(12) **United States Patent**
Darby

(10) **Patent No.: X4011**
(45) **Date of Patent: Jan. 22, 1825**

(54) **WHEELS, BOXES, CASTING**

(76) Inventor: **Calvin Darby**

Calvin Darby

Letters Patent

To all whom it may concern Be it known that I Calvin Darby of Rockford in the County of Winnebago and State of Illinois have invented a new and useful improvement in the method of constructing the pattern for casting the Boxes for Cast Carriage Waggon and other Wheels.

The improvement consists principally in giving to the box greater strength, greater durability, and a greater diameter at the end within the wheel so that it may be finished almost immovably in the nave or hub of the wheel. By this last mentioned property of the box an inconvenience which has hitherto been very sensibly felt is entirely overcome. The pattern consists of a cylinder having its inner diameter or calibre tapering or conical of the same dimensions in all respects as the box to be cast, and its length the same. The outer end or end next to the linch pin is of the same thickness with the box to be cast, having the same diameter and is in all respects like it. The thickness however (by which is meant the depth from the outer to the inner surface of the cylinder) extends no further towards the other end than merely to form a convenient and strong rim or shoulder against which the narrow end of the circular plates hereafter mentioned shall rest when they are placed upon the cylinder. The cylinder has upon its surface any convenient number of cams or lugs as they are sometimes called, being elevated parts like those usually found on wheel Boxes, and designed to enter grooves to hold the box in its place in the nave or hub, and keep it from turning with the wheel. The surface of the cylinder between the cams (excepting the rim or shoulder aforesaid) is sunk or cut away leaving the whole surface between the cams (except the rim or shoulders) quite thin so as to make place for the reception of the circular plates hereafter mentioned. The cams have grooves in them running from the inner end to the rim or shoulder aforesaid to receive said plates. Between the cams is inserted circular plates having surfaces conformed to the surface of the cylinder, which plates slide in the grooves aforesaid and fit very exactly to the rim or shoulder aforesaid fixing to a lever therewith and being sufficiently thick to give

to the inner end of the box a greater diameter from outer surface to outer surface than that of the outer end, or endwise to the linch pins, when these plates are inverted the pattern has the appearance of a solid box with cones upon the surface, having its inner end of the greatest diameter and thick and strong. The pattern being thus prepared is inverted in sand in the usual ~~usual~~ way with the smallest or linch pin end uppermost, and when drawn, the cylinder comes first out, leaving the plates which have slid out of the grooves to follow it upon strings which connect them therewith not to be removed in any other way convenient to the workman for which there is ample room after taking out the cylinder without disturbing the sand. This is a mould formed for casting having all the properties aforesaid, which it imparts to the box, namely, a greater diameter to the inner end than at the linch pin end, so that it can easily be fastened firmly into the nave or hub and greater strength and durability because it has greater thickness. This kind of mould may be usefully employed in all cases when it is desirable to cast upon a tapering or conical case and to give to the casting the greatest diameter from outer surface to outer surface at the end inserted in the sand. In testimony whereof I have hereunto set my hand and Seal this 6th day of Jany A.D. 1825

Witness?

Evd: Richard Hampton Case — Calvin Darby.

WGC John Davis

2—328 a.

DRAFTSMAN'S DIVISION.

All communications should be addressed to "The Commissioner of Patents, Washington, D. C."

DEPARTMENT OF THE INTERIOR,

United States Patent Office,

Washington, D. C., ... *, 189*....

SIR:

The printed copies *of Patent No.* L. Darby

..... are ..... *exhausted.* Jan 22 1825

As soon as printed a copy will be mailed you to complete your order.

By direction of the Commissioner:

Very respectfully,

Chief Clerk.

3143b6-97-5m

United States Patent

Patent No.: X4011