A. W. Johnston,

Bending Wood,

No. 8,511, Patented Nov. 11, 1851.

Fig. 1

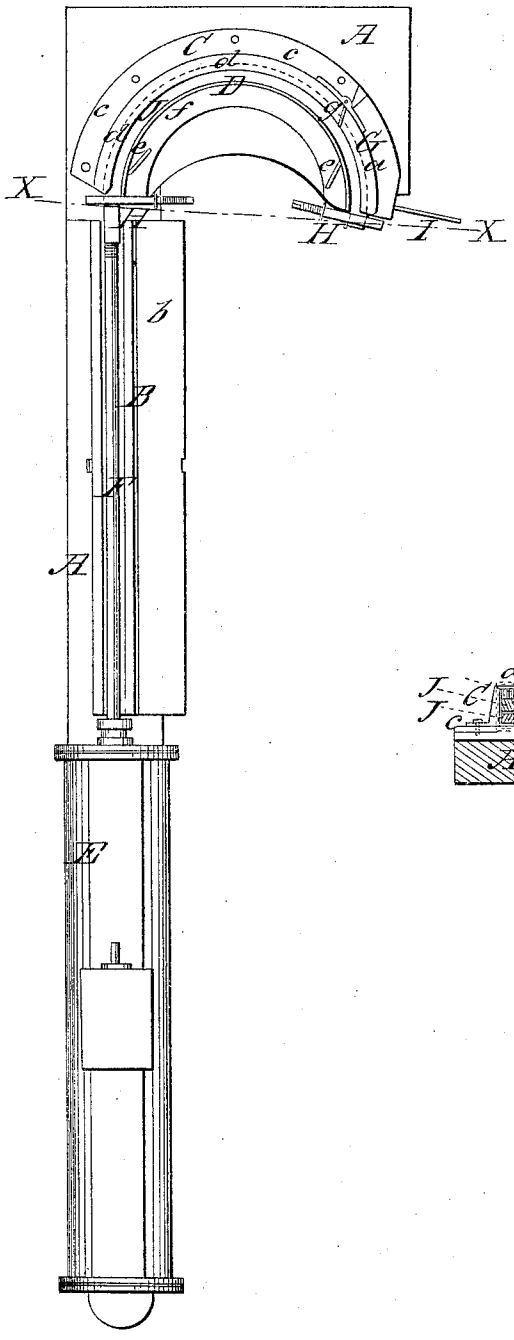
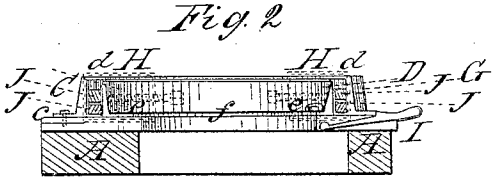


Fig. 2



UNITED STATES PATENT OFFICE.

A. W. JOHNSTON, OF ST. GEORGES, DELAWARE.

BENDING FELLY.

Specification of Letters Patent No. 8,511, dated November 11, 1851.

To all whom it may concern:

Be it known that I, ANDREW W. JOHNSTON, of St. Georges, in the county of Newcastle and State of Delaware, have invented a new and Improved Machine for Bending Fellies for Wheels of Carriages, Wagons, and the Like; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a plan or bird's eye view. Fig. 2 is a transverse section taken at the line X, X, Fig. 1.

Similar letters of reference indicate corresponding parts in each of the two figures.

The nature of my invention consists in forcing the felly timber either by steam or other power between two curved curbs, said curbs being placed upon a bed piece and the outer or larger curb firmly secured to it, the felly timber after being forced between the curbs, is secured by clamps to the inner or smaller curb; and the smaller curb with the felly attached is removed from the bed piece by withdrawing the pins or bolts which hold it to the bed piece, the felly timber is forced out of a narrow box before entering the space between the curbs in order to prevent the bending of the timber and thus allow the power to act direct upon the end of the timber, or the felly timber may pass between the friction rollers which will answer the same purpose.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, represents the bed piece constructed of wood or any proper material.

B, is a narrow box placed on the bed piece and in which the felly timber J, is placed preparatory to being forced between the curbs, and confined by a lid *b*, which is represented as being open in Fig. 1.

C, is the larger or outer curb this is little more than a half circle in shape and has a lower flanch *c*, through which holes are drilled and the curb C, secured to the bed piece by bolts or screws.

D, is the inner or smaller curb this is of the precise shape of the larger curb C, and has a flanch *f*, through which the bolts *e*, *e*, pass and thus secure it to the bed piece; these bolts are withdrawn and the curb D, released from the bed piece when desired. A sufficient space is left between the curbs C, D, to allow the felly timber J, to pass between them.

d, is a flanch on the top of the large or outer curb C, projecting inward a short distance over the space between the curbs, and consequently over the felly J, when between them, thus preventing the felly from being forced out at the top of the curbs.

E, is a steam cylinder on the bed piece A, and F, is a piston rod, which passes into the main box B, and forces out the felly timber into the space between the curbs.

H, H, are clamps by which the felly is secured to the inner curb D, a good idea of them may be formed by referring to Fig. 2, a screw binding the felly between one edge of the clamp and the inner curb.

Operation: The felly timber is placed in the narrow box B, and power applied, the rod F, acts against the end of the felly timber forcing it out of the box and between the curbs C, D, it will be seen that the felly is prevented from bending in consequence of being confined in the box B, and without the box or some equivalent device the felly timber could not be forced between the curbs. When the felly is between the curbs as seen in Fig. 1, the clamps H, H, are applied and the felly secured to the inner curb D as seen in Fig. 2. It will be seen and borne in mind that the curbs C, D, form rather more than a half circle, now in order to remove the inner curb D, and felly J, which is attached to it, a portion G, of the outer curb C, is moved out it being connected to the other part of the curb by a hinge or joint *g*, the bolts or pins *e*, *e*, are removed in order to release the curb D, from the bed piece, the felly remains upon the curb till sufficiently dry to retain its shape. The object in having the curbs form rather more than a half circle is that the ends of the felly may be distended or sprung and form a wheel larger than the circle of which the curbs form a part, thus different sized wheels may be made of fellies bent by the same machine.

I, Fig. 2, is a catch which receives the part G, of the outer curb C, in its proper place while the felly is being forced between the curbs.

It is designed to have several inner curbs

D, on hand so that the machine may not be idle in consequence of the time required in drying the fellies. The curbs may be constructed of such a depth as to receive one or more fellies at once in Fig. 2, two fellies are represented between the curbs.

In the ordinary method of bending fellies a cylinder is used and in turning it a roller bears against the felly by this method the outer fibers of the timber are strained and consequently great breakage ensues. I am confident as I have practicably tested it that the fibers of the timber are not strained so much by my machine as by the old method, the breakage being much less than the cylinder machine.

Having thus described the nature and operation of my invention, what I claim as new and desire to secure by Letters Patent, is—

The curbs C, D, in combination with the box B, or its equivalent said curbs being constructed in the manner and for the purpose substantially as described.

A. W. JOHNSTON.

Witnesses:
J. B. MOORE,
JAMES HUSTON.