G. W. CARY.
Jig-Saw.

No. 212,355. Patented Feb. 18, 1879.

Fig. 1.

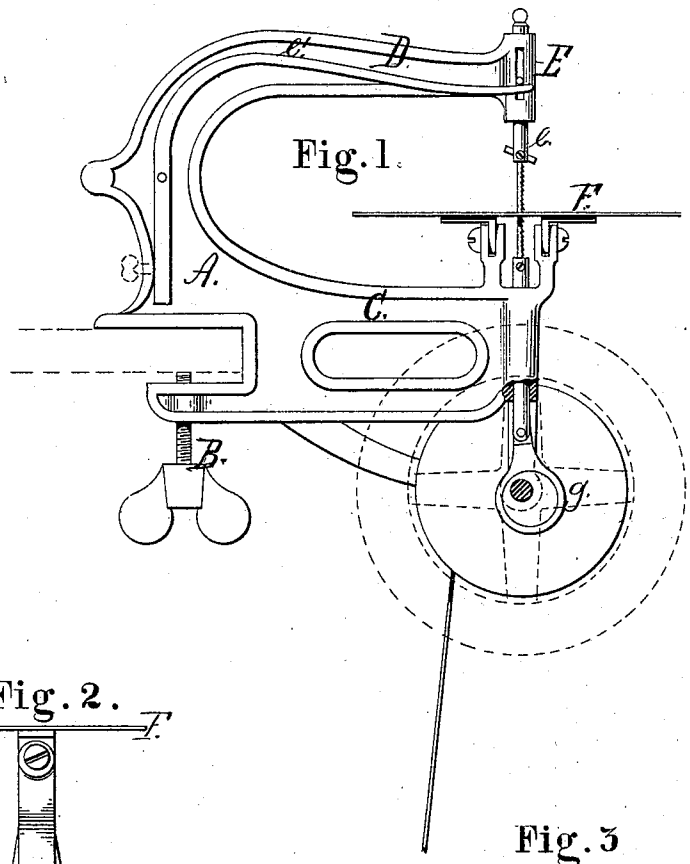


Fig. 2.

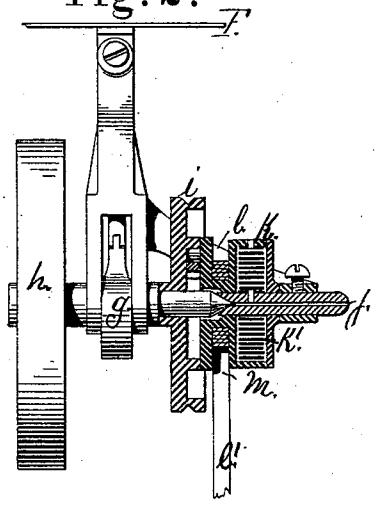
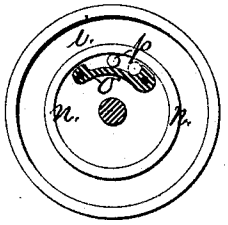


Fig. 3



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UNITED STATES PATENT OFFICE.

GEORGE W. CARY, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN JIG-SAWS.

Specification forming part of Letters Patent No. **212,355**, dated February 18, 1879; application filed November 21, 1878.

To all whom it may concern:

Be it known that I, GEORGE W. CARY, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Jig-Saws; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a view of my improved jig or fret saw, shown as secured to a table. It is shown partly in section, so as to show the eccentric or pitman connection with the saw more clearly. Fig. 2 is an end view of the driving mechanism, parts of which are shown in section. Fig. 3 is a view of the rolling-clutch, by which the driving power is connected with and disconnected from the driving-shaft.

The invention consists in the peculiar and novel manner of driving the saw from a continuously-revolving shaft when the said shaft is driven by a foot-treadle at a greater speed than the treadle, as will be more fully set forth hereinafter, and more particularly pointed out in the claims.

In the drawings, A is a metal frame, arranged to set on a table, and provided with a clamping-arm, in which the clamp-screw B is secured, so that the whole may be readily secured to a table, bench, or similar support. C is a projecting arm, to which the driving mechanism, the vertical slide, and adjustable table are secured. D is a curved arm, to which the slotted guide E is secured, and within which the reciprocating cross-head or slide *e* moves. This cross-head *e* is provided with a pin or equivalent projection resting on the curved spring *e'*, and when the saw is secured and in operation the spring *e'* secures a tension on the saw, drawing the same upward against the crank or eccentric, so that the saw is not liable to be bent or broken. F is a hinged adjustable table. *g* is an eccentric-crank, connected with the guide to which the lower end of the saw is secured. The eccentric-crank *g* is driven by the main driving-shaft, on one end of which the fly-wheel *h* is secured, and on the other end the clutch *i*. This clutch *i* is shown in view in Fig. 3, and may form a part of the fly-wheel, so that the wheel *h* may be dispensed with. *j* is a fixed spindle, in the end of which the driving-shaft has a step-bearing. On the spindle *j* the drum *k* revolves, being limited in its revolution by the helically-coiled spring *k'*, one end of which is secured to the stationary spindle *j* and the other to the drum *k*. The strap *l'* is wound around the drum *k* in the groove *l* and connected with the treadle. When, therefore, the treadle is moved down, the drum *k* will revolve on the spindle in the direction in which the strap *l'* will unwind from the drum, and as the coiled spring is wound in the drum *k* in the opposite direction the tension on the spring *k'* will be increased, and when the treadle makes its upward motion the spring *k'* will turn the drum *k* in the opposite direction, and will rewind the strap *l'* into the groove *l*, so that an alternate rotary motion in an opposite direction will be imparted to the drum *k*.

The face *m* of the drum *k* fits closely to the disk *i*, and a projecting rim, *n*, is placed on the disk *i*, and on the face *m* of the drum a curved incline, *o*, is secured, (shown in section in Fig. 3,) between which and the rim *n* the roll *p* is placed.

Fig. 3 shows the roll *p* in contact with the rim *n* of the disk *i*, and also in contact with the inclined curved piece secured to the drum *k*, in solid lines, and out of contact with the rim *n* in broken lines, thus forming a clutch-connection in one direction, and releasing the same by the rolling of the roller *p* in the other direction, the momentum of the fly-wheel compensating for the time when the strap is rewound, and driving the saw, so that a continuous rotary motion is imparted to the driving-shaft from the reciprocating treadle, and imparting motion to the saw, but many times the number of reciprocations of the treadle.

A saw is thus made to move at a high speed, and fret-work can be executed with great accuracy and rapidity.

The whole driving mechanism may be inclosed in a suitable case and protected from dust and injury.

The construction of the frame is simple and strong. The spring *e'* can be made adjustable

by placing a screw against the heel of the same, as indicated in broken lines in Fig. 1.

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

1. In a jig-saw, the combination, with the saw, the eccentric-crank *g*, and a disk or fly-wheel, of the clutch consisting of the curved incline *o*, the rim *n*, and roller *p*, the spring *k'*, and strap *l'*, arranged to operate substantially as and for the purpose set forth.

2. The combination, with the saw, the eccentric-crank *g*, and a disk or fly-wheel, of a clutch consisting of the curved incline *o*, rim *n*, and roller *p*, the spring *k'*, and strap *l'*, and the adjustable spring *e'*, substantially as and for the purpose set forth.

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