(No Model.)

A. J. BEACH.

THIMBLE SKEIN FOR WAGONS.

No. 294,000. Patented Feb. 26, 1884.

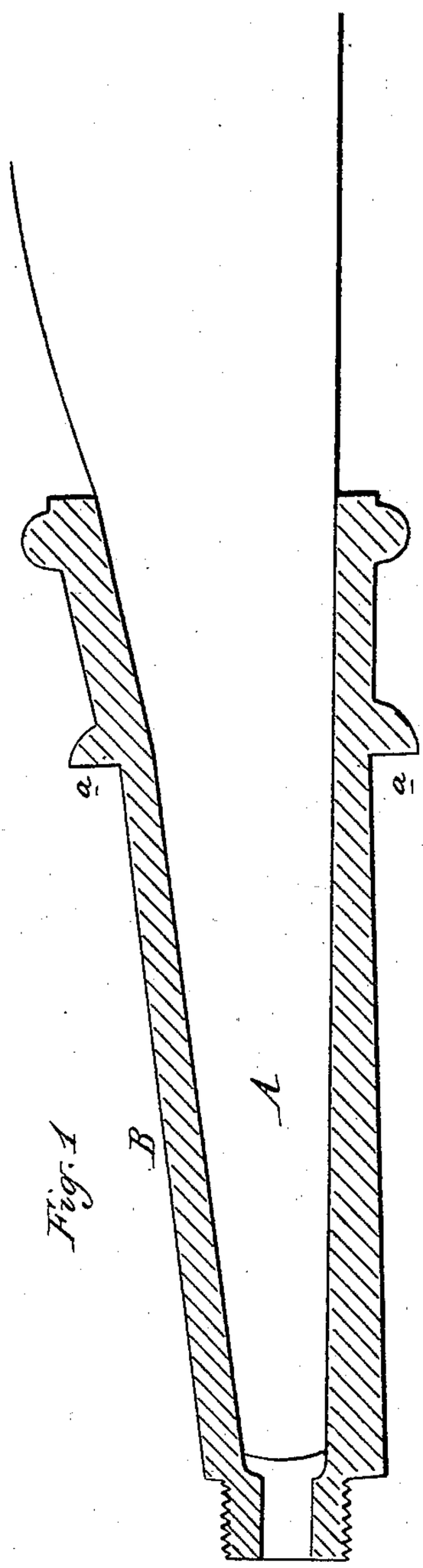

Fig. 1

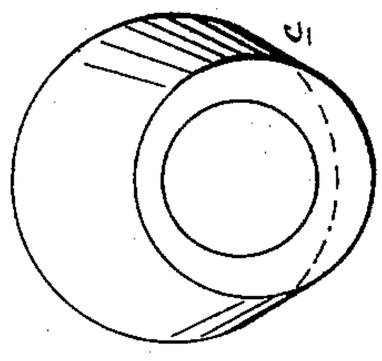

Fig. 3

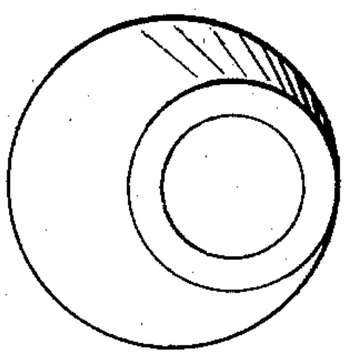

Fig. 2

Attest:

A. Barthel

Charles J. Haug

Inventor:

Allen J. Beach

per Phil S. Sprague

Atty

UNITED STATES PATENT OFFICE.

ALLEN J. BEACH, OF LINDEN, MICHIGAN.

THIMBLE-SKEIN FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 294,000, dated February 26, 1884.

Application filed December 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALLEN J. BEACH, of Linden, in the county of Genesee and State of Michigan, have invented an Improvement in Thimble-Skeins for Wagons, of which the following is a specification.

The nature of this invention relates to certain new and useful improvements in the construction of thimble-skeins for wagons, the object of the invention being to provide a skein upon which the wheel will rotate and track in a line at right angles to the axial center of the axle and skein, and to prevent the side rolling drag motion of a wheel, as occurs in the use of the ordinary skein, where the point of resistance is brought on a line tangential to the axial center of the skein, causing a tendency in the forward movement of the wheel to force the same outward, and thereby greatly increasing the resistance to the draft, caused by the frictional contact of the parts and the tendency of the wheel to run off of its arm; and to that end the invention consists in the peculiar formation of the skein, all as more fully hereinafter set forth.

In the use of the ordinary skein, attempts have been made, which have only proved partially successful, to overcome the objections above raised by carrying the points of the arms forward; but this has had a tendency to cause the wheel to revolve tangential to a line at right angles with the axial center of the axle, and also causing the wheel in its forward rotation to have that dragging roll to which I have above referred, this carrying forward of the point of the axle and arm being what is commonly termed in the trade the "gathering of the axle."

Figure 1 is a longitudinal section through one end of an axle provided with my improved skein. Fig. 2 is a view in elevation taken from the end of the ordinary thimble-skein, and Fig. 3 is a similar view of my improved thimble-skein.

In the accompanying drawings, which form a part of this specification, A represents the arm of an axle, upon which is secured, in the usual manner, my improved thimble-skein B, which is constructed in the following manner: The outer face of this skein immediately in front of the flange *a* thereof is the same as in the ordinary thimble-skein—that is to say, the outer and inner faces of the skein at that point are in parallel lines to each other, there being the same amount of material between the inner and outer faces of the skein at all points immediately at the shoulder, and upon a line extending from the flange to the point of the skein, immediately upon the top thereof, the same dimensions are observed, while from that point to the point vertically below and at the point of the skein the thickness of material gradually increases, as will be seen upon reference to Fig. 1, wherein it shows that there is nearly double the thickness of material at the under side of the point of this skein that there is at the immediate top, producing the result shown in Fig. 3, wherein it is represented with an opening through the skein, which receives the arm of the axle as a point eccentric to the axial center of the point of the skein, such increase of thickness of a portion of the skein being greater or less in proportion to the incline or taper of the skein.

From the construction described it will be seen that the point at which the circles of the point and base of the skeins cross each other (shown in dotted lines at *c*, Fig. 3) becomes the line of resistance to the forward or backward motion of the wheel; hence it will be seen that upon applying power or draft to a wagon provided with my improved skein the point of resistance is on a line parallel with the line upon which the draft is applied, thereby avoiding entirely the danger of forcing the wheel outward upon the skein, diminishing the frictional contact between the parts and entirely obviating the objection raised, wherein the wheel upon the old skein is caused to have a drag-rolling motion upon a line tangential to the line of draft.

I am aware that it is not new to make an axle-skein having the center of its bore eccentric to its periphery, and to have its under portion gradually increasing in thickness from the rear to its forward end; but in all such cases the under bearing-surface is in a horizontal plane, and I lay no claim to such as forming part of my invention.

To properly and accurately adjust axle-skeins of the above description requires that the axle should be trimmed off to a certain in-

clination on its under side, which requires skilled labor, and when adjusted gives no pitch to the wheel whatever, whereas my improved skein can easily be secured in place by unskilled labor, as the under side or lowest point of the axle-bore is in a horizontal plane, and the under side of the axle therefore needs no trimming in order to properly secure the skein thereto, the proper pitch being given to the wheel according to the inclination of the lower outer bearing-surface. It also simplifies the operation of the mechanic, further, inasmuch as there is no gather to the axle, so that he works to a center line from either side without the necessity of "laying off" for "gather;" but the principal point of advantage gained is in saving the friction which is incident to the sliding rolling motion which an axle that has a gather is bound to produce. Besides this advantage in the draft, the axle is stronger, as there is much less of it cut across the grain, and the wood at the bottom of the axle, where the greatest portion of the strain comes, is left in its original uncut state.

To bend wrought-iron axles in order to obtain the proper pitch of a wheel, as has heretofore been done, is likewise foreign to my invention, as it requires skill, together with proper appliances, to accomplish the same. In practice I propose to make skeins having their outer bearing-surfaces of various degrees of inclinations for different kinds of vehicles, each being constructed and graded to accommodate and give the necessary pitch to variously-dished wheels, so that if it is desired to construct a vehicle the wheels of which are required to have a given pitch in order to accommodate its dish, it is only necessary to order the thimble-skein graded to give such pitch.

What I claim as my invention is—

In combination with an axle having its lower edge horizontal, an axle-skein having the lower portion of its interior in a horizontal line on a level with the bottom of the axle-tree, and having its point or outer end extending below the horizontal plane of the skein at the base or rear end of its bearing-surface, substantially as and for the purpose specified.

ALLEN J. BEACH.

Witnesses:
H. S. SPRAGUE,
CHAS. J. HUNT.