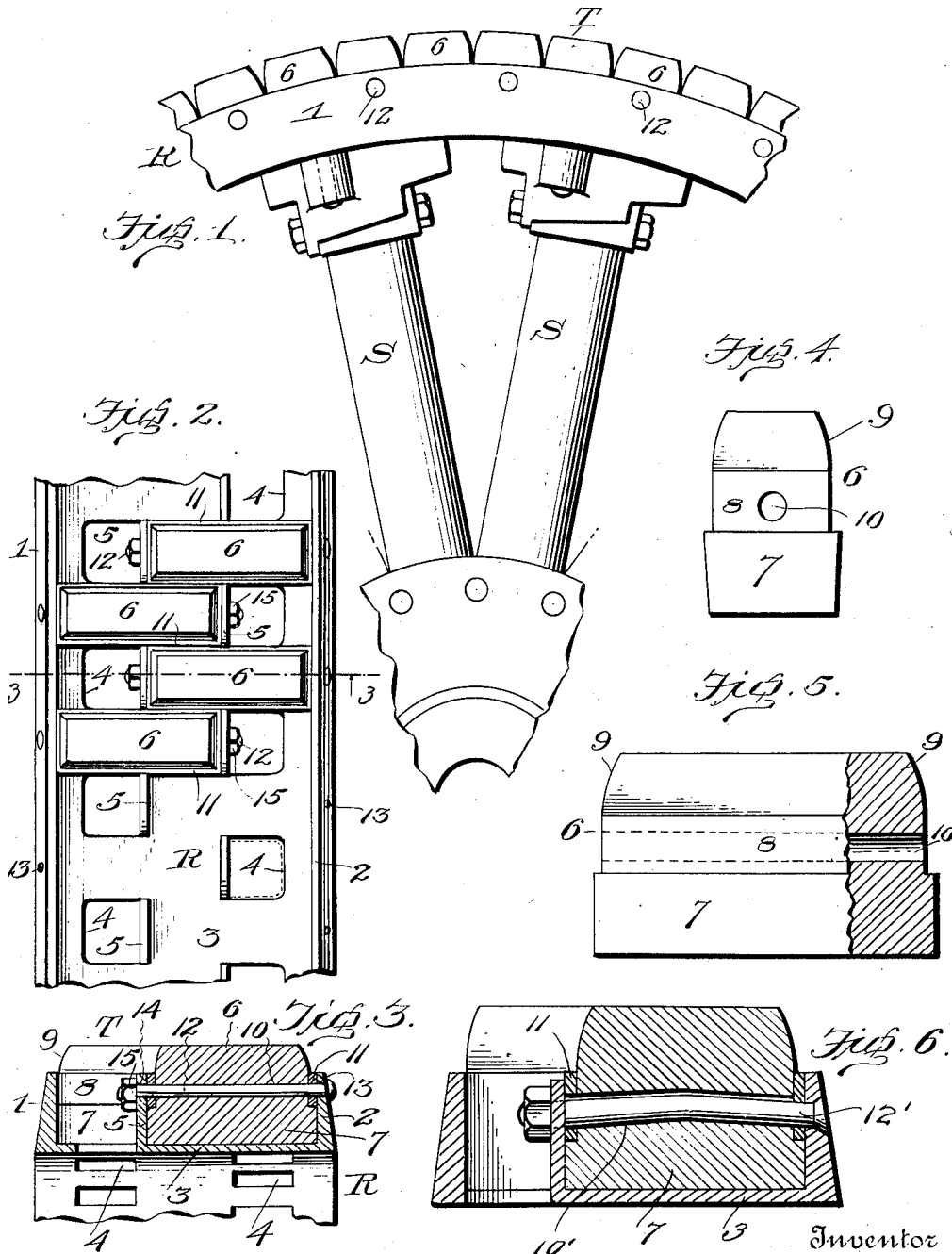


W. S. MORTON.
WHEEL TREAD.
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WHEEL-TREAD.

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To all whom it may concern:

Be it known that I, WALTER S. MORTON, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Wheel-Treads; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to carriages and wagons, and more especially to the fellys and rims thereof; and the object of the same is to produce an improved tread which is useful on traction wheels and in places where slipping of the same upon the earth must be prevented. This object is carried out by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side elevation of the wheel hub, two spokes, and a portion of its rim constructed in accordance with my invention. Fig. 2 is a plan view of a portion of the rim with four of the wooden blocks in place. Fig. 3 is a transverse section on the line 3—3 of Fig. 2. Fig. 4 is an enlarged end elevation, and Fig. 5 an enlarged side elevation partly broken away, of one of the wooden blocks. Fig. 6 is an enlarged section through the channeled rim and one of my improved blocks and its connecting means, showing a slight modification in the latter.

The traction wheel partly shown in the drawings is made up of a hub, spokes S radiating therefrom, a felly or rim R, and a tread T which comprises the gist of the present invention. The sizes, shapes, proportions and materials of these parts are not essential to the present invention, but the rim is by preference of channel iron and may well be made of sheet metal rolled into the shape desired and punched as described below, either in the act of rolling it or at other times. Coming now more particularly to the gist of the present invention, said rim R includes two side flanges 1 and 2 which are as deep as may be necessary and preferably disposed parallel to each other along the edges of the strip from which the rim is made, and a base 3 connecting the lower edges of said flanges and preferably formed integral therewith and flat as shown, the base being connected with the outer ends of the spokes S in any man-

ner desired. Said base is formed through its body with two rows of U-shaped slits 4 whose bends are disposed outward toward the flanges but yet leaving a considerable path between them and such flanges, and whose extremities are disposed inward toward the center of the width of said base and leaving a somewhat wider path between them and along such center. Each of these cuts or slits extends around three sides of a nearly rectangular tongue 5 which is then upbent, thereby forming two rows of tongues standing in parallel planes separated from each other by the width of the intermediate path and each row separated from the adjacent flange by the depth or width of the opening in the base from which it was cut and the width of the outer path referred to above. The disposition of the cuts or slits is such that they are in staggered relation to each other, and the result is that each upbent tongue in one row is disposed opposite the space between two tongues in the other row. Finally the length of said tongues is about equal to the width of the flanges so that the outer edges of the latter and the outer ends of the tongues all stand in a plane parallel with the base of the channel iron constituting the rim. Complementing a rim of this construction, my improved wheel tread includes a series of wooden blocks 6 each by preference having a substantially rectangular base 7, a body 8 slightly narrower and slightly shorter than said base and projecting integrally outward from the same, the outer corners of the block being rounded along its sides and ends as shown at 9 and the body being pierced with a longitudinal hole 10, and a metallic band 11 as of steel shrunk around said body and itself pierced with holes registering with that numbered 10 just referred to.

The size of each block is such that it will lie between the adjacent edges of two contiguous tongues in one row and will extend between the flange nearest them and the inner face of the tongue in the opposite row, the length of the block thereby occupying about two-thirds of the width of the channel within the rim. Proportionately the height of the block is such that when so disposed within the channel iron, the lower face of its base 7 rests upon the upper face of the base 3, and the ends of the base 7 and the metallic band rest against the flange

and the tongue, the combined height of said base and band being about equal to that of the flange or tongue so that all metallic parts extend about equally from the hub; and the rounded outer corners of the block of wood project beyond said metallic parts and form a tooth extending about two-thirds of the distance across the tread of the wheel—the aggregated teeth constituting the tread of this invention. Each tooth thus constructed is held within the channeled rim by means of a bolt 12 passed inwardly through an eye or perforation 13 disposed at a proper point in the flange, thence longitudinally through the hole 10 in the body of the block and the registering holes in the extremities of the band surrounding it, and finally through an eye or perforation 14 which may well be formed in each tongue at the time the latter is stamped, and receiving a nut 15 on its inner end; and by tightening up this nut the tongue and the flange will be drawn tightly against the ends of the tooth.

A wheel tread thus made is cheap, light, strong, easily repaired, and self-cleaning because the earth picked up between any two blocks will stand directly over the hole at the end of the interposed block, and if the earth does not fall through said hole as the wheel makes its revolution it will be pressed upward through it the next time this portion of the tread contacts with the ground. By preference the nuts of all bolts are disposed toward the inner side and over said holes where they can be reached easily, leaving their heads along the flanges of the rim where they will not be injured in case the wheel is passed over or alongside stones or other obstructions.

In Fig. 6 is shown a slight modification of the idea above described, wherein the same rim and lips are employed and the same block (preferably though not necessarily with the band 11), but the hole 10' through the block is deflected upward slightly at the center of its length and the shank 12' of the bolt is similarly deflected and loose in the hole so that when its nut is tightened up the base 7 of the block is drawn down firmly upon the base 3 of the channeled rim. The

tighter the nuts 15 on the bowed or upwardly bent bolts are tightened, the more firmly will the cushion blocks be drawn down against the flat base of the channeled rim of the wheel. Obviously this is but an amplification of the same general idea, and may be adopted by the manufacturer if desired.

It will be understood that slight changes in the form, proportion and arrangement of parts and in the details of construction may be resorted to within the spirit and scope of the invention as defined in the appended claims.

What is claimed as new is:

1. The herein described wheel tread made up of a channeled rim comprising a flat base, parallel outstanding flanges along both edges thereof, and two rows of tongues struck from said base and outturned so that the tongues in one row shall stand in a single plane and in staggered relation to those in the other row, the tongues leaving self-cleaning holes in the base from which they are bent; a series of rectangular wooden teeth disposed within said rim with their bodies in staggered relation to and lapping and in contact with each other, each tooth extending from one flange between the tongues of one row to the interposed tongue of the other row; and bolts for holding the teeth removably in place, the nuts thereof standing over said holes.

2. A wheel tread comprising a rim having a flat base, a series of rectangular blocks arranged upon the same in staggered relation with the side faces of their inner portions in contact with each other, supporting members projecting outwardly from the rim base at the opposite ends of the blocks, the innermost supporting members being disposed between two blocks, and transverse fastenings passed through the blocks and the supporting members at the ends thereof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WALTER S. MORTON.

Witnesses:

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