W. S. Reeder,

Shaft Coupling.

No. 18,412 Patented Oct. 13, 1857.

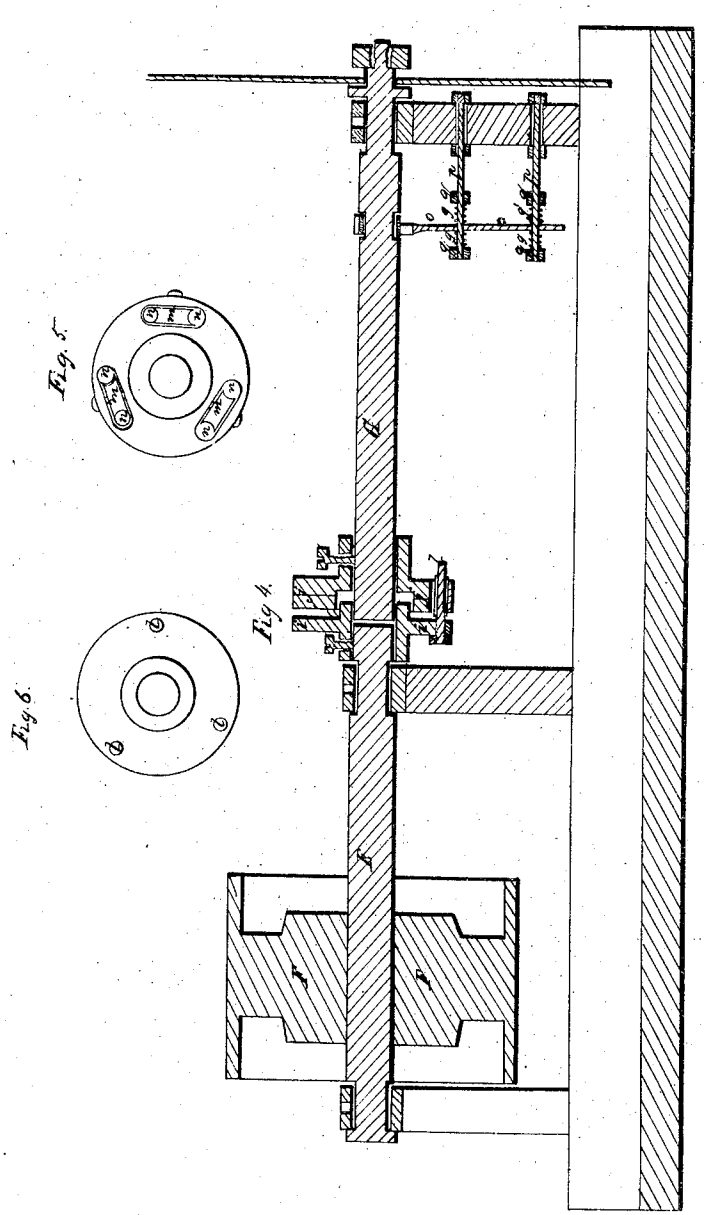


Fig. 5.

Fig. 6.

Fig. 3.

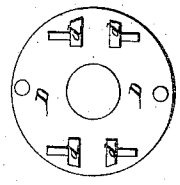


Fig. 1.

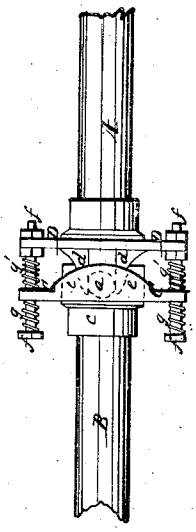
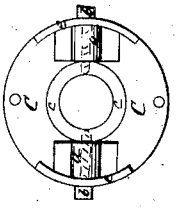


Fig. 2.



UNITED STATES PATENT OFFICE.

WM. S. REEDER, OF ST. LOUIS, MISSOURI.

ELASTIC COUPLING FOR MILL-SHAFTING, &c.

Specification of Letters Patent No. 18,412, dated October 13, 1857.

To all whom it may concern:

Be it 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 Shaft-Couplings for the Purpose of Giving Free End Play to the Shaft, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing of the same, in which—

Figure 1 represents a plan of a coupling embracing my improvement; and Figs. 2 and 3 plans of the coupling pieces detached; Fig. 4 represents a longitudinal vertical section of a modification of my improvement but showing a different arrangement of the adjusting springs, and a circular saw secured to the end of the shaft, and Figs. 5 and 6 plans of the coupling pieces.

The nature of my invention relates to a new and peculiar mode of coupling shafts together for driving circular saws and other purposes, by which any strain of the belt and consequent vibration of the shaft, arising either from irregularities in the former or from the pulley not being cylindrically true, is prevented from being communicated to the shaft upon which the saws are mounted, which otherwise would give a vibratory or trembling motion to the saws, causing them to enter the log in an angular direction, forcing or drawing the collar of the shaft up tight against the journal box and thus preventing it from having that free end play so essential to the easy working of the saw.

My improvement consists in the use of a driver or drivers secured in any suitable manner upon the shaft of the driving pulley when used in connection with a plate or arms securely attached to the shaft upon which the saw is mounted, having mortises through it or their equivalents, through which the drivers pass and with which they engage in driving the saw, friction rolls being suitably arranged against which the drivers play in the longitudinal motion of the saw shaft, it being for this purpose supported and working in bearings independent of the bearings of the pulley shaft, by means of which the saw shaft is so arranged as to have free end play while the other has its journal boxes fitted closely to its shoulders thus preventing freedom of motion.

My improvement further consists in the arrangement and combination of adjustable springs with the drivers and mortised disk by means of which the end play of the saw is adjusted and regulated.

To enable others skilled in the art to make, construct and use my invention I will now proceed to describe its parts in detail.

In the accompanying drawing, Fig. 1, two shafts A and B are represented as coupled together by my improved plan, both having disks (Figs. 2 and 3) secured to their inner ends in any suitable manner. In the disk C (Fig. 2) are formed two mortises, in which friction rolls (*a*) are arranged one on either side of the shaft, suitable lips (*e*) projecting from the face of the disk, through which the screw bolts (*b*) pass which form the shafts of the rolls (*a*), and take into the collar (*c*) of the disk. Through these mortises the drivers (*d*) of the other disk (D), Fig. 3, pass and work against the rolls (*a*), there being one on either side of each roll, as shown in Fig. 1, so that in whatever direction the shafts are turned there will be one driver acting on each roll. The coupling disks (C and D) are bolted together by means of two bolts (*f*) passing through one coupling (C) and screwed fast to the other, on each of which are placed two spiral springs (*g* and *g'*), one on each side of the driver, and backed by a nut and washer, by means of which the saw shaft can be adjusted so as to regulate its end play and the springs weakened or strengthened at pleasure. A modification of this is shown in Figs. 4 and 5, in which (E) represents the driving shaft, upon which is mounted the driving pulley (F), and G the saw shaft. By reference to the drawing it will be seen that the shoulders of the shaft E fit closely but not tightly to its journal boxes to prevent lateral play, while the saw shaft (G) is free to move endwise. Upon the inner ends of these shafts are also secured coupling disks (*i* and *j*). The collar of the former projecting forward of its shaft (E) forms the inner bearing of the shaft G, in which it is free to slide back and forth. In the disk *j* are formed slots (*n*) for the reception of drivers (*l*) secured to the other disk (*i*), which work against friction rolls (*m*) arranged in the slots of the disk (*j*) for that purpose, by means of which the shaft G is free to play back and

forth as the saw accommodates itself to its work.

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

1. The method substantially as herein described of coupling and driving shafts for the purposes set forth.

2. The arrangement of springs (g and g'), or any equivalent arrangement, when used in connection with shaft couplings substantially as herein set forth.

In testimony whereof I hereunto set my hand this eleventh day of February A. D. 1857.

WM. S. REEDER.

Witnesses:
D. KINGSLAND,
H. D. CATLIN.