(No Model.)

W. BROOKS & H. KOCH.

HUB ATTACHING DEVICE.

No. 457,042. Patented Aug. 4, 1891.

FIG. 1.

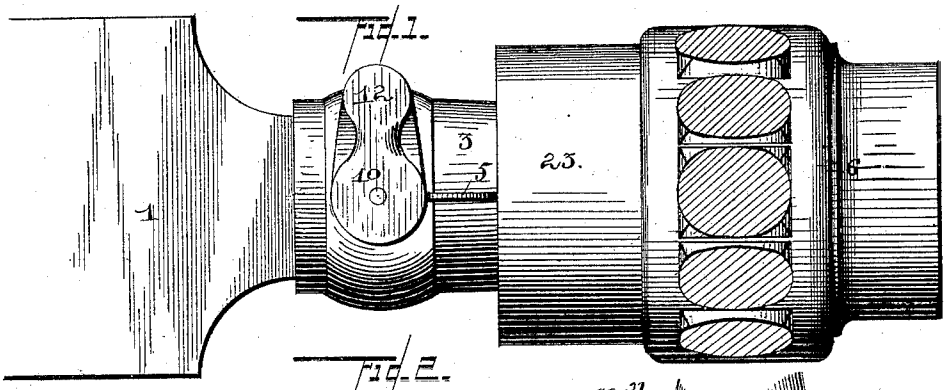


FIG. 2.

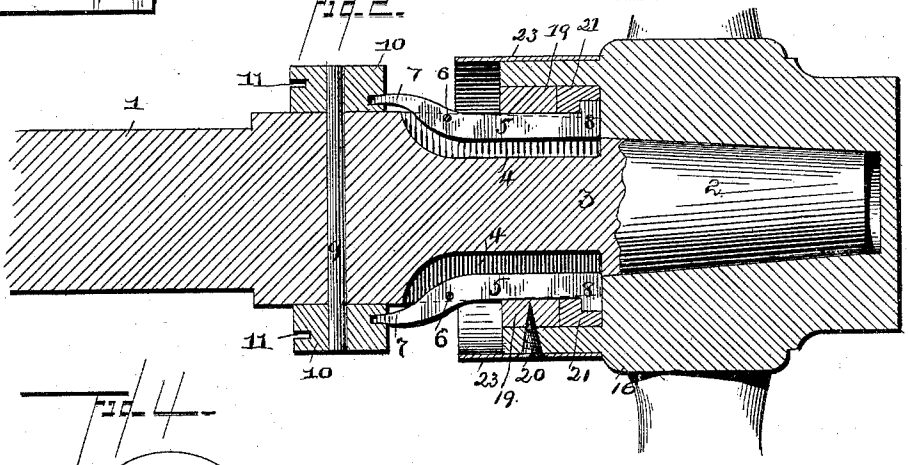


FIG. 4.

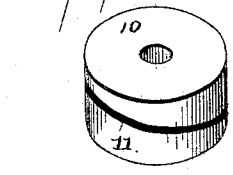
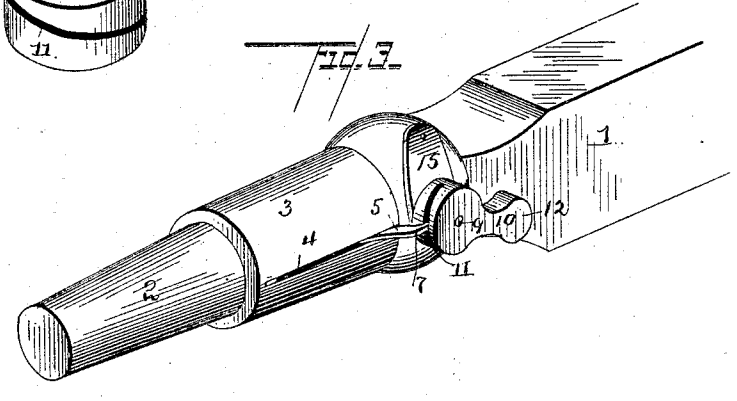


FIG. 3.



Witnesses:

Inventors

William Brooks and

By their Attorneys, Hans Koch.

C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM BROOKS AND HANS KOCH, OF BIBLE GROVE, ILLINOIS.

HUB-ATTACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 457,042, dated August 4, 1891.

Application filed April 9, 1891. Serial No. 388,235. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM BROOKS and HANS KOCH, citizens of the United States, residing at Bible Grove, in the county of Clay and State of Illinois, have invented a new and useful Hub-Attaching Device, of which the following is a specification.

This invention relates to improvements in hubs and means for fastening the same upon the axle, and the objects in view are to provide a cheap and simple means for fastening with facility the hubs of wheels upon axles and permitting of an easy removal therefrom, and this without the use of the usual nuts, and without, therefore, requiring a wrench or other tool for the purpose of applying and removing the same.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a portion of an axle, a hub constructed in accordance with my invention being mounted thereon. Fig. 2 is a horizontal sectional view. Fig. 3 is a detail of the end of the axle, the hub removed. Fig. 4 is a detail of one of the slotted disks.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the axle, which is reduced at its ends in the usual manner to form the spindles 2, one of which is herein shown.

3 designates a skein fitting the spindle and extending about midway the same from the shoulder of the axle. At diametrically-opposite sides the skein is provided with slots 4, longitudinally disposed, and in the slots are mounted levers 5, the same being pivoted, as at 6, near the rear ends of the slots and having their rear ends or tails 7 extending outside of and beyond the rear ends of the slots and their inner ends provided with lugs 8.

At diametrically-opposite sides of the skein, and in line with the slots and near the rear end of the skein, project the ends of a laterally-disposed shaft 9, upon which are mounted opposite disks 10, provided with peripheral inclined or cam slots or grooves 11, each of which receives the tail end 7 of one of the levers 5, and one of said disks is provided with a handle 12, by which the shaft and disks may be rotated, and thus the outer ends of the levers 5 raised and lowered in accordance with the direction of movement of the disks. The under side of the handle 12 is provided with a beveled pin 13, which, when the lever is in a vertical position, is in engagement with a perforation 14, formed in a light bent spring 15, projecting from the skein, and said handle is in this position only when the tail ends of the two levers 5 are at the lower ends of the inclined or cam slots 11.

16 designates the hub, provided with an internal rear recess 17, annular in shape and partially filled at its rear end with an internal collar 19, secured rigidly to the hub by screws 20. The wall of the annular recess combines with the inner face of the collar 19 to form an annular space, in which is mounted a wearing-ring 21, L-shaped in cross-section and provided with a pair of diametrically-opposite seats 22.

In operation, in order to mount the hub upon the spindle and skein, the handle 12 is swung to its lowest position, which is accomplished by releasing the pin 13 of the same from engagement with the spring 15. Such movement upon the part of the handle causes an expansion of the rear ends of the levers 5 and a contraction of the front ends within their slots. The wheel is now introduced over the skein in the usual manner and the handle swung to a vertical position, so that its beveled pin is in engagement with the perforation of the spring. Such movement of the handle causes the disks to revolve until the lugs 8 of the levers 5 are extended into the seats 22 of the wearing-ring. The hub may now revolve in the usual manner, while the wear-ring remains stationary and takes all wear from the lugs of the levers. It will be observed that the hub is now securely connected with the axle, and may be readily released by a depression of the handle, thus withdrawing the lugs from their seats in the ring. It will be observed that by the above construction we obviate all necessity of employing nuts, caps, &c., and require no tool for the purpose of applying or removing the

wheel. The screws securing the fixed ring in the rear end of the hub pass through the hub-band 23.

Having described our invention, what we claim is—

1. The combination, with the axle and the skein, of a hub provided with an internal loose ring, devices mounted on the skein, and means for engaging and disengaging said devices with the ring, substantially as specified.

2. The combination, with an axle, a skein, and a hub provided with an internal loose ring, of a pair of levers pivoted in the slots in the skein and provided with lugs for engaging seats in the ring, a shaft passed through the skein and projecting at each side of the same, a cam-grooved disk mounted upon each end of the shaft, and a handle extending from one of the disks, the rear ends of the levers engaging with the grooves of the disks, substantially as specified.

3. The combination, with the axle terminating in a spindle, a skein longitudinally slotted at the opposite side, mounted upon the spindle, levers pivoted in the slots, terminating at their front ends in lugs and at their rear ends in tail portions, a shaft passed diametrically through the skein, projecting at opposite sides of the same in line with the slots, disks mounted on the shaft and provided with peripheral cam-slots engaging the tail portions of the levers, one of said disks having a handle provided with a beveled pin, and a perforated spring-plate extending from the skein and adapted to engage the pin, of a hub having an internal rear enlarged recess, a ring located at the rear end of the recess, screws passed through the hub into the ring, and an L-shaped wear-ring located between the end of the recess and the fixed ring and provided with diametrically-opposite seats for engaging the lugs of the levers, substantially as specified.

4. In a device for attaching hubs to axles, the levers 5, pivoted within slots of the axle and provided with lugs 8 at their ends to engage the hub, the cams 10, engaging the levers to raise and lower the same, and the locking-catch for the cams, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

WILLIAM BROOKS.
HANS KOCH.

Witnesses:
S. S. HARDIN,
WILLIAM B. CORDER.