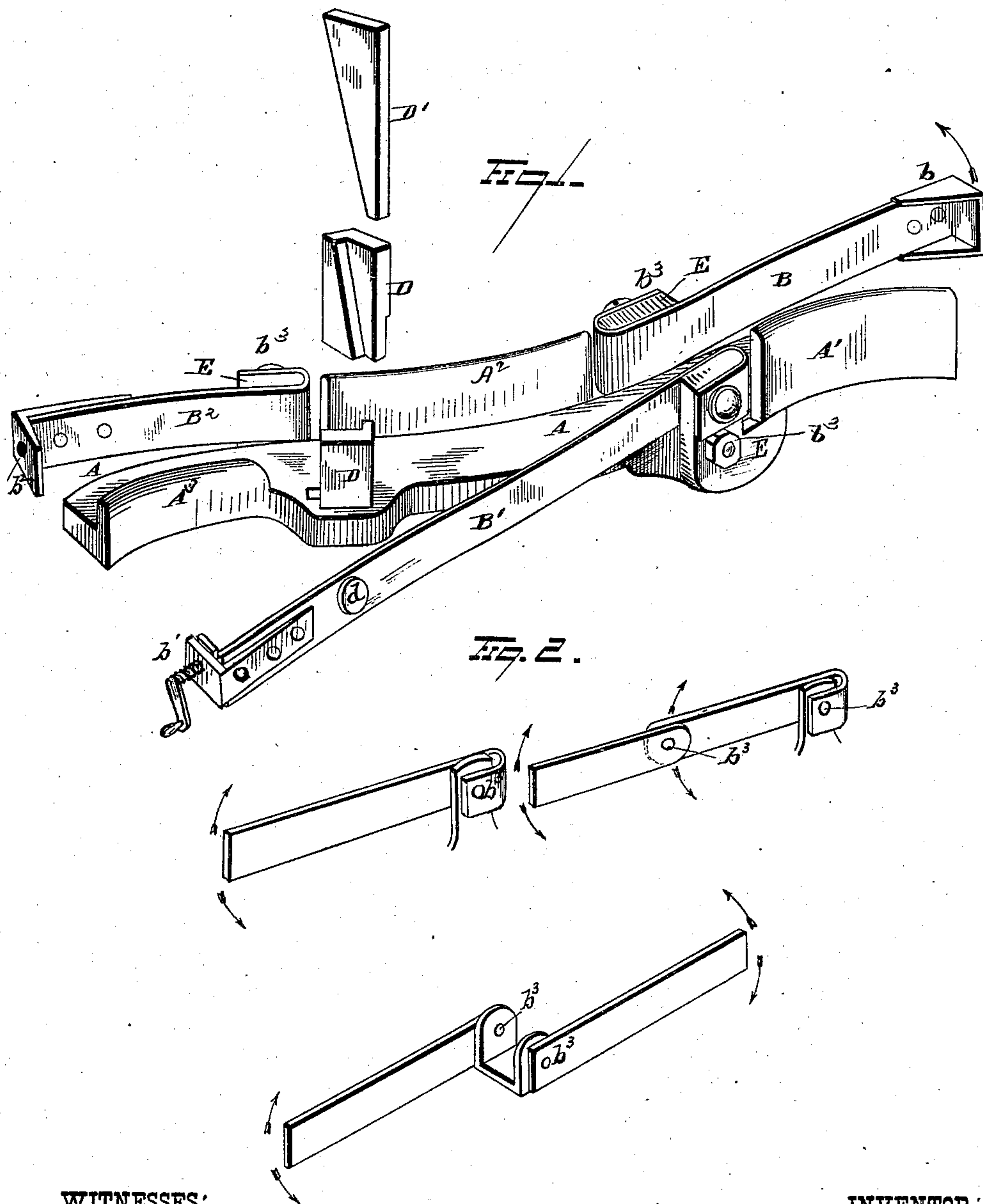


(Model.)

K. J. RUFF.  
Machine for Bending Snaths.

No. 232,547.

Patented Sept. 21, 1880.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

KARL J. RUFF, OF SANDUSKY, OHIO.

## MACHINE FOR BENDING SNATHS.

SPECIFICATION forming part of Letters Patent No. 232,547, dated September 21, 1880.

Application filed April 22, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, KARL J. RUFF, of Sandusky, county of Erie, State of Ohio, have invented a new and useful Improvement in Machines for Bending Snaths; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improved apparatus for use in bending snaths for scythes, cradles, &c., and equally applicable for bending sticks of wood wherever the shape to be produced consists of bends lying in different planes; and it consists, essentially, in providing a suitably-shaped bed-plate or former with one or more bands adapted to receive the stick and apparatus connected with the bands for exerting end pressure, one or more of the bands at the heel, or intermediate between the heel and the free end, being pivoted so as to yield edgewise and conform to the stick as it is being warped from one plane into another, as will be hereinafter more particularly described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a bending apparatus embodying my invention. Fig. 2 is a separate view illustrating how the bands may be made flexible edgewise.

It will be understood in this description that the peculiar shape illustrated in Fig. 1 is not unvarying, but, on the contrary, that it represents only an apparatus for bending one of the various shapes to which snaths are bent, and that other shapes will require correspondingly-shaped forms and a greater or less number of bands, and may also require that one part of a band shall be pivoted upon the other part of the same band, so as to bend edgewise. The former is shaped to correspond with the shape to be imparted to the stick that is to be bent, the bed portion A giving the proper contour to one edge of the stick, and the flanges or cheek-pieces A' giving the desired shape to the other edge.

B B' B<sup>2</sup> are metallic straps, one of which, B, is provided with a rest, b, for one end of the stick, while another, B', can be brought into

line with the first, so as to admit of end pressure being applied to the other end of the stick by a suitable apparatus located at b'. The straps B B' B<sup>2</sup> are, respectively, hinged or pivoted at the points b<sup>3</sup> so as to yield edgewise about the said pivots.

The operation of the device is as follows: The stick, having been suitably softened by steam or otherwise, is placed upon the apparatus with one end against the inside of the rest b. The strap B' is then brought alongside of the stick, and with a suitable apparatus—as, for instance, screw or wedge mechanism—an end pressure is exerted against the end of the stick at b', so as to effect an upsetting action and prevent the fibers from breaking as the stick is bent. The end of the stick adjacent to the strap B is then forced down upon the bed portion A and in against the flange portion A' of the former, and the strap B yields at the same time edgewise about its pivot, to accommodate the movements of the stick. This part being then clamped to the former, the portion of the stick adjacent to the strap B' is then brought in against and made to conform to the corresponding flange and bed portion of the former, in which position it is firmly keyed by the key-wedges D D', or other suitable clamping mechanism, the strap having yielded edgewise about its pivot b<sup>3</sup> to conform to the edge movement of the stick. As the stick is here brought against the form it is lifted at the same time sufficiently to pass over the flange a'. The strap B' being then released from the end of the stick, the strap B<sup>2</sup> is brought against the stick and end pressure is again applied to the stick at the end b<sup>2</sup> of this strap. The stick is then bent at this part down upon and in against the form and clamped in place, the strap B<sup>2</sup> having yielded edgewise about its pivot b<sup>3</sup> during the operation.

In this operation it will be noticed that at each bending the stick is bent in two planes or directions—i. e., in against the flange and down upon the bed portion of the former—while an end pressure is maintained upon the stick during the entire operation of bending.

I do not limit myself to any particular shape of former, nor do I limit myself to a strap which is flexible only at its heel or point of at-



attachment, for it may be divided at any point intermediate of its length, and one piece pivoted to the other, so as to flex edgewise at that point, the circumstances in every case necessarily determining the peculiar construction. So, also, the straps may be made broad, so as to still hug the side of that portion of the stick that is upon the former, even though the strap may have to move to a considerable extent edgewise. The ears to which the straps are pivoted may, if necessary, be themselves pivoted, so as to be rotated out of the way of the stick when one portion is being bent. Such pivoted ears are shown at E in Fig. 1, that method being the one usually employed by me. In this case the pivotal points  $b^3$  are below the points of attachment of the strap itself to the ear; but in Fig. 2 the straps are represented as pivoted directly to the ears. The block D and the wedge D' are located outside of that portion of the device upon which the stick is to rest, so as to clamp the stick between the opposite upright flange A<sup>2</sup> and the strap B'.

The key-wedge D' rests at one edge in a recess formed in the part D, while its other edge rests against the lug  $d$ , attached to the strap, so that when the wedge D' is driven down it exerts as much strain on the strap as was before exerted by the end-pressure mechanism, and prevents the strap from slackening when the end pressure on the stick is removed.

What I claim is—

1. In a machine for bending snaths and like curved articles, the combination, with a bed-

plate provided with a lateral flange formed at an angle thereto, of a strap adapted to have edgewise movement to or from the bed-plate, and thereby be thrown in or out of line with said flange, substantially as set forth.

2. In a machine for bending snaths and analogous curved articles, the combination, with a bed-plate provided with a lateral flange extending angularly therefrom, of a strap pivoted to said bed-plate and adapted to be thrown in or out of line with said flange, substantially as set forth.

3. In a machine for bending snaths, the combination, with a bed-plate having the extremities of one side provided with lateral flanges and the middle portion of the opposite side provided with a lateral flange, of three straps respectively located opposite said flanges and adapted to have edgewise movement to or from the bed-plate, substantially as set forth.

4. In a machine for bending snaths, the combination, with a bed-plate provided with a wedge-seat and a wedge, of a strap having edgewise movement to or from the bed-plate, and provided with a lateral stud adapted to be engaged by said wedge, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

KARL JO. RUFF.

Witnesses:

A. F. HUBBELL,  
W. P. SPENCER.