, and the adjustable frame K, all constructed and arranged substantially as and for the purpose specified.

In testimony that I claim the foregoing, I have hereunto set my hand and seal, this 24th day of July, 1869.

GEO. E. SMITH. [L. S.]

Witnesses:

GEORGE BROWN,

ROLLIN TURNBULL.