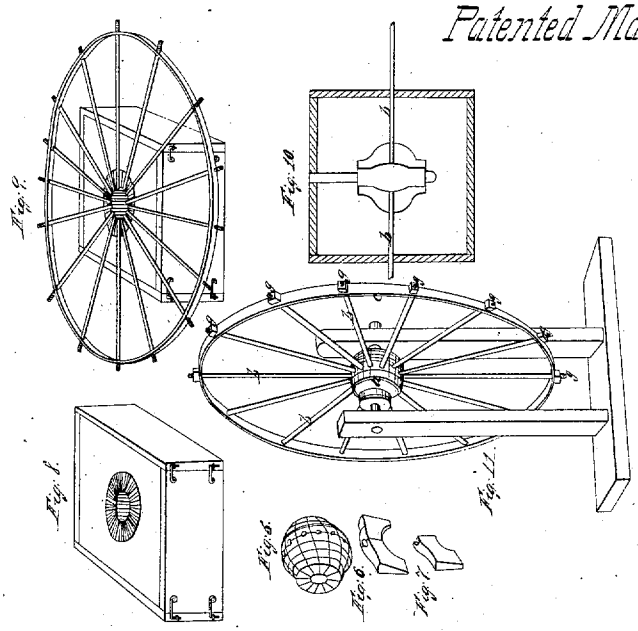
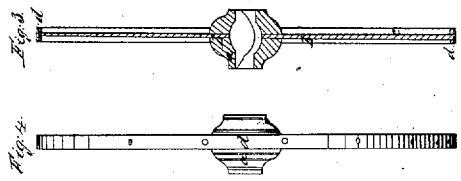
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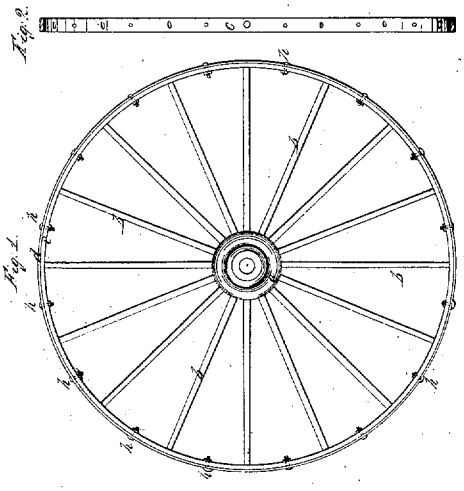
H. Beebe.

Making Vehicle Wheels.

Patented Mar. 12, 1834.







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

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Mar. 12. 1834 Ar. 14

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Henry Beebe

Letters Patent

The Schedule referred to in these Letters Patents and making part of the same containing a description in the words of the said Henry Beebe himself of his improvement in the construction of wheels for the use of all kinds of Carriages

To all to whom these presents shall come. Be it known that I Henry Beebe of the Town of Canastota in the County of Oneida and State of New-York have invented a new and useful improvement in the construction of wheels for the use of all kinds of Carriages such as stages, waggons, carts, gigs Coaches, rail road cars and other kinds of transportation vehicles which invention he calls "The metallic vehicle circular wheel" and that the following is a full and exact description of the construction and operation of the said machine as invented or improved by me. The wheel is to consist of the Hub, Spokes, rim and tire with such other appendages thereto as are hereinafter mentioned. The Spokes and the rim to consist of wrought or malleable iron or steel the hub of the same, or of cast iron, brass composition of metal or of any metallic substance. The tire of wrought or malleable iron or steel with or without steel. The rim of the wheel to be circular of such diameter as the constructor may choose and as may be appropriate to the use for which it is intended. If the wheel is to be of the diameter of four feet and an half the thickness of the rim should be about five eighths of an inch and the width about one inch and three eighths. The rim to be made by bending the bar of the material of which it is to be made into a circular form and fastening the two ends together by welding, or otherwise at the option of the constructor or the rim may consist of segments or fellies either before or after the rim is formed it is to be pierced with as many holes as the wheel is intended to be spoked to the wheel twelve or fourteen more or less at the option of the constructor. The holes to be equidistant from each other and to be in the centre of the rim and of such size as may be deemed sufficient regard being had to the size of bolts to be made of the wheel, to the size of the wheel and the material

nals of the spokes and mortising for the reception of the spokes. The spokes to be made of a length adapted to the size of the rim to be of solid or hollow iron or steel. Each round or otherwise as may permit the construction or removal of each spoke is to be cut a screw and a nut put on the same. The end of the spoke on which is to be cut the screw to be of a size to fit the holes to be cut in the rim. The ends of the spokes to be inserted in the holes in the rim keeping the nuts on the screws on the inside of the rim. After the spokes are thus inserted in the rim the hub is to be placed in a form for receiving the hub. A pattern of wood or other material is to be made for the hub of the form and dimensions adapted to the size and strength of the intended wheel and of the appropriate proportions on the outside with the addition of the core prints which are to be of the size of the mortised hole at each end of the hub. The pattern is then to be divided into as many parts as the number of spokes intended for the wheel. Holes are then to be made in the pattern for receiving the other ends of the spokes to be of suitable size and depth for the spokes and hub. The pattern is then to be sawed into two parts through that part of the holes intended for the centre of the spokes, then place the pattern in the centre of the wheel a rim with a screw passing through the centre of each core print with a nut on the inner side so as to be drawn when the mould is made for the hub. The mould for the hub is then made on the pattern after which the screw is drawn and the upper part of the mould and pattern is drawn leaving the ends of the spokes in the mould and the pattern are half open then the rim is drawn from the form with the spokes. Then the under part of the pattern is drawn from the under part of the mould. Then the mould for the hub is complete ready to receive the core which forms the inside of the hub for the reception of the axle-tree. The shape of the core is to be such as may be requisite for the hole of the inside of the hub to be of a taper form for the axle tree and to be of a shape to make a bottom in the hub between the boxes corresponding as near as may be to the bulge on the outside of the hub. The object and use of which is to prevent a receptacle for the oil or grease for the wheel and to diminish the weight of the hub. The hub may be formed with or without this bottom as

completed

acceptable. The core is to be placed in the pipits or moulds in its appropriate position for forming the insides of the hole through the hub and the arm and spokes are then to be placed in the moulds or pipits as when moulded. Then the flasks is to be closed. The metal of which the hub is to be made is poured in into the moulds or pipits and thus the hub is formed. The arm spokes and hub then to be removed and freed from the sand and the core removed, then a centre pin of wood or any other material to be put through the hole in the hub made for the axle tree on which pin turn the wheel thus formed to discover if the hole be true with the centre of the hub. turn the nuts on the ends of the spokes on the inside of the arm snug up to the arm and if the arm be not true with the centre of the hub turn the nut so as to push out the arm to make it true, the ends of the spokes which are inserted in the arm to pass quite through it after the arm is made true to the centre of the hub after the arm is made true the ends of the spokes which pass through it are to be made even with the outside of the arm by cutting them off or filing them down of they project beyond it. The die of the wheel is made of a bar of iron wrought or malleable cast mille steel or not at the option of the constructor and formed to fit the outside of the arm above described as to width and diameter and to be of such thickness as the constructor may choose. The die is made hot and while hot put on to the arm and then cooled by water so as to make it tight on to the arm and spokes, it may be further secured on to the arm and spokes by bolts passing through the die and arm between the spokes in such number as may suit the constructor. These bolts may be made to unscrew through the arm and hammered down on the inside or have a screw on the end of each inside the arm with a nut, or each end of the bolt may be formed a head of wrought or malleable iron if the constructor shall see fit in order to protect the ends of the bolt. The arm of the wheel instead of being made of iron may be made of wood at the option of the constructor or in the ordinary modes now in use in making wheels. The invention hereby claimed and desired to be secured by Letters Patent is the construction of the whole of the machine or wheel above described when taken together and

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the mode and manner of constructing the same particularly the principle of constructing the hub upon the iron or steel spokes. But no claim is made for the mode of making the hub, the spokes, the iron or the tire or any of the parts of the wheel or machine taken separately. Or a further illustration of my invention I refer to the model and drawing of the same deposited in the Patent Office. In testimony whereof I have hereunto subscribed my name this twenty first day of February one thousand eight hundred and thirty four

Witness

Wm. T. Skinner

Chs. Mr. Keller

Henry Beebe

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Drawing