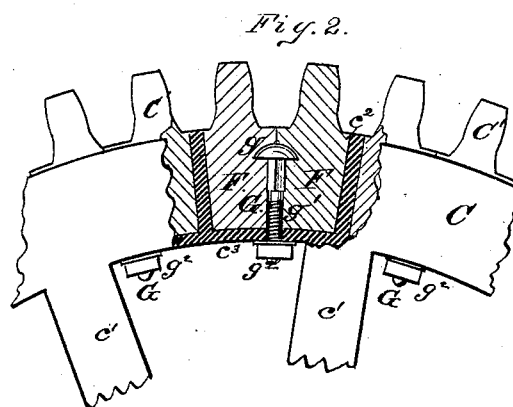
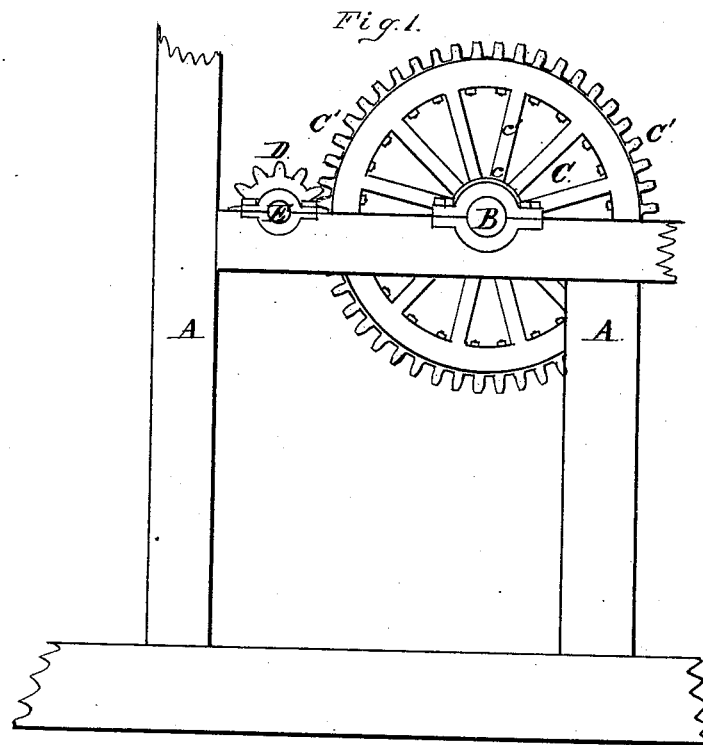


W. S. REEDER.  
Cotton-Gin.

No. 215,676.

Patented May 20, 1879.



Attest:  
*Geo. H. Knight*  
Walter Allen

Inventor:  
William S. Reeder  
By *Knight Bros.*  
Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM S. REEDER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO KINGSLAND, FERGUSON & CO., OF SAME PLACE.

## IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. **215,676**, dated May 20, 1879; application filed February 24, 1879.

*To all whom it may concern:*

Be it that known that I, WILLIAM S. REEDER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cotton-Gins, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The first part of my improvement relates to the driving connection between the saw-shaft and the brush-shaft. This, so far as my knowledge extends, has always heretofore consisted of a crossed belt. This connection is objectionable for two reasons: First, it does not give a "positive" motion to the brush-shaft, and, second, the slipping of the belt is liable to generate electricity, and the electric sparks may set fire to the finely-divided vegetable fiber and dust loading the air around the gin.

My improvement consists in combining, with the saw and brush shafts of a cotton-gin, spur-wheels which engage and cause the positive motion of the brush-shaft from the saw-shaft.

My invention also consists in providing one of the spur-wheels with wooden cogs, so that there shall be no contact of metal with metal. This is to avoid the possibility of striking fire, owing to the presence of gritty dust, which is always present in the air when cotton is under ginning or cleaning treatment.

My improvement also consists in the connection of the wooden-toothed wheel, and consists in casting the frame of the wheel with recesses in its periphery, each recess being large enough to receive the shank of two or more teeth, which are fitted in side by side, and held in by a screw-bolt, as more fully set forth hereinafter.

In the drawings, Figure 1 is a side view of the drive-wheel and follower or pinion. Fig. 2 is an enlarged view of a portion of the drive-wheel, with part in section to show the construction.

Part of the frame of the gin is shown at A; but this forms no novel feature of the invention. B is the saw-shaft, carrying a spur-wheel, C, which engages and propels the pinion D upon the brush-shaft E. The pinion D has the ordinary metal cogs; but the cogs C'

of the wheel C are of wood, for the purpose before stated.

I do not claim, broadly, the combination of a wooden-toothed wheel with a metal-toothed wheel or pinion, for this is an old arrangement in mechanism; but in the present case it performs a new function and has special value.

I will now describe the special construction of the wheel C, which constitutes the second part of my invention. This has a usual hub, *c*, and spokes *c'*. Its rim is divided into sockets *c''*, to receive the tooth-blocks F. These sockets are made in frusto-pyramidal form, with their larger ends open to the periphery. Each socket is formed to receive two teeth-blocks, F F, side by side, as shown.

The blocks are held firmly in the socket by a radial bolt, G, whose head *g* and shank *g'* are halved into the proximate sides of the two blocks F. The screw end of the bolt extends through the bottom *c'''* of the socket *c''*, and is fitted with a nut, *g''*. Thus, by the bolt-head and nut, the two teeth-blocks are held in their socket.

It will be seen that this structure provides means for the easy repair of the wheel, as the teeth may be removed when worn by merely taking off the nut *g''* and loosening them in the socket.

It will also be seen that while the nut is screwed fast the teeth cannot move in the socket. Supposing the shrinkage of the block should make them loose in the sockets, they may be readily made tight by removing them and the introduction of shims of paper, sheet metal, or wood.

I am aware that it is not new to construct wheels of various kinds with wooden cog-teeth. I am also aware that it is not new to fasten such teeth in the wheel singly by means of wedges and other fastenings. Such features I therefore do not claim, broadly; but

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the saw-shaft B and brush-shaft E of a cotton-gin, of the spur-wheel C and spur-pinion D, for connecting the two shafts together, as and for the purpose set forth.

2. The combination, in a cotton-gin, of the wooden-cogged wheel C upon the saw-shaft, and the pinion D upon the brush-shaft, engaging therewith, substantially as set forth.

3. The wheel C, constructed with peripheral sockets  $c^2$ , each fitted to receive two or more blocks, F, in combination with said blocks

and the retaining-bolt G, substantially as set forth.

WILLIAM S. REEDER.

Witnesses:

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