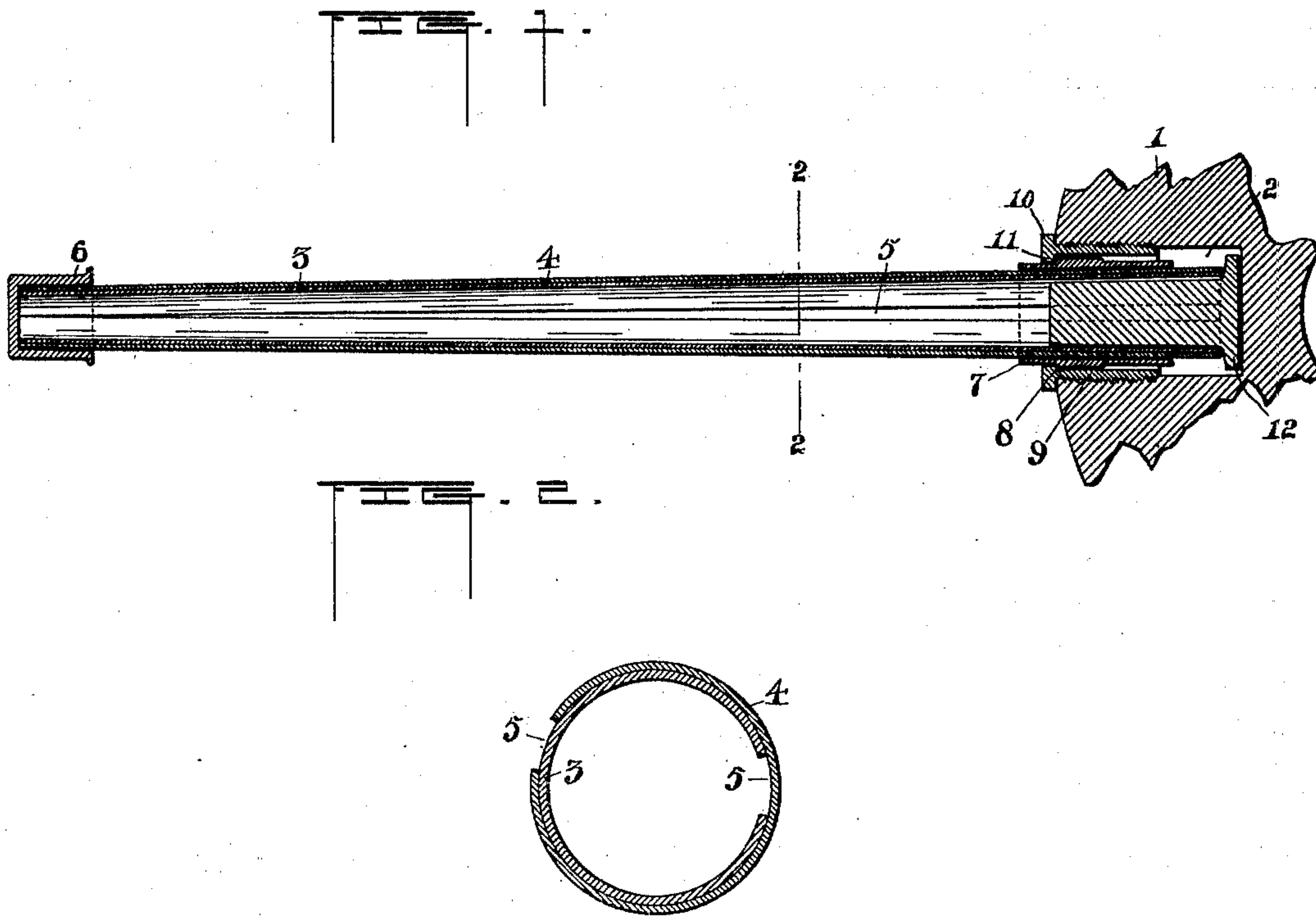


(No Model.)

T. J. THORP.
METAL SPOKE.

No. 467,602.

Patented Jan. 26, 1892.



WITNESSES

And M. Catlin.

Evans Blake

INVENTOR

Thomas J. Thorp

Benj. R. Badie
Atty.

UNITED STATES PATENT OFFICE.

THOMAS J. THORP, OF CHICAGO, ILLINOIS.

METAL SPOKE.

SPECIFICATION forming part of Letters Patent No. 467,602, dated January 26, 1892.

Application filed September 24, 1891. Serial No. 406,671. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. THORP, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain
5 new and useful Improvements in Metal Spokes; 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 pertains to make
10 and use the same.

The invention relates to wheels, and has for its object to provide an efficient, light, and cheap metal spoke; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings, Figure 1 is a longitudinal section, and Fig. 2 is a transverse section on the line 2 2 of Fig. 1.

Numeral 1 indicates a portion of a wheel-hub provided with a socket 2. Two partial tubes are denoted by 3 and 4. These have each a tapered form and an open side 5, one being inserted in the other, as indicated, in such manner that the open side of each is covered or closed by the entire side of the other—
25 that is, the tubes are arranged concentrically and so as to break joints. The smaller or outer end of the spoke thus formed is covered by a thimble 6, which may be tightly fitted
30 thereon, so that it compresses to some extent the open-sided elastic tubes 3 and 4, which are preferably made of steel.

7 is a sleeve closely fitting the spoke near its larger or inner end and provided with a
35 shoulder 8, whereby it engages an externally-threaded sleeve 9, provided with flanges 10 and 11, one of which is adapted to bear on the hub and the other on said shoulder.

12 denotes a plug, preferably made of wood
40 and having a diameter equal to the inner diameter of the tube 3 when the spoke is in operative position. This plug has a head adapted to bear on the bottom of the socket 2 and to receive on its inner side the end of
45 the tubes 3 and 4.

The spoke is secured in the hub as follows: The plug is first entered in its end, which is then, together with the sleeve 7, entered in the socket, so that the tubes 3 and 4 bear on

the head of the plug and the latter on the
50 bottom of the socket. Thereupon the externally-threaded sleeve 9 is also applied and made to engage with the hub-socket, which should be screw-threaded, if the hub is made of metal. If made of wood or paper, previously-formed socket-threads will be unnecessary. By screwing in the sleeve 9 its flange
55 11 is forced against the shoulder 8 and presses the sleeve 7 inwardly, by which means the tubes 3 and 4 are made to embrace the plug
60 closely and are also crowded down upon its head, which is forced against the bottom of the socket. The parts are so arranged and proportioned that when they are applied, as
65 above stated, the flange 10 of sleeve 9 bears upon the hub, though this is not of the gist of the invention, which can be varied in this and other particulars, provided substantially
70 the same mechanical and operative principles are utilized. The particular thimble 6 is not essential to all the advantages of the improvement, as other means for holding the
75 outer end of the spoke may be adopted. If the shoulder 8 were formed on the exterior tube, some of the advantages of my invention could be secured; but I have illustrated my preferred construction.

The spoke made as above set forth is strong, light, and elastic. It is cushioned in the hub by the plug. It can be easily applied or removed and another substituted. The tubular and other portions can be easily made by machinery and the various parts kept on hand to replace those that are broken, no special tool nor skilled work being required for
85 the purpose.

Having now described my invention, what I desire to secure by Letters Patent is—

1. The spoke consisting of concentric open-sided tubes arranged to break joints and devices for compressing and holding their ends
90 circumferentially, substantially as set forth.

2. The spoke consisting of tapered concentric open-sided tubes arranged to break joints and having its larger end embraced by a movable sleeve, substantially as set forth.

3. The spoke consisting of tapered concentric open-sided tubes arranged to break joints

and having its larger end embraced by a movable sleeve and the externally-threaded sleeve adapted to be screwed into a hub and to bear on the first-named sleeve, substantially as set forth.

5 4. In combination with a hub having a socket, the tapered concentric tubes, the plug,

and a screw-threaded sleeve adapted to compress the tubes upon the plug and hold them in the hub-socket, substantially as set forth. 10
THOMAS J. THORP.

In presence of—

M. J. FROST,

J. W. DYRENFORTH.