B. Eybel,

Converting Motion.

No. 64,511. Patented May 7, 1867.

Fig. 2.

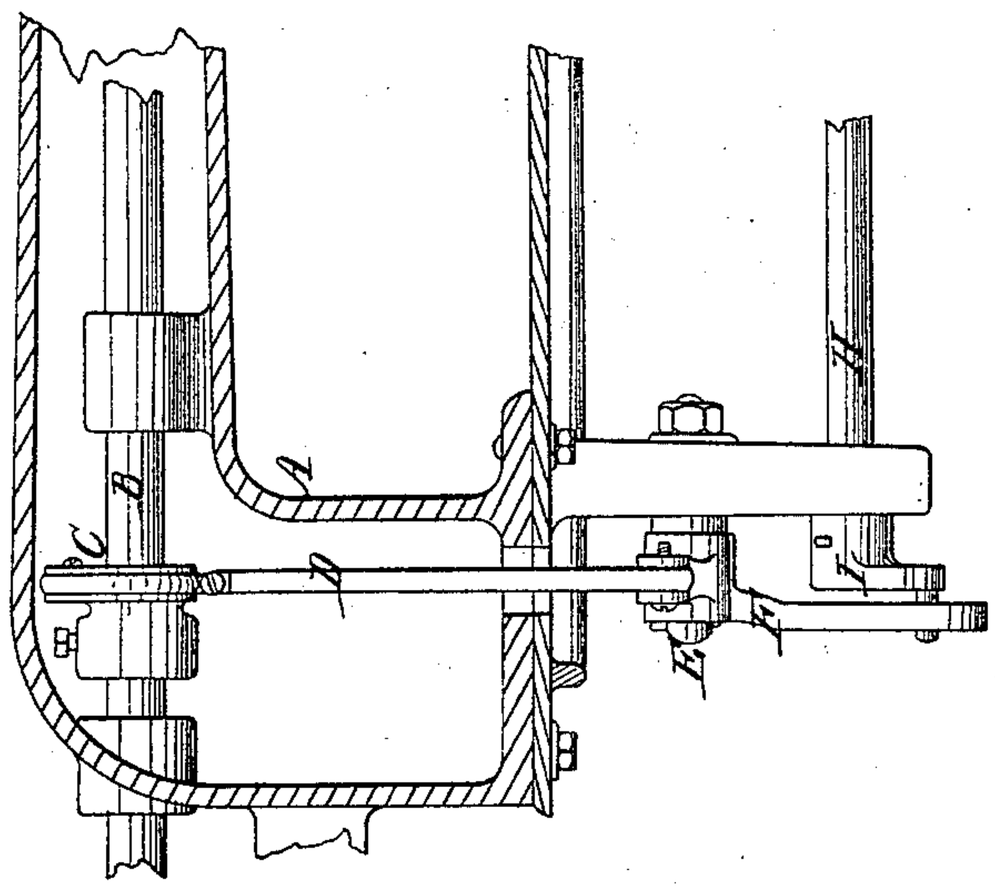
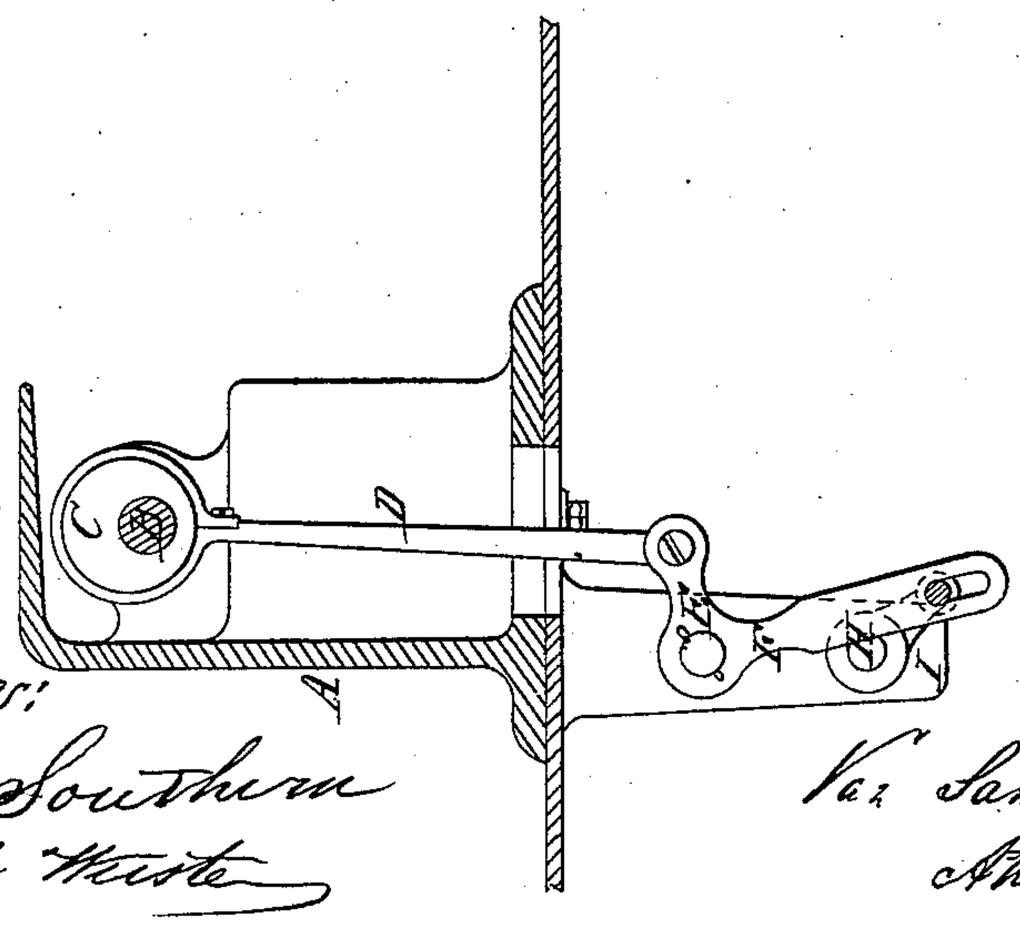


Fig. 1.



Witnesses:

Geo F. Southern

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Inventor:

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per Van Santvoord & Hauff

Attys

United States Patent Office.

BERNHARD EYBEL, OF NEW YORK, N. Y.

Letters Patent No. 64,511, *dated May* 7, 1867.

IMPROVEMENT IN DEVICE FOR CONVERTING MOTION.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, B. EYBEL, of No. 123 Orchard street, in the city, county, and State of New York, have invented a new and improved Device for Converting Motion; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is an end elevation of an apparatus made according to my invention.

Figure 2 is a side elevation.

The object of this invention is to convert continuous rotary motion into oscillating or vibrating motion by means of an eccentric, or its equivalent, on the rotating shaft, and a suitable connecting-rod extending from the eccentric to the short arm of an elbow-lever, whose longer arm is slotted to receive a crank-pin of the shaft that is to be vibrated or rocked, in such a manner that with a comparatively small eccentric an oscillating motion over an arc of ninety degrees (less or more) can be imparted to the rock-shaft, and all cumbersome or complicated mechanism is avoided.

The invention is useful and applicable in sewing machines for obtaining from the upper or needle-driving shaft the proper motion of the shuttle-shaft, and in other cases where an oscillating or rocking motion over an arc of ninety degrees or more is required.

The letter A designates a frame that supports the several shafts and other parts of the apparatus. B is a shaft, to which an uninterrupted or continuous rotary motion is given by a crank or pulley, or other suitable device. Upon said shaft I form an eccentric, C, which is connected by a strap or collar in the usual way to a connecting-rod, whose outer end is jointed or pivoted to the short arm of an elbow-lever, F, that swings on a stud, E, which projects from the frame. The longer arm of said elbow-lever F is slotted at G to receive the crank-pin of a crank, I, which is keyed to the shaft H, to which a rocking or oscillating motion is to be given. The length of the slot G in the elbow-lever is sufficient to allow the crank-pin to assume its proper positions therein; and the arc of vibration of the crank is determined by the relative proportions of the long and short arms of the said elbow-lever F. The rocking motion of the shaft H may also be increased or decreased, without changing the elbow-lever F, by increasing or decreasing the distance of the fulcrum E of the elbow-lever F from the shaft D, and by a corresponding decrease or increase in the length of the crank I.

By this construction and arrangement I obtain a great oscillating or rocking motion for the shaft H by the use of a comparatively small eccentric, thereby permitting the mechanism to be brought into a small compass and to be produced at a comparatively small expense.

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

The arrangement of the elbow-lever F, eccentric C, and crank I, in combination with the shafts B H, substantially as and for the purpose set forth.

BERNHARD EYBEL.

Witnesses:

W. HAUFF,

RUDOLF WÜSTE.