No. 670,924. Patented Apr. 2, 1901.

# A. C. AMES.

## DETACHABLE TREAD SHOE FOR TRACTION WHEELS.

(Application filed Sept. 1, 1900.)

(No Model.)

Fig. 1.

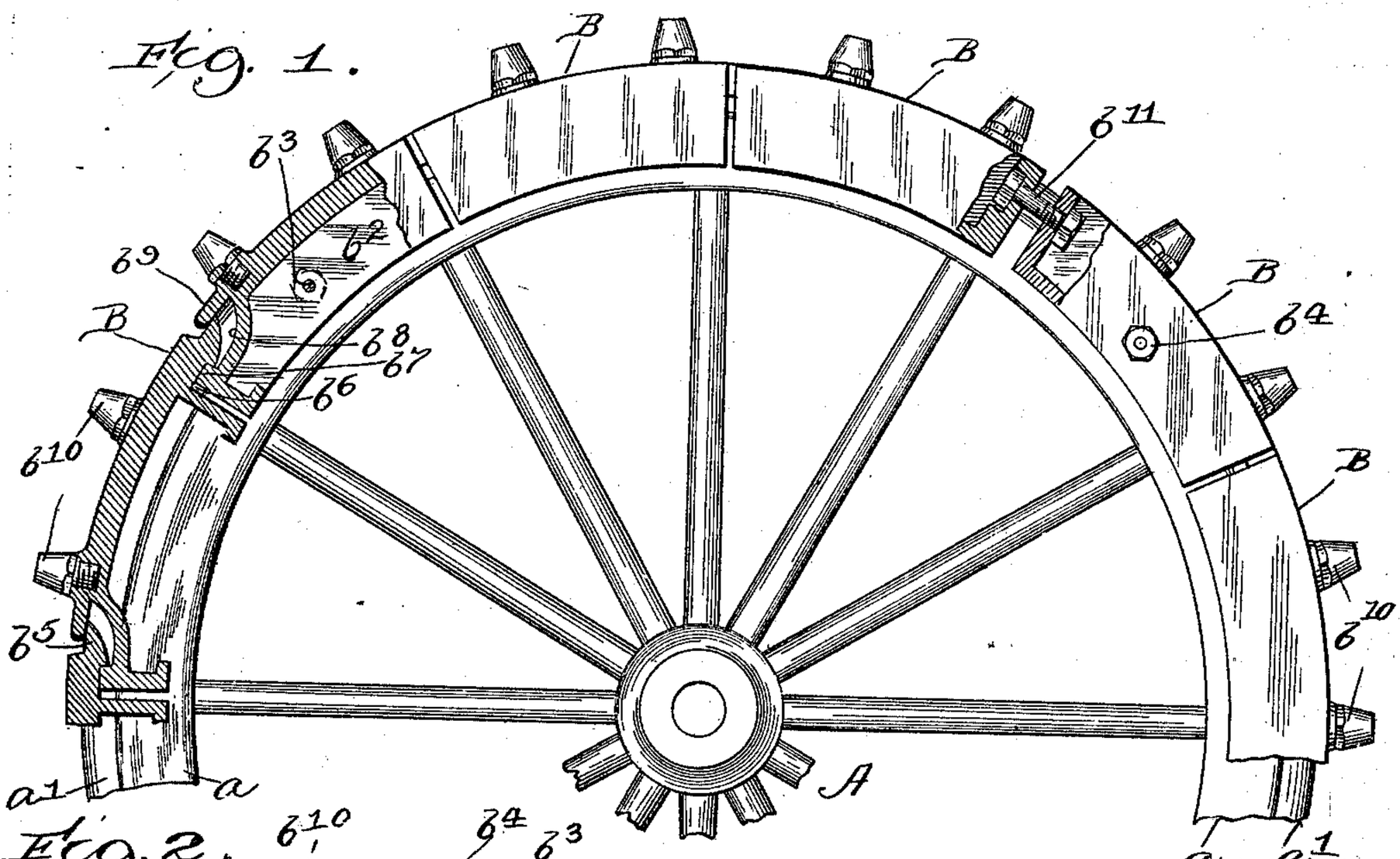



Fig. 2.

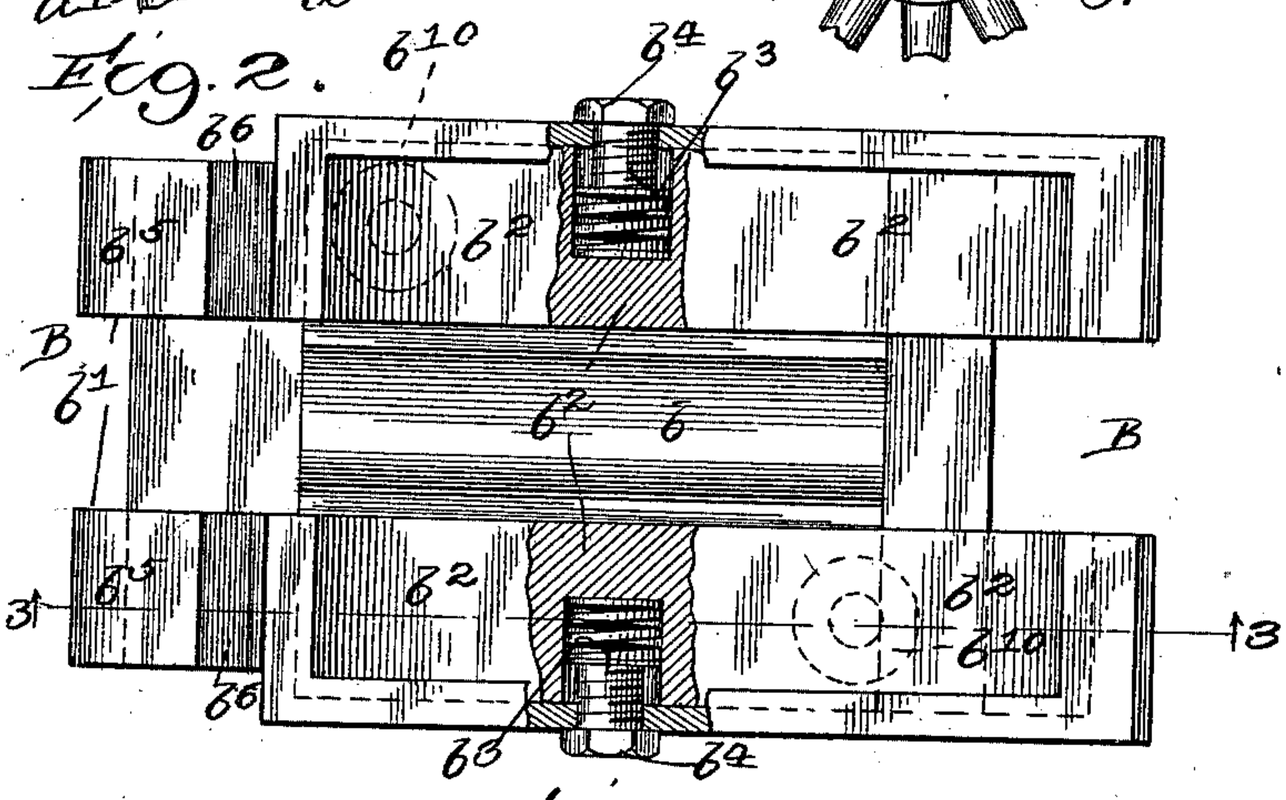



Fig. 3.

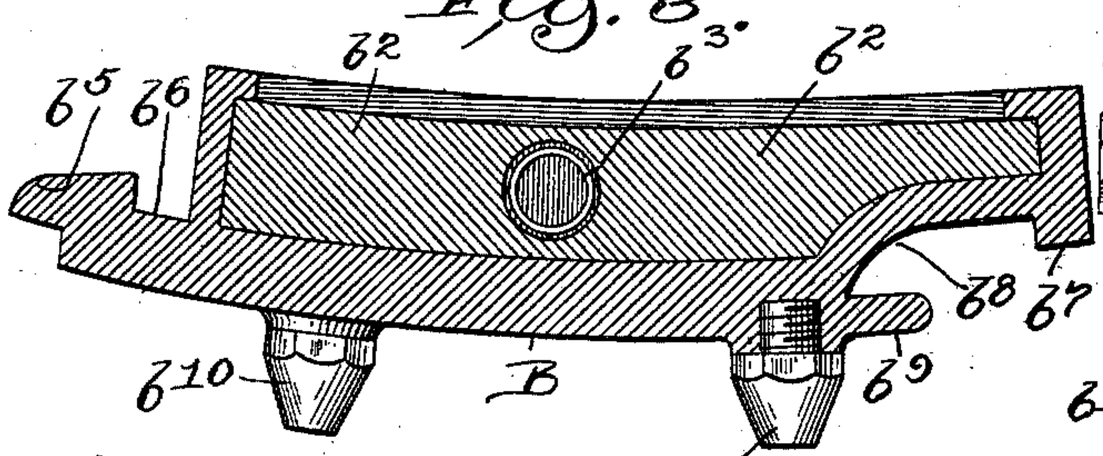
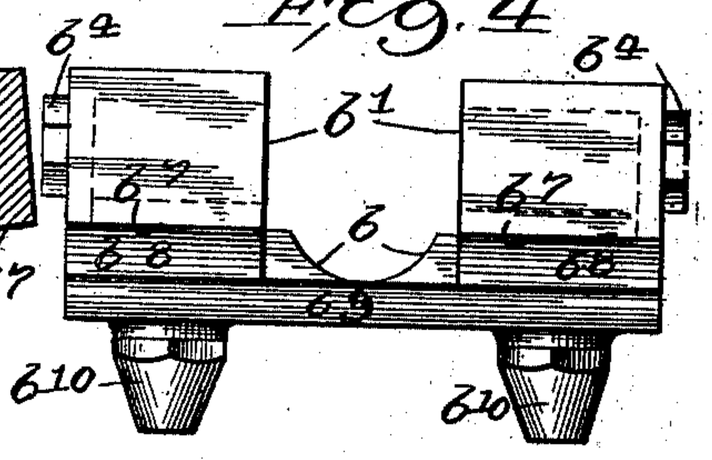



Fig. 4.




Witnesses
Ray White.
Harry D. Wilde.

Inventor:
Albert C. Ames;
By Foree Bain Attorney.

# UNITED STATES PATENT OFFICE.

ALBERT C. AMES, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO MOTOR-VEHICLE COMPANY, LIMITED, OF SAME PLACE.

## DETACHABLE TREAD-SHOE FOR TRACTION-WHEELS.

SPECIFICATION forming part of Letters Patent No. 670,924, dated April 2, 1901.

Application filed September 1, 1900. Serial No. 28,741. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT C. AMES, of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Detachable Tread-Shoes for Traction-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable persons skilled in the art to which it appertains to make and use the same.

My invention relates to detachable tread-shoes for vehicle-wheels.

One of the objects of my invention is to provide a series of interlocking detachable tread-shoes which may be applied to a vehicle-wheel for increasing the traction-surface of the said wheel when the said vehicle is passing over a soft or yielding roadway.

One of the principal features of my deviec consists in each shoe being separable and being adapted to be interlocked one with the other as the said shoes are being applied to the vehicle-wheel, so that the said shoes may be nested or piled in a small compass when they have been removed from the wheel and are placed within the vehicle to be again ready for operation when necessity requires their use.

In the accompanying drawings, Figure 1 shows a broken-away portion of a vehicle-wheel with a series of my shoes applied to the traction-surface of the said wheel. Several of the shoes are shown in section, and the method of uniting the final terminal shoes of the series is also shown in section in the said figure. Fig. 2 is a plan view of one of my shoes looking from the center of the wheel, showing a means which I use for temporarily fastening the shoe to the rim of the said wheel while the remaining number of shoes in the series are being applied thereto. Fig. 3 is a section taken on lines 3 3 of Fig. 2. Fig. 4 is an end view of one of the shoes.

In all of the figures the same letters of reference are used to indicate similar parts.

A represents an ordinary vehicle-wheel. $a$ is a rim or felly of the said wheel, and $a'$ is a tire, preferably a rubber tire, applied to the ordinary wheel.

B is my detachable interlocking shoe, which when applied to a wheel increases the tractive surface thereof and by means of which a vehicle is held supported above mud, snow, or other soft yielding roadway through which said vehicle may at the time be passing. $b$ is a concave groove in the center of the said shoe at the bottom of the channel $c'$, in which the rubber tire $a'$ rests.

$c'$ is a channel or an opening through the length of the shoe wide enough for the entrance of the felly or rim $a$ of the wheel.

$b^2$ is a block of wood or of similar material that is placed within a recess formed in the shoe on either side of the channel $c'$. The object of this block of wood is to cause the shoe to be held with considerable friction upon the rim $a$ at the time it is applied, so that it will remain in place thereon while the other shoes of the series are being in a like manner applied to the rim of the wheel. The blocks of wood are pressed with some force toward each other by means of the helical springs $b^3$, which are contained in recesses cut into the said blocks of wood, the said springs being held in place by means of the short bolts $c^4$.

One end of the shoe is provided with a latch $b^5$ and a groove $b^6$ behind the latch. The other end of the shoe is provided with a recess $b^8$ and the shoulder $b^7$, behind which the latch is adapted to engage. A projection $b^9$ extends over the recess $b^8$, as shown in Fig. 3.

$b^{10}$ represents a series of removable studs that may be made of cast-steel or other hard metal and screwed into the surface of the shoe for the purpose of increasing the traction effect of the said shoe. They are made removable, so that they can be easily replaced in case of wear or damage.

It will be noticed from the drawings, Fig. 1, that all of the shoes are not provided with the spring-blocks $b^2$ and that the terminal shoes of the series are fastened together by means of a bolt and nut $b^{11}$.

The use and operation of my device are as follows: When it is desired to place the shoes upon the wheel, a shoe is first selected which has the spring-blocks $b^2$ within the recesses described, and this shoe is placed upon the wheel. The friction exerted between the rim of the wheel and the blocks in the grooves on either side of said rim serves to hold the

shoe in position on the rim while the other shoes are being placed and joined in series therewith by the interlocking fastenings contained on either end of each shoe. To place the next succeeding shoe upon the wheel, all that is necessary is to insert the latch $b^5$ in the recess $b^8$ and press the shoe in contact with the tire $a'$ upon the wheel A and then place the next succeeding shoe in position in the same manner until all of the shoes have been placed upon the wheel. Then to retain the shoes in their proper place put the bolt $b^{11}$ through the terminal shoes and screw on the nut, as shown in section in Fig. 1.

It is very essential that some means should be adopted to hold the first shoe in position on the wheel while the succeeding shoes are being applied in the manner described. Without this result the operation would require the services of several persons to place a series of shoes upon a wheel and it would take a much longer time to complete the process.

It will be noticed that the shoes are made of a single piece and that they are adapted to interlock one with the other as they are placed in position. As a result of this construction the shoes are quickly and easily applied to their position and there are no number of parts to become lost and disassociated and necessitating more time to insert or put in place, and in every respect the shoe as I construct it is much more satisfactory and convenient than it would otherwise be if it did not contain the very excellent features described.

The shoes are each made of a single piece and may be made so as to nest up and when so nested to occupy a very small space. They are not rigidly held with reference to each other and jointly they present a large bearing-surface in which the tire of the wheel rests.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A detachable tread for vehicle-wheels, comprising a series of separable shoes, one member of an interlocking locking device provided on, or near, each end of said shoe, and adapted to engage one with the other for retaining said shoes upon a vehicle-wheel, when said shoes are placed thereon, substantially as set forth.

2. A detachable tread for vehicle-wheels, comprising a series of separable shoes, said shoes adapted to be held in place by inherent locking devices engaging one with the other, and a means for temporarily retaining the first shoe on the wheel while the remaining shoes of the series are being applied, substantially as set forth.

3. A detachable tread for vehicle-wheels, comprising a series of flexibly-joined shoes, provided with broad peripheral surfaces, and removable studs screwed into the face of said surfaces, substantially as set forth.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 22d day of August, A. D. 1900.

ALBERT C. AMES.

Witnesses:
FORÉE BAIN,
M. F. ALLEN.