

(No Model.)

W. R. BAKER.
HARVESTER REEL.

No. 324,290.

Patented Aug. 11, 1885.

Fig. 1.

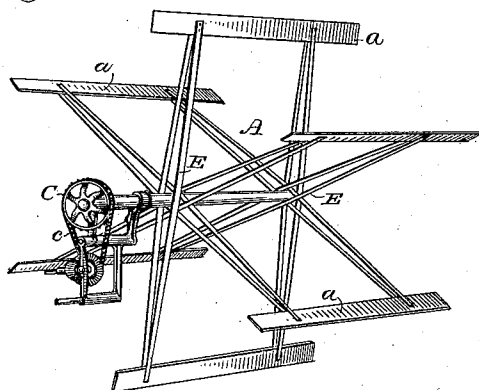


Fig. 4.

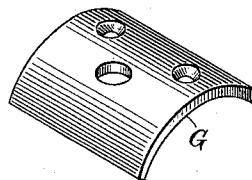


Fig. 2.

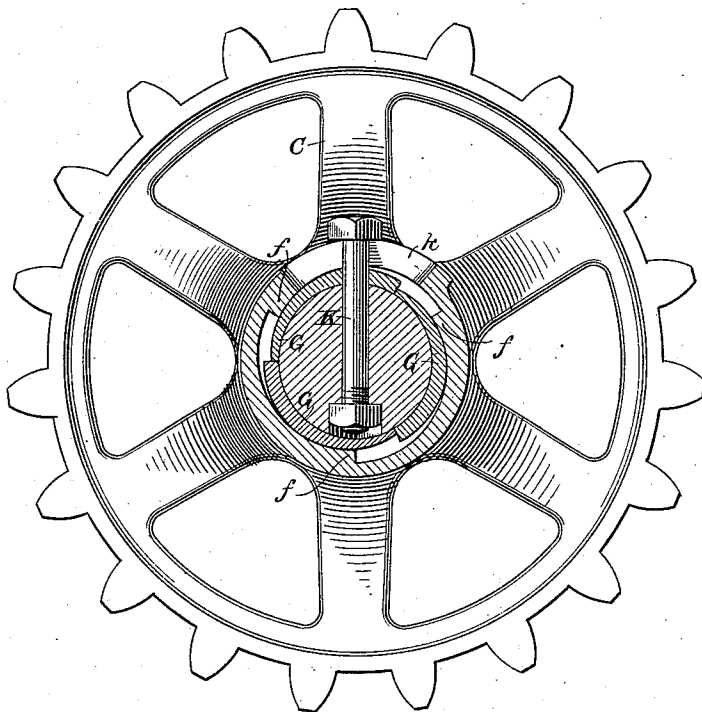
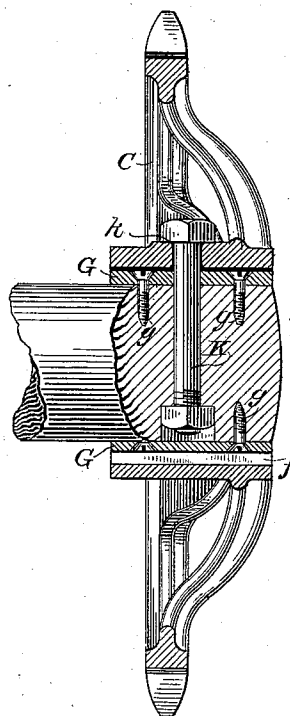


Fig. 3.



WITNESSES

Wm A. Skinkley.
Geo W Young.

INVENTOR

William R. Baker.

By his Attorneys.

Pamison & Pamison

UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER, OF CHICAGO, ILLINOIS.

HARVESTER-REEL.

SPECIFICATION forming part of Letters Patent No. 324,290, dated August 11, 1885.

Application filed August 7, 1884. (No model.)

To all whom it may concern.

Be it known that I, WILLIAM R. BAKER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Harvester-Reels, of which the following is a specification.

In modern harvesters the reel is generally mounted upon a jointed supporting-frame, and driven by means of a chain-belt thrown
10 over a sprocket-wheel on the wooden reel-shaft. This sprocket-wheel is driven tight upon the shaft and bolted in place, the operation requiring some time and care. The connection is at first firm and secure, but under
15 the necessarily harsh treatment of the machine in the field is apt to become loose and ramshackley, and then is not readily tightened again.

The object of my present invention is to
20 provide means whereby the sprocket-wheel may be easily, quickly, and economically secured to the reel-shaft, so as to make a safe and steady connection therewith, and whereby also it may at any time be readily tightened
25 as to such connection; and it consists in applying circumferentially about the shaft a series of wedge-shaped wear-plates and combining therewith a sprocket-wheel having corresponding wedge-shaped recesses in the central
30 bore of its hub, so that when it has been slipped into position over these plates, and is driven in its normal direction, it shall clutch and clamp the shaft; in combining with the sprocket-wheel and wedged wear-plates encircling the reel-shaft a clamping-belt passing
35 through a circumferential slot in the wheel-hub and into the shaft, and having its head resting upon a wedge-seat or incline on the periphery of said hub, opposed in action to the clutching-connection between the hub and
40 wear-plates, so that by tightening the bolt the wheel will be rigidly held to the shaft; and in the various other combinations and details of construction hereinafter described and claimed.

45 In the drawings, Figure 1 is a perspective view of a harvester-reel and so much of its supporting and driving mechanism as is necessary to the present description. Fig. 2 is a side elevation of a driving sprocket-wheel
50 secured upon the reel-shaft according to my invention, with said shaft and the wheel-hub

in section to more clearly indicate the arrangement of parts; Fig. 3, a vertical section transversely through the wheel and longitudinally of a portion of the reel-shaft, and Fig. 4 a detail of one of the curved wedge-plates to be
55 secured to the shaft.

A is a wooden reel-shaft, with the usual beaters, *a*, and supported upon the jointed frame E, of any suitable form. At the inner
60 end of the shaft is a sprocket-wheel, C, driven by a chain, *c*, suitably geared with the harvester. In order to secure this sprocket-wheel upon the wooden shaft I form its central bore with a series of inclines or internal ratchet-
65 shaped friction-teeth, *f*—two or more.

Circumferentially around the reel at that point where the sprocket-wheel is to rest, is placed a series of wedge-shaped wear-plates, G, corresponding in length and outline with
70 the recesses or inclines in the hub. These wear-plates are secured to the shaft with screws *g* or other fastenings, applied near the thickest edges, the opposite edges being left free
75 in order that under pressure they may bind firmly upon the shaft and tend constantly to take up all wear beneath them.

As thus described, it is evident that if the sprocket-wheel is slipped into place upon the wear-plates and held from lateral movement
80 by any suitable device, it will clutch or bind upon said plates when driven in its normal direction, and that any wear or abrasion of the wooden shaft will be compensated for by a further and further binding upon these
85 plates. For the purpose of securing the wheel from lateral movement, as just intimated, its hub is slotted circumferentially, as at *h*, and a bolt, K, passed through this slot into the shaft beneath. To receive this bolt the shaft
90 has previously been bored and one of the wear-plates at least will have a corresponding bore, but to avoid selection each of these plates may be cast with similar bore, so that the first one taken up can be applied.
95 A seat for a nut is formed in the shaft at the farther end of the bore, and this nut being dropped or forced into its seat is confined therein. The bolt being then passed through the hub and shaft and screwed into the nut
100 will retain the sprocket-wheel in its position against lateral movement, while the slot in

the hub will permit sufficient peripheral movement over the shaft to cause the teeth of the hub to bind upon the wear-plates. The bolt has a distinct, and in a sense independent, agency in preventing lateral movement of the sprocket-wheel alone; but I propose also to give it a second agency as a means for clamping the wheel when it has become firmly engaged with the shaft, and to prevent reverse motion or loosening or disengagement of the clutching-grip between the two. To this end the sides of the slot in the wheel-hub rise or are inclined to form a seat for the head of the bolt, and this incline is opposed in action to the clutch-engagement between the hub and wear-plates—that is to say, when the hub is firmly clutched upon the wear-plates and the bolt clamped down upon its own inclined seat, the two actions will be opposite to each other, the bolt and incline preventing reverse motion of the sprocket-wheel upon the shaft, while the hub and wear-plates prevent motion independently of the shaft.

While I have described my improvement as attached or employed in connection with a sprocket-wheel, it is evident that it can be equally as well applied to a gear-wheel, and hereinafter where I employ the term "wheel" in the claims, I intend that a gear-wheel shall be understood as an equivalent of a sprocket-wheel; nor do I intend to limit myself to the application of this fastening arrangement upon a reel-shaft alone, as there are many other situations in which it can be employed with advantage.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of the wooden shaft, the

wedged wear-plates secured circumferentially thereon, the wheel having internal teeth in its hub to match with said wear-plates, and the bolt passing through a slot in the hub and into the shaft to prevent lateral movement of the wheel.

2. The combination, substantially as hereinbefore set forth, of the wooden shaft, the wedged wear-plates independently secured about its periphery, the wheel having inclines or teeth in the bore of its hub to match said wear-plates, the bolt passing through a circumferential slot in the hub, and the inclined seat for the head of said bolt.

3. The combination, substantially as hereinbefore set forth, of the wooden shaft, the wedged wear-plates independently secured about its periphery, the nut confined in a seat in said shaft by one of the wear-plates, the wheel having internal teeth or inclines in its hub to match and engage with the wear-plates, and the bolt passing through the shaft to engage with the nut in said shaft.

4. The wedged wear-plate, formed to embrace a portion of the periphery of the shaft, and having a central perforation for the passage of the clamping-bolt.

5. The driving sprocket or gear wheel formed, substantially as hereinbefore set forth, with internal friction teeth or inclines in the bore of its hub, a circumferential slot through said hub, and an inclined seat along the length of said slot opposed in its action to the action of the internal friction-teeth.

WILLIAM R. BAKER.

Witnesses:

JOHN V. A. HASBROOK,
PAUL ARNOLD.