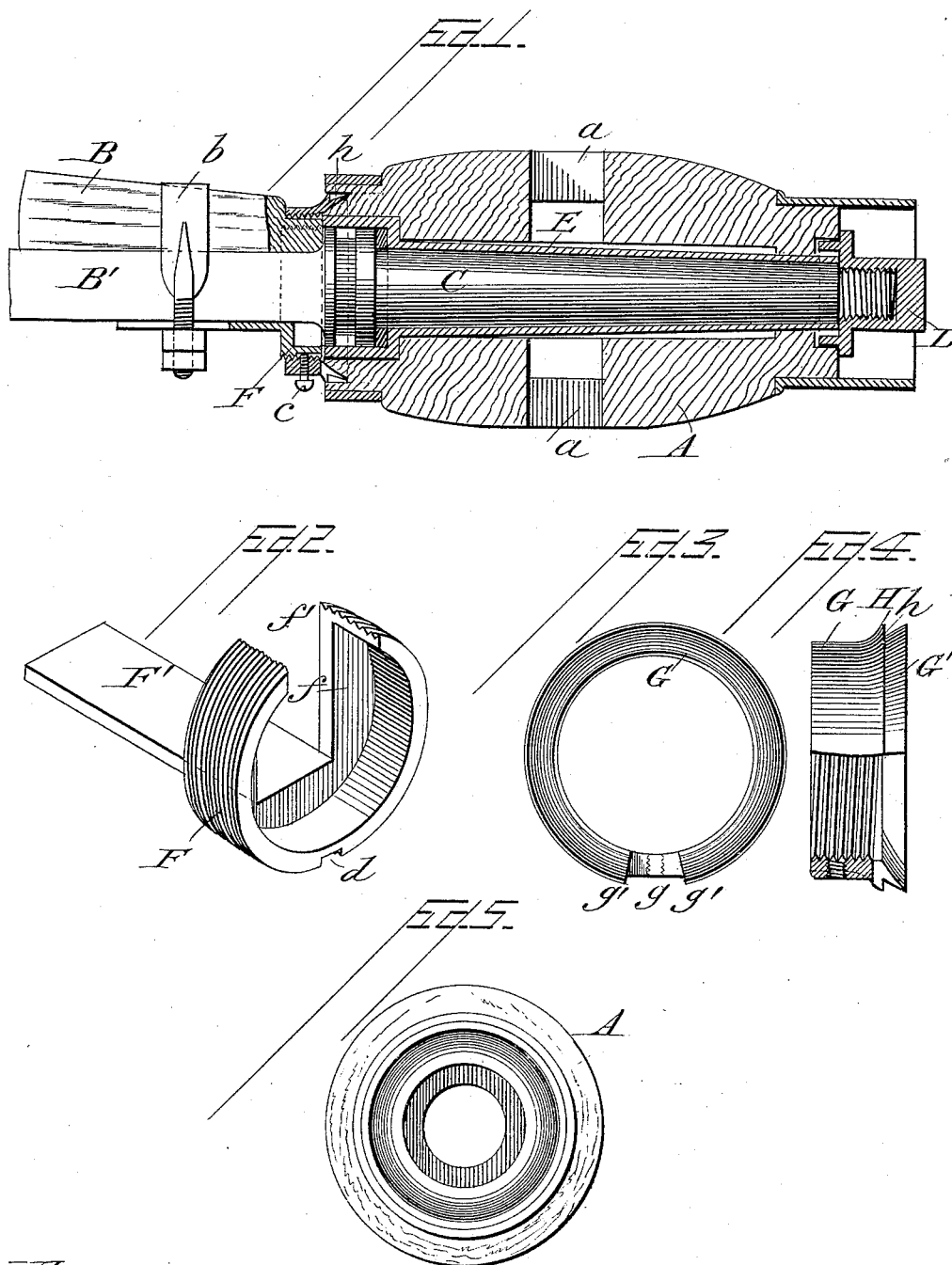


(No Model.)

F. S. ROLFE.
SAND BAND.

No. 419,889.

Patented Jan. 21, 1890.



Attest:

J. H. Schott
W. L. Boyden

Inventor

Frank S. Rolfe
per John C. Parker
Atty

UNITED STATES PATENT OFFICE.

FRANK S. ROLFE, OF CLAREMONT, NEW HAMPSHIRE.

SAND-BAND.

SPECIFICATION forming part of Letters Patent No. 419,889, dated January 21, 1890.

Application filed October 26, 1889. Serial No. 323,234. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. ROLFE, a citizen of the United States, residing at Claremont, in the county of Sullivan and State of New Hampshire, have invented certain new and useful Improvements in Sand-Bands; 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.

My present invention has reference to an improvement in sand bands or guards, its object being to provide a simple, cheap, and efficient device for the exclusion of dust, sand, water, and other objectionable substances from the axle-bearings of wheeled vehicles, and also to keep the oil from oozing out of said bearings; and to this end the invention consists, essentially, in the construction, arrangement, and combination, in a novel and useful manner, of the parts, substantially as will be hereinafter described, and then more particularly pointed out in the appended clauses of the claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a longitudinal sectional elevation of one of the hubs of a wheeled vehicle together with a portion of the axle, my improved sand-band being shown as applied to said hub and axle. Fig. 2 is a perspective view of the threaded holder, which is connected rigidly to the axle and which carries the band-collar. Fig. 3 is an edge view of the internally-threaded collar having a cutter-flange. Fig. 4 is a side elevation of the same in partial section. Fig. 5 is an inner end view of the axle, showing the groove cut therein by the cutter-flange on the sand-band collar.

Like letters of reference designate corresponding parts throughout the different figures of the drawings.

A represents a hub. Two of its spoke-mortises are seen at *a a*. Within this hub is located, in the usual manner, the axle-box E.

B denotes the axle; B', the axle-bar; *b*, one of the clips for connecting the axle and axle-bar; and C, the axle-spindle, located within the axle-box E, said spindle having the usual grooved collar at its inner end and provided at its outer extremity with the nut D. These

parts are given here by way of example only, in order to show the practical application of my improved sand-band. My invention therefore is not confined simply to the class of hubs of which the foregoing is an example, but is applicable to all the many and various kinds of hubs which are employed in the construction of wheels for wheeled vehicles.

In Fig. 2 I have represented in perspective the holder which carries the collar that constitutes the sand-band proper. This holder is firmly and rigidly affixed to the axle, with which it may be made integral, if desired. It consists of an externally screw-threaded sleeve or collar F, provided with a slotted plate *f*, which closes, to a certain extent, one side of the collar, and provided, also, with a shank F', located at right angles to the plate *f*, and adapted to rest horizontally beneath the axle-bar B' and be received and held firmly and tightly within the clip *b*. When the holder is located in position, the axle-bar will pass through the vertical slot in the said plate *f*, while the end of the wooden axle B will rest within the space *f'*, where the screw-threaded sleeve is broken for a short distance on its top side, as indicated in Fig. 2.

The internally-screw-threaded collar G is adapted to be passed over the axle-spindle and screwed upon the holder before the hub is placed upon the axle. This collar G, in combination with the holder, which I have just described, constitutes the sand-band. The collar G consists simply of an encircling ring or sleeve of some suitable metal, properly screw-threaded internally to permit a neat engagement with the screw-threads on the outer peripheral surface of the sleeve-like portion F of the holder. The periphery or annular edge of the collar G, which is located nearest the end of the axle, is provided with a bevel cutting-flange G', adjacent to which is an annular shoulder H, there being between the cutter-flange G' and the shoulder H an annular groove *h*. The cutter-flange G' is slotted, notched, or indented at one point, as *g*—that is to say, a portion of it is cut away at this point to provide the sharp corners or edges *g' g'* on each side of the notch. The notch, therefore,

serves as a discharge-opening for the material which is gouged or cut from the hub. When the flanged collar is located upon the holder, this opening or notch *g* will be on the under side of the handle, and after the collar has been tightly screwed upon the holder I pass a set-screw *c* through the collar G, causing it to enter a notch or groove *d* on the under side of the threaded collar F, for the purpose of holding the collar G firmly in place, with its cutting-edges *g' g'* on the under side of the axle. The effect of this collar G, which is thus provided with a cutting, boring, or knife flange, made inclined, sloping, or beveled, and situated concentric to the axis of revolution of the wheel, will be obvious from an inspection of its construction, as indicated in Figs. 1 and 4; and from a consideration of the annular groove formed in the inner end of the axle-hub, as exhibited in Figs. 1 and 5, it will be clearly manifest that as the wheel revolves, the cutter-flange collar having been previously located in proper position upon its holder, the cutting-flange will embed itself within the substance or material of the hub, and will cut or cleave thereinto in such a manner as to form an annular groove, bevel in shape. The groove *h*, which we have seen in an annular groove between the cutter-flange G' and the shoulder H, serves as a water-groove. As the water passes into said groove from the top side it will run down along the groove and pass out through the opening *g* on the under side of the band.

As the cutting device forms a bevel groove in the hub, which bevel tapers or slopes away from the axle-box, the result of the cutting of said groove will have no tendency to loosen the position of the axle-box, which loosening might and does often occur when a narrow groove is cut into the end of the hub and thus into the end of the wood. If the groove were not beveled in the manner which I have described, the hub would swell in damp weather and render the sand-band valueless. Since wood does not swell endwise, but in the other directions, it will be manifest that when the groove is being formed in the hub there will be no friction.

The cutter acts when the carriage moves forward. It serves also to take out all the dirt and oil that come in contact with it. Many advantages are therefore achieved by the use of the sand band or guard constructed in the manner which I have just described in detail.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sand-band, the combination of the wheel - hub, the axle, a holder connected thereto, and a band-provided collar supported on the holder and provided with cutting ends, so that the cutter may embed itself in the hub during the revolution of the latter, substantially as described.

2. In a sand-band, the combination of the

holder consisting of an external screw-threaded collar provided with a slotted plate, and the cutter-provided collar consisting of an internal screw-threaded collar adapted to be screwed upon the holder and provided with a beveled cutting-flange having cutting ends adapted to form a groove in the end of the hub, substantially as described.

3. In a sand-band, the combination, with a holding device connected to the axle, of a cutter-provided device supported thereby, consisting of a collar formed with an annular beveled cutting-flange, notched at one point to form cutting ends, substantially as described.

4. In a sand-band, the combination, with a holder connected to the axle, of a band G, having the beveled annular cutting-flanges G', said band G being supported on the holder, and the flange G' having cutting-points *g' g'* and adapted to form the bevel-groove in the end of the hub, substantially as described.

5. In combination with the holder in a sand-band, which holder is connected to the axle, the internally-screw-threaded collar G, formed with the annular bevel-flange G', concentric with the axis of revolution of the wheel, and formed also with the shoulder H and groove *h*, all substantially as described.

6. In a sand-band, the combination, with the hub, the axle, and its spindle, of the holder consisting of the externally-screw-threaded collar F, having slotted plate *f* and shank F', and the internally-screw-threaded collar G, located on the collar F, and having the beveled annular cutting-flange G', formed with cutting-points *g' g'*, and having also the shoulder H and groove *h*, substantially as described.

7. The combination of the cutter-provided internally-screw-threaded collar, the holder consisting of the externally screw-threaded collar F, having the slotted plate *f*, the open space *f'*, the horizontal shank F', the axle B, and axle-bar B', said axle-bar B' being located within the slotted plate *f*, while the space *f'* is filled by the axle B, substantially as described.

8. The combination of the hub A, the axle-box E, the axle B, and the axle-bar B' with its spindle C, the holder comprising screw-threaded collar F, slotted plate *f*, and shank F', said holder being firmly connected to the axle, and the cutter-provided collar G, having the bevel annular cutting-flange G', formed with cutting-points *g' g'*, said collar G being located on the holder and having its cutting-flange adapted to form a bevel-groove in the end of the hub during the revolutions of the latter, substantially as specified.

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

FRANK S. ROLFE.

Witnesses:

IRA COLBY,

WILLIAM TUTHERLY.