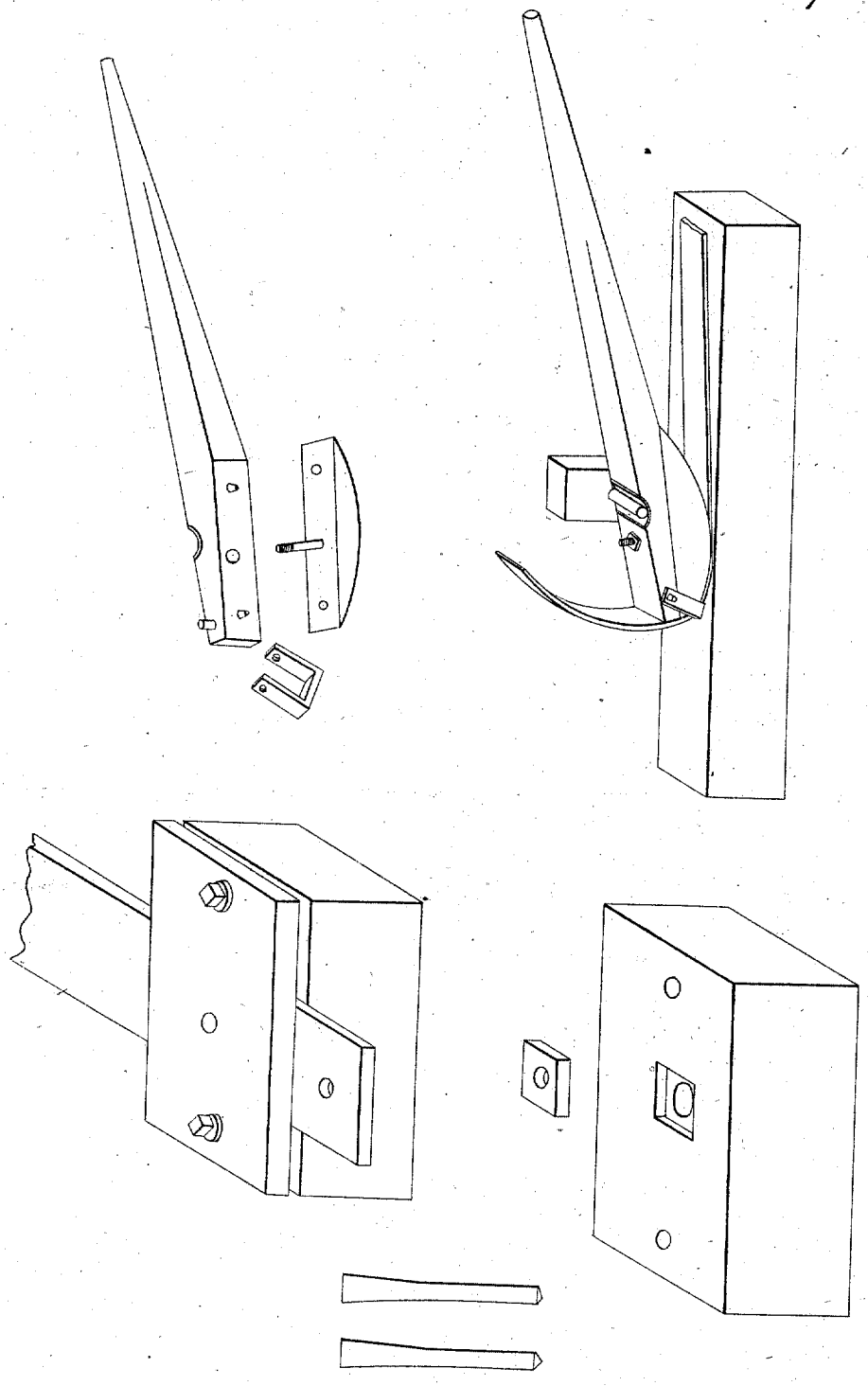
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W. Hinds,

Punching and Bending Tires,

Patented Mar. 7, 1833.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

17467X

Mar. 7, 1833

367

William Hinds Springfield N. Y.

Letters Patent

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said William Hinds himself of his improvement in the Machine for punching and beveling Wheel hoops or tires.

To all to whom these presents shall come Be it known that I William Hinds of Springfield in the County of Otsego and State of New York have invented new and useful machine for punching and beveling wheel hoops or tires and that the following is a full and exact description of the Construction and operation of said Machine as invented or improved by me: The machine is of the kind or principles, one part is mainly for punching, the other for beveling. The head of the machine for punching is made of iron or steel in the shape of the letter H the two upright parts or cheeks are connected together at the ends by strong screw bolts passing perpendicularly through the ends of each and made fast in the same. The bar and guide are from 4 to 8 inches long each and made of steel in the form of a parallelogram 1 inch wide 5 inches deep with a corresponding hole about 1 inch square through each in a direction perpendicularly through the centre of each the guide is from half an inch to one and a half inch thick and the bar is from 1 to 1½ inches deep with a box about 1½ inch square and half inch deep exactly over the hole in the centre of the bar for the reception of the die of the same size of the bar made of steel or iron faced with steel through the centre of which is a hole the same size of the punch hole to be punched.

The punches wheel hoops or tires are made of cast steel from 5 or 7 different punches are alternately used in punching each hole. The punches are made of steel from 3 to 5 inches long about 1 inch in diameter the head round and square at the pointed end like the head end of a cylinder except that the end of the punches are of three different sizes the first is of a size to go freely into and out of the square hole in the bar. The punches are made in the usual way of tempering cast steel. The machine may also be used for punching holes of different sizes in wheel hoops or tires by changing the punches

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sets it for having 3 inches of different size made on the principle of those above described and also with holes of different sizes in order to fit into said machine. Machines for punching holes of various sizes already may be made small & brought into use by making the hole through the bolt, the same size as the hole to be punched and fixing it into steel instead of letting it in a die. The other part of the machine by which the hoops & tires are bent is a lever into which segments of different circles are attached and detached by means of an iron bolt 9 inches long. The lever is from 5 to 6 feet long all but 6 inches of which goes to the handle. The three last parts of the lever which may be called the segment bars on which the segments are attached and detached is 16 inches long and from 2 to 4 inches thick. A straight line drawn through the upper side of the handle intersects the segment bar at the end of the lever and bent it runs an angle of about 27 degrees. The end of the lever is bevelled back towards the handle 4 inches in 2 inches from the extremity of the segment bar. The lever is about 4 inches distant from the bent and is 12 inches back on the segment bar before the iron bolt goes through it. On the top of the lever between the curves and the place where the iron bolt goes through it is a curve cut on a circle whose radius is 12 inches and round with a file. Round the end of the lever is a stirrup of iron extending for enough below the lever to receive the hoop of iron to be bent and is kept in its place by short spikes driven into the lever each side of it. Round iron the stirrup is raised up by putting iron rivets through the upper end of it. The segments are made of hard timber 6 inches long 2 inches wide & 2½ inches deep. Where the bolt goes through them and each side of it is thick at the end & under the stirrup with a hole 4 inches from each end to go over the short pins in the lever which is also made of hard timber. Owing to the elastic nature of iron segments are made for bending it, so as to exceed about 2 inches to 3 inches left and for iron of one inch or under 1 inch as near as may be the diameter of the circle for which the hoops & tires are to be bent. And the method of making this part of the machine is to make as many different bars as there are segments of different circles required. The part described lever which will produce the required bend is that the stirrup from one lever to the other instead of having segments made bars which are in the shape of

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mill from steel the other liver is usually in a liver the different segments are usually attached to it" The liver or livers are operated between a stick of timber from 4 to 6 feet long 5 by 8 inches square and an iron pin driven horizontally into a distance of 9 or 10 inches above said stick of timber into which the stick is pinned 1 foot from one end. To the liver or livers may be operated under an iron pin driven into any convenient part or parts about the shop or elsewhere.

The advantage of this machine is the punching and cutting of iron cold without heating; to do which the iron should be nealed please the iron into the machine between the bar and guide and extend it by turning the lever. Then place the machine on anvil and the punch having the shorter point into the hole in the guide and drive it in the depth of the point with a sledge. Next drive in the stripper punch made on the same principle and the hole will be enlarged and the iron stock forced out it may be finished with the old fashioned punches lightly driven with a sledge or hammer. The points of punches should be kept filed while using them to punch the hoops or tires to place the bar of iron under the iron pin and place the stops on the end of the bar after attaching the proper segment to the liver of the liver is made on the plan first described and turn it under the iron pin and it will bend the iron to the circle of the liver the segment in the liver turn the bar up and down the liver back to the straight part of the bar and while the bar and liver under the iron pin and turn the liver as before and so on replacing the same operations until the hoop or tire is bent. Soft iron with little elasticity in it will be bent too hooked of the forces which may be easily straightened to the right circle by placing the side of a sledge inside the hoop or tire and beating the outside with a hammer.

The invention of the machine on the different principles specified and described except the old fashioned punches to be used in the same is claimed

Witnesses
Wm Hayes
Isaac Babcock

William Field

Drawing

E. N.
C. H.

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