

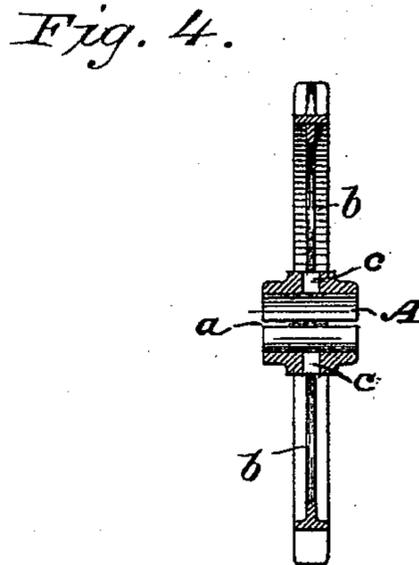
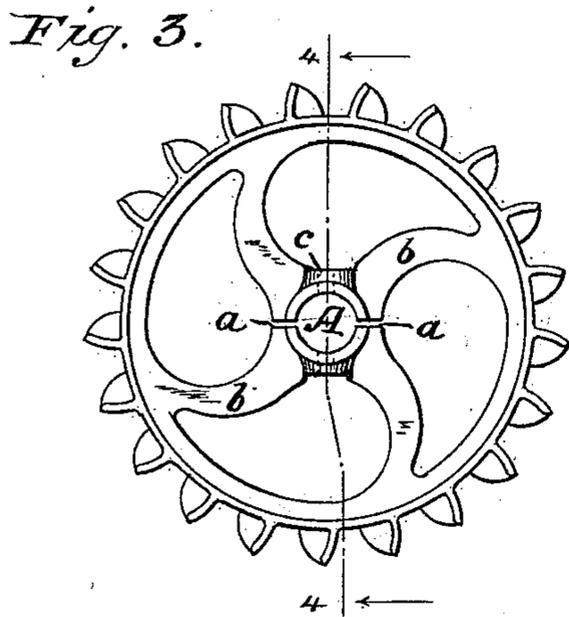
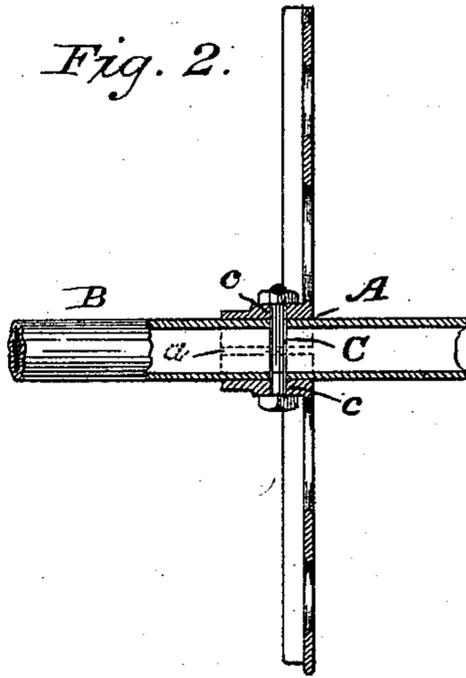
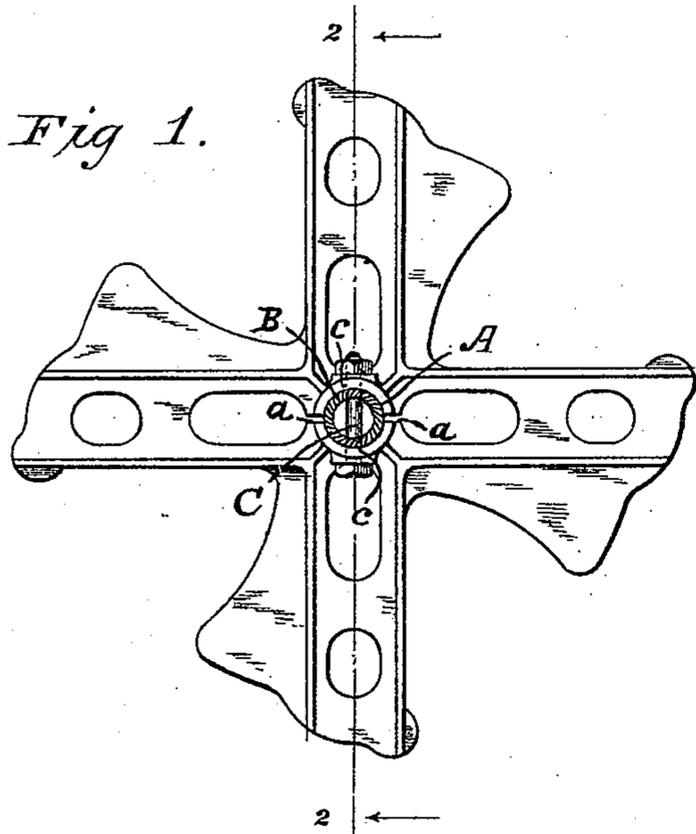
(No Model.)

J. S. DAVIS.

MEANS FOR ATTACHING PULLEYS TO SHAFTS.

No. 438,608.

Patented Oct. 21, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN S. DAVIS, OF CLEVELAND, OHIO.

## MEANS FOR ATTACHING PULLEYS TO SHAFTS.

SPECIFICATION forming part of Letters Patent No. 438,608, dated October 21, 1890.

Application filed June 16, 1890. Serial No. 355,550. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. DAVIS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in the Means for Attaching Pulleys, &c., to Shafts; and I do hereby declare that the following is a full, clear, and exact description of the invention, that will enable others skilled in the art to which it pertains to make and use the same.

The improvements relate to the manner of securing the hubs of any form of wheels, pulleys, spiders, cross-arms, or levers to shafts of any desired cross-section without the use of keys or the usual turning and boring of shaft and hub, respectively; and it consists in splitting the hub longitudinally on one or both of its sides, as preferred, and clamping it to the shaft by means of a cross-bolt, which extends through the shaft and hub and is provided with a clamping-nut, which forces the hub-sections into firm frictional contact with the shaft, while the bolt itself serves as a cross key or pin, which must be sheared before the wheel can turn independently of the shaft to which it is secured.

In the accompanying drawings I show my invention as applied to the spider-arms and sprocket-wheel of a harvester-reel, in which I prefer to use a hollow shaft made of common wrought-iron pipe, because of its lightness and great strength; but obviously it may be used in any other kind of machine and with any other kind or cross-section of shaft, and the details of construction varied within the skill of a good mechanic to adapt it to other places or peculiar conditions without departing from the spirit of my invention, as hereinafter set forth in the claims.

I regard my invention as being particularly valuable in its application to hollow-pipe shafts, as they are generally too thin to admit of having keyways cut into their surfaces, (in the manner usual with shafts of solid sections,) and it is very difficult and expensive to firmly secure a wheel upon such a shaft by either clamping alone or by cross-pins. By my new means I have all the advantages of both of

these means, and in the simplest possible manner secure a cheap but very firm and reliable fastening.

Figure 1 is a side elevation of a harvester-reel spider secured upon a hollow shaft. Fig. 2 is a section of the same on the line 2 2 of Fig. 1. Fig. 3 is a side elevation of a sprocket-wheel adapted to my invention, and Fig. 4 is a section of the same on the line 4 4 of Fig. 3.

As a general thing these or similar parts of a harvester are of cast metal, preferably malleable, and I find that by good foundry practice the hubs can be cored accurately and smoothly enough for harvesting-machine purposes to require no boring or special truing up by machine or lathe work. The holes A, therefore, are cored of such a size that they will just about fit snugly upon the shaft B, and the holes c for the cross-bolt C may also be cored or drilled, if preferred. The slots or open ways a in one or both sides of the hubs are also preferably cored and are so located relatively to the arms or spokes b that the elasticity or spring of the wheel may be relied upon to permit the hub to be drawn into firm contact with the shaft by the bolt C and its nut without materially springing the solid rim into any distorted shape.

For ordinary rough work I do not deem it essential to either turn the shaft or bore the wheel-hub, for the elasticity or spring of my open hub adapts it to fit upon shafts of slightly-varying sizes without turning or boring, though both may be done, if desired.

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

A wheel-hub split longitudinally at its side and provided with a cross-bolt which passes through the hub and shaft and draws them into firm clamping contact, substantially as shown and described.

In testimony whereof I hereunto set my hand, this 12th day of June, 1890, at Cleveland, Ohio.

JOHN S. DAVIS.

In presence of—

H. W. WELKER,  
CARRIE P. WELKER.