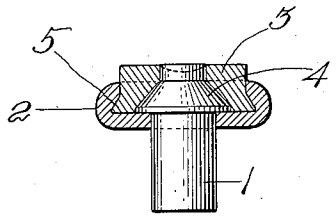
W. C. BRAY.

RIVET.

APPLICATION FILED NOV. 19, 1908.

938,116. Patented Oct. 26, 1909.

Fig. 1.



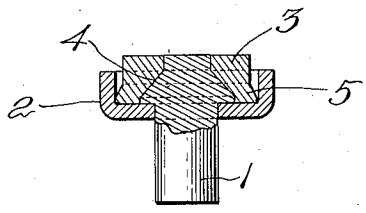


Fig. 2.

Witnesses:
M. L. Gilman.
K. D. McPhail

Inventor:
William C. Bray
By Phillips Van Everen & Fish
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM C. BRAY, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO TUBULAR RIVET & STUD COMPANY, A CORPORATION OF MASSACHUSETTS.

RIVET.

938,116. Specification of Letters Patent. Patented Oct. 26, 1909.

Application filed November 19, 1908. Serial No. 463,338.

To all whom it may concern:

Be it known that I, WILLIAM C. BRAY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Rivets; and I do hereby 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.

The invention relates to rivets such as are adapted for use in connection with automobile tires for the purpose of protecting such tires from wear, and for preventing slipping or skidding when driving over wet or slippery roads.

The object of the invention is to provide an improved rivet of this type which may be conveniently and economically manufactured, and which when in use will present a durable wearing surface, and will secure an improved grip upon the surface which is engaged by the rivet.

To these ends one feature of the invention contemplates the provision in a rivet provided with a shank and head of comparatively soft and malleable metal and a wearing block of comparatively hard metal secured in or on the head, of a soft metal plug secured in the wearing block and subjected to the wear to which the wearing block is subjected. With this construction of rivet the wear upon the soft metal plug causes it to become worn away to a slightly greater degree than the surrounding hard metal of the wearing block, so that a shallow depression is formed in the wearing block. The presence of this depression in the wearing block increases the gripping action of the wearing block upon the surface engaged by the rivet, and as the wearing block wears away, the plug also wears away so that the depression remains until the wearing block is completely worn away, and is unaffected by the wearing of the wearing block.

In its broader aspects, the invention contemplates the provision of any desired number of soft metal plugs in the wearing block, and any suitable construction of rivet in which the shank is of such a character that it may be readily bent or worked in attaching the rivet, while the head is provided with a hard metal wearing block.

A further feature of the invention contemplates forming the head of the rivet as a retaining cap for the hard metal wearing block, and extending the shank or body of the rivet through the bottom of the cup and through the wearing block, so that the exposed end of the shank or body portion of the rivet forms a soft metal plug in the wearing block.

A rivet thus formed is simple and durable in construction, and is well adapted for convenient manufacture by automatic machinery. In thus forming the rivet, it is also preferred to secure the shank or body portion of the rivet to the head by forming a flange upon the shank which lies within the head, and which is firmly held against the interior of the head by the engagement of the wearing block with the upper surface of the flange. It is also preferred to form a flange on the lower edge of the wearing block, and to secure the wearing block in the head by bending in the rim of the head over the flange. This preferred construction of rivet forms a further feature of the invention.

The various features of the invention will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 is a sectional view through the axis of a completed rivet, and Fig. 2 is a similar view of the assembled parts before they are bound together.

The rivets shown in the drawings comprises a shank or body portion 1, and a head 2, within which is secured the wearing block 3. The shank or body portion 1 is formed of malleable or pliant metal which may be bent or riveted in securing the rivet in place. The shank proper of the body portion is shown as solid, but it will be understood that the shank portion may be either tubular or split, as may be desired. The head 2 is also formed of a malleable or pliant metal, which may be readily bent and shaped by dies. This head is cup shaped, and may be readily formed from sheet metal by the action of suitable dies. In constructing the rivet, the cup head 2 is bent into the form of a cup, such as shown in Fig. 2, so that it may be readily applied to the shank or body portion, and so that the wearing block 3 which is formed of hardened or tempered metal may be readily introduced into the interior of the cup.

The body portion of the rivet is pro-

vided with a flange 4 which is preferably provided with a flat under surface to engage the interior surface of the cup 2, and with a conical upper surface to engage a corresponding surface formed on the inner face of the wearing block 3. The wearing block 3 is preferably provided, as shown in the drawings, with a recess on its inner face adapted to fit over the flange 4, as with this construction a thicker and more durable wearing block is provided. The wearing block is provided with a central hole, and the body portion of the rivet extends beyond the flange 4 through the hole to form a soft metal plug in the center of the wearing block. The wearing block is provided on its inner edge with a projecting flange 5, and the parts are firmly bound together by bending in the rim 6 of the head 2 over the flange, as indicated in Fig. 1.

The rivet described may be conveniently and economically manufactured, and provides a strong and durable structure in which the parts are firmly and rigidly bound together without danger of becoming loose or detached. The wearing block presents a hard and durable surface for taking the wear to which the rivet is subjected, while during the use of the rivet the soft metal plug formed by the end of the body portion of the rivet wears away to form a cupped recess in the block, as indicated in dotted lines in Fig. 1. The presence of this recess increases the effective gripping action of the rivet, and decreases the liability of slipping or skidding when driving over wet or slippery surfaces. The recess in the wearing block is not affected by the wearing away of the wearing block, since as the block is worn away, the softer material of the plug is also subjected to increased wear, and is also worn away, so that there is always a cupped recess in the wearing block which is not of sufficient depth to collect and retain any material amount of dirt or grit.

Having explained the nature and object of the invention, and specifically described one form of rivet in which the invention may be embodied, what I claim is:—

1. A rivet comprising a shank and a head provided with a wearing block, and a soft metal plug in the wearing face of the wearing block, substantially as described.

2. A rivet comprising a shank, a head provided with a recess, a wearing block secured in the head, and a soft metal plug in the wearing face of the wearing block, substantially as described.

3. A rivet comprising a shank, a head cup, a flange on the shank within the cup, and a wearing block secured within the cup and clamping the flange against the bottom of the cup, substantially as described.

4. A rivet comprising a wearing block having a flange on its inner edge, a head cup having its rim turned in over the flange, a shank extending through the wearing block and cup and provided with a flange clamped between the wearing block and interior of the cup, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

WILLIAM C. BRAY.

Witnesses:
GEO. E. STROUT,
MATTHIAS E. CROCKER.