

A.G. Snyder
Wood-Bending Mach.
N^o 87,981. Patented Mar. 16, 1869.

Fig. 1.

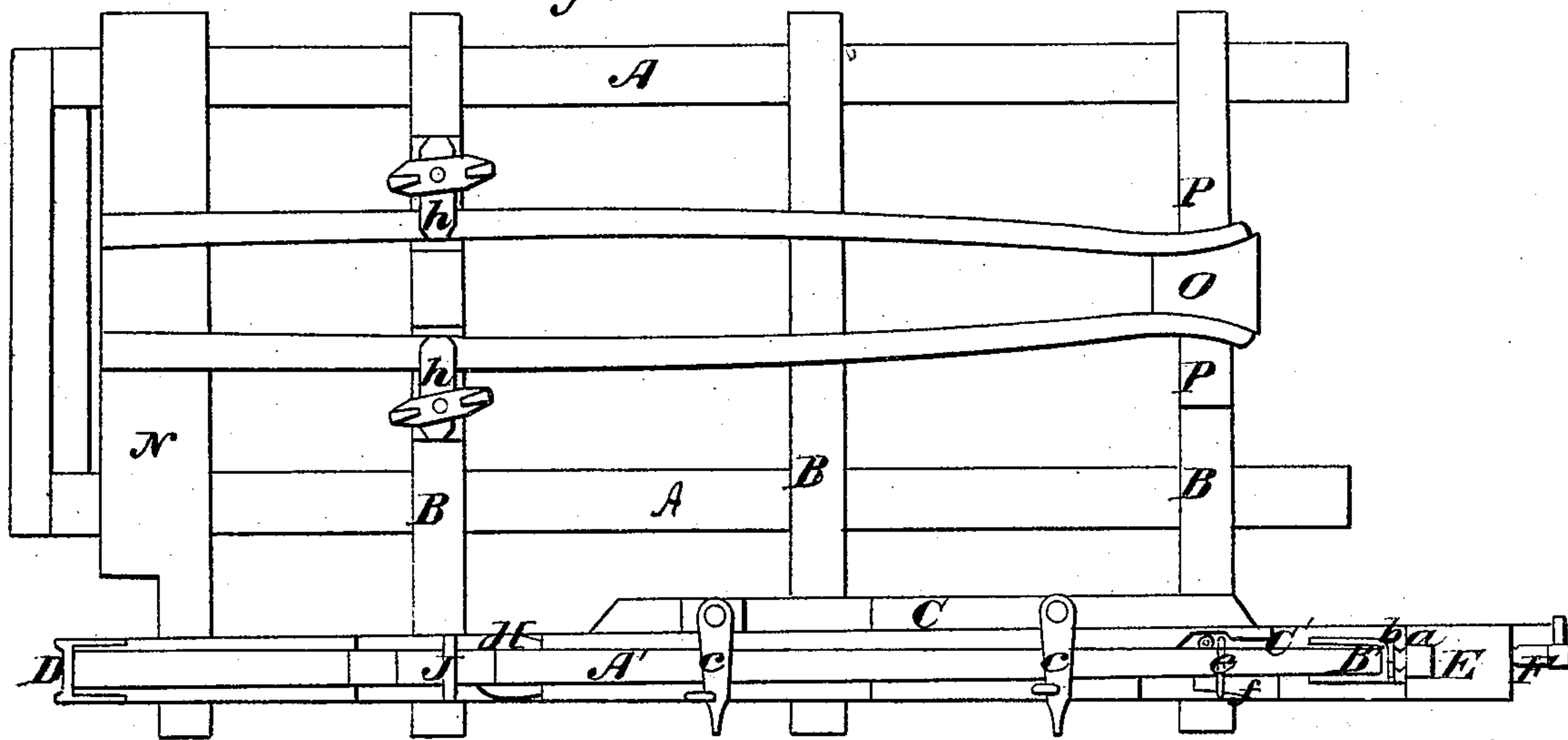


Fig. 2.

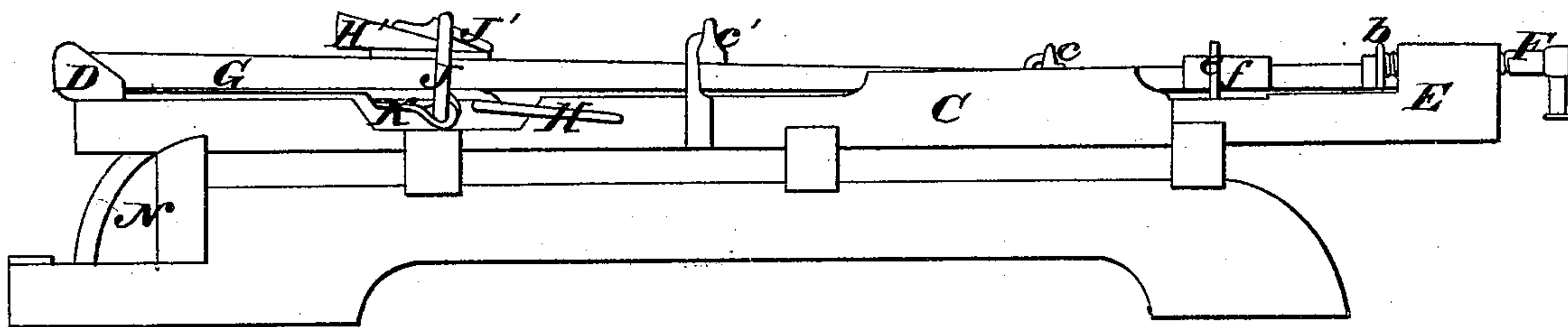
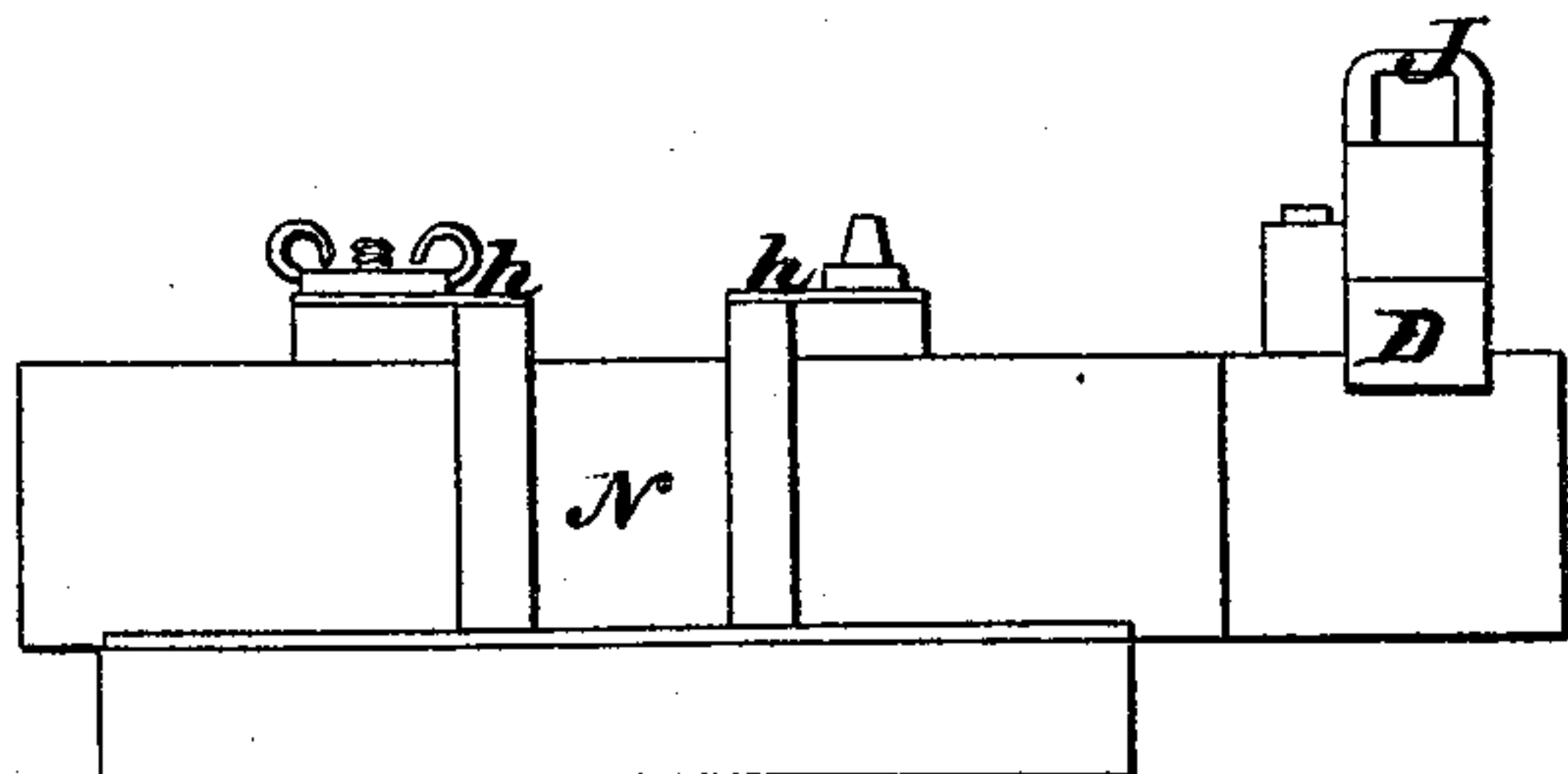


Fig. 3.



Witnesses.
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A. G. SNYDER, OF ASHTABULA, OHIO.

Letters Patent No. 87,981, dated March 16, 1869.

IMPROVEMENT IN WOOD-BENDING MACHINES.

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, A. G. SNYDER, of Ashtabula, in the county of Ashtabula, and State of Ohio, have invented certain new and useful Improvements in Wood-Bending Machines; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a top view of the machine.

Figure 2 is a side view.

Figure 3 is an end view.

Like letters of reference refer to like parts.

In fig. 1, A are sills, across which are secured the beams, or cross-ties B.

These beams and sills constitute the frame of the machine, on which the thills are bent, as will hereafter be shown.

C, fig. 2, is a bed, on one end of which is secured an abutment-shoe, D, and on the opposite end is a head, or an abutment, E, through which is projected a screw, F, working in a nut, a. The end of said screw is provided with a jam-plate, b.

To the shoe-abutment D is attached a plate, or strap of metal, G, the opposite end of which terminates in a hook, and fastened or hooked on to the loop H, said loop being firmly secured to the bed C.

It will be observed that the end of the strap G is thickened up by the addition of a jam-plate, G', forming the hook referred to.

J is a yoke, secured to the strap by a loop, K.

Having thus described the construction and arrangement of the machine, I will now proceed to show the practical operation of the same.

It well known, that in bending timber, there is an extension and contraction of the wood, the inner curvature being contracted, or crimped, more or less, and the outer curvature suffering a corresponding extension. In consequence of this extension of the wood, the fibre is very liable to tear asunder, splintering and breaking, or irregularly bending, at the point of greatest curvature.

In order to prevent this extension of the wood, and cause the bending to be the result of the contraction of the inner curvature, and thereby save the loss consequent on the breaking of the work, I confine that section of the timber to be bent, between end-abutments, said abutments receiving the end-pressure, the consequence of the extension of the wood.

Thus, in fig. 1, A' represents a thill, or shaft to be bent. This is laid upon the bed C, with the inner end embraced by and resting against the shoe-abutment D, whereas the outer end is secured by the abutment B, said abutment being fixed to a strap, C', lying along against the end of the thill, the abutment being made to pass around the end.

When the thill is thus laid out upon the bed, the screw F is turned down, thereby bringing a strong pressure endwise upon it, the effect of which will be to cause the thill to bend upward from the middle. To prevent this deflection of the thill at that point, binders c are fixed across it, so that if the thill bends, it must do so between the shoe and first binder c'. The thill is prevented from pushing forward, on the application of the screw, by the strap being hooked to the loop H.

The tension thus given to that part of the thill, is retained, by the strap G being clamped to the thill, by the insertion of the wedge H' in the yoke J under the plate J'. The said plate in its capacity, acts as a lever, and the wedge being driven under it, the thill and strap are firmly secured together, retaining thereby whatever amount of deflection the thill may have received in consequence of the application of the screw.

The outer end of the thill is in like manner secured to a strap, C', the end abutting in the angle B' of the same, against which the jam-plate b engages.

The strap and thill are then bound together by the yoke e, keyed up by the wedge f.

In this condition, the thill is taken from the bed, and the end inserted in the foot of the former N, so that the strap G will be upward, and which is then bent over the former, down upon the cross-ties B, and secured there by the binders h.

The outer end of the thill is curved by the former o being driven between them, and forcing them outward against the shoulders P.

By the application of the straps, in the manner as described, the wood is prevented from splintering, for the reason that the strap and clamp prevent any extension of the wood while being bent; hence there can be no tearing apart of the fibre, the bending being effected by the construction or upsetting of the inner curvature of the bend.

I am aware that end-abutments have been used in wood-bending machines, for the purpose of resisting the end-pressure consequent on the extension of the timber, but these have been used in machines for bending felloes, or other work, when the entire length of the stuff is bent, instead of one end, or the ends only, as in the shaping of a buggy-thill; hence the application of end-abutments, broadly, I do not claim.

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

The abutment-shoe D, strap G, jam-plate and hook G', yoke J, plate J', and wedge H', all constructed and arranged to operate in combination with the loop H and bed C, for the purpose specified.

A. G. SNYDER.

Witnesses:

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