(No Model.)

E. BRÜNCKER.

DEVICE FOR CONVERTING MOTION.

No. 346,397. Patented July 27, 1886.

Fig. 1.

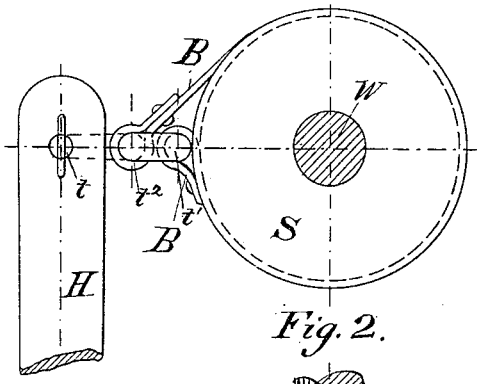


Fig. 3.

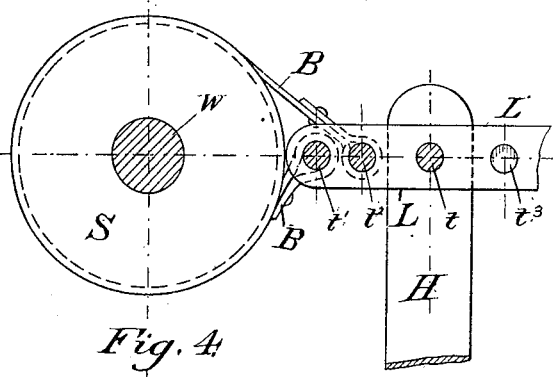


Fig. 2.

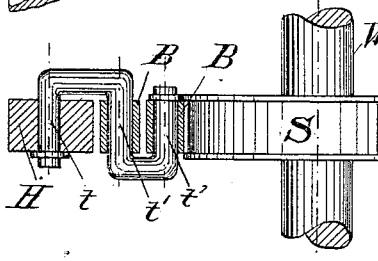


Fig. 4.

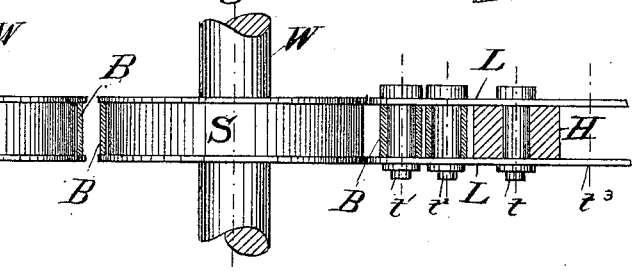


Fig. 5.

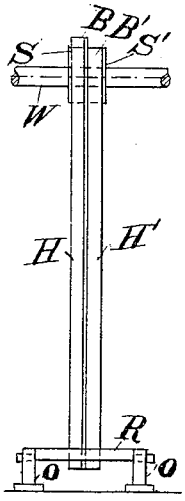
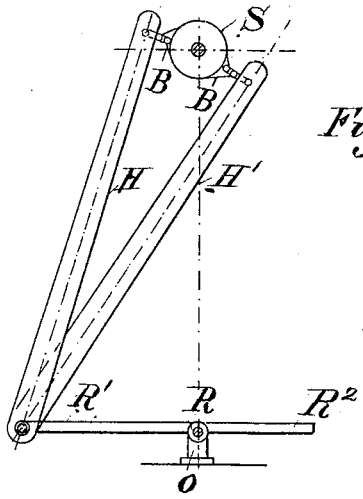


Fig. 6



Witnesses
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UNITED STATES PATENT OFFICE.

EWALD BRÜNCKER, OF SIEGLAHR, NEAR TROISDORF, GERMANY.

DEVICE FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 346,397, dated July 27, 1886.

Application filed March 9, 1886. Serial No. 194,614. (No model.) Patented in Germany September 30, 1885, No. 47,986, and in England December 18, 1885, No. 15,568.

To all whom it may concern:

Be it known that I, EWALD BRÜNCKER, a subject of the Emperor of Germany, residing at Sieglahr, near Troisdorf, in the Empire of Germany, civil engineer, have invented Improved Apparatus for Producing Rotary Motion, (for which I have applied for Letters Patent in the German Empire, dated September 30, 1885, No. 47,986, and in Great Britain, No. 15,568, dated December 18, 1885,) of which the following is a specification.

This invention has relation to apparatus for producing rotary motion, and has for its object the provision of novel means whereby rotary motion may be imparted to a shaft from a pivoted or rocking treadle.

My invention consists in the combination, with a shaft having a fixed drum and a rocking treadle, of a friction band or strap surrounding said drum, and having its ends connected to a lever at different distances from the center of said shaft, the lever being connected to the treadle by a rod, whereby when the treadle is operated the shaft will be given an intermittent rotary motion.

My invention further consists in the novel construction, combination, and arrangement of parts hereinafter described and specifically claimed.

The following is my method of producing rotary motion by treadling without cranks:

Referring to the accompanying drawings, wherein Figure 1 is a side elevation, and Fig. 2 is a plan, of an appliance for treadling without cranks constructed according to my invention, W is the shaft to be rotated, carrying a drum or wheel, S, around the periphery of which latter a band, B, passes, whose ends are connected by pins t' t^2. The said pins or centers are made crank-like, or all in one piece, as in Figs. 1 and 2, or they are made separate, as in Figs. 3 and 4, and suitably united to each other by clips or side plates, L. In the said arrangement the band B, being loose around the periphery of the disk S, will remain so when the connecting-rod H moves upward, which causes the band B to slide around the periphery of the disk or drum S, while the descent of the said connecting-rod H immediately contracts the band B upon the drum and causes it to move with it, and thereby to rotate the axle W from right to left. If, however, the upper end of the band be connected to t', then on the going up of the connecting-rod H a turning to the right of the axle or shaft W will result, while on the descent of the said connecting-rod the band B moves loosely around the drum S. By this arrangement one can produce, by means of the connecting-rod H, any required motion of the axle, the direction being determined by the connections of the ends of the bands, independent of all other arrangements. If the pin t be placed in the hole t^3 the lever-arm, and with it the power, will be increased.

Figs. 5 and 6 show how the motion up and down can be used for the rotation of the axle W. At one end, R', of the treadle R, turning in the bearings O, the two united connecting-rods H and H' are fastened to the ends of the bands B and B' upon the fast drums S and S', so that the arrangement of the ends of the bands is opposite, (see Fig. 6,) so that the band B will on that account descend and the band B' ascend, thereby turning the shaft W to the left. If H and H' were fastened on the opposite sides, R' and R^2, from R, the points of application of H and H' with B and B' would be on the same side and the bands receive the same motion.

It is not necessary that H and H' should lie near each other, while S and S' could also be fastened upon W, where required, suitable to the treadles R.

The above improvements are applicable for the driving or propelling of sewing-machines, lathes, capstans, or velocipedes, and in transmitting motion or power for other machines and mechanical appliances.

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

1. In a machine for producing rotary motion, the combination, with the shaft W, drum S, and band B, surrounding said drum, and having its ends secured to a lever at different distances from the center of said shaft, of a treadle-rod secured to said lever outside the

point of attachment of said band ends, the treadle-rod and the band serving as the sole support for said lever, all substantially as described.

2. In a machine for producing rotary motion, the combination, with the treadle B′ and treadle-rod H, the shaft W, drum S, and band B, of the lever *t*, consisting of a rod of substantially **S** shape, and serving as a means of attachment and connection for the treadle-rod and the band, substantially as described.

Signed this 15th day of February, 1886.

EWALD BRÜNCKER.

Witnesses:
F. LEONARD,
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Both of Birmingham.