(No Model.)

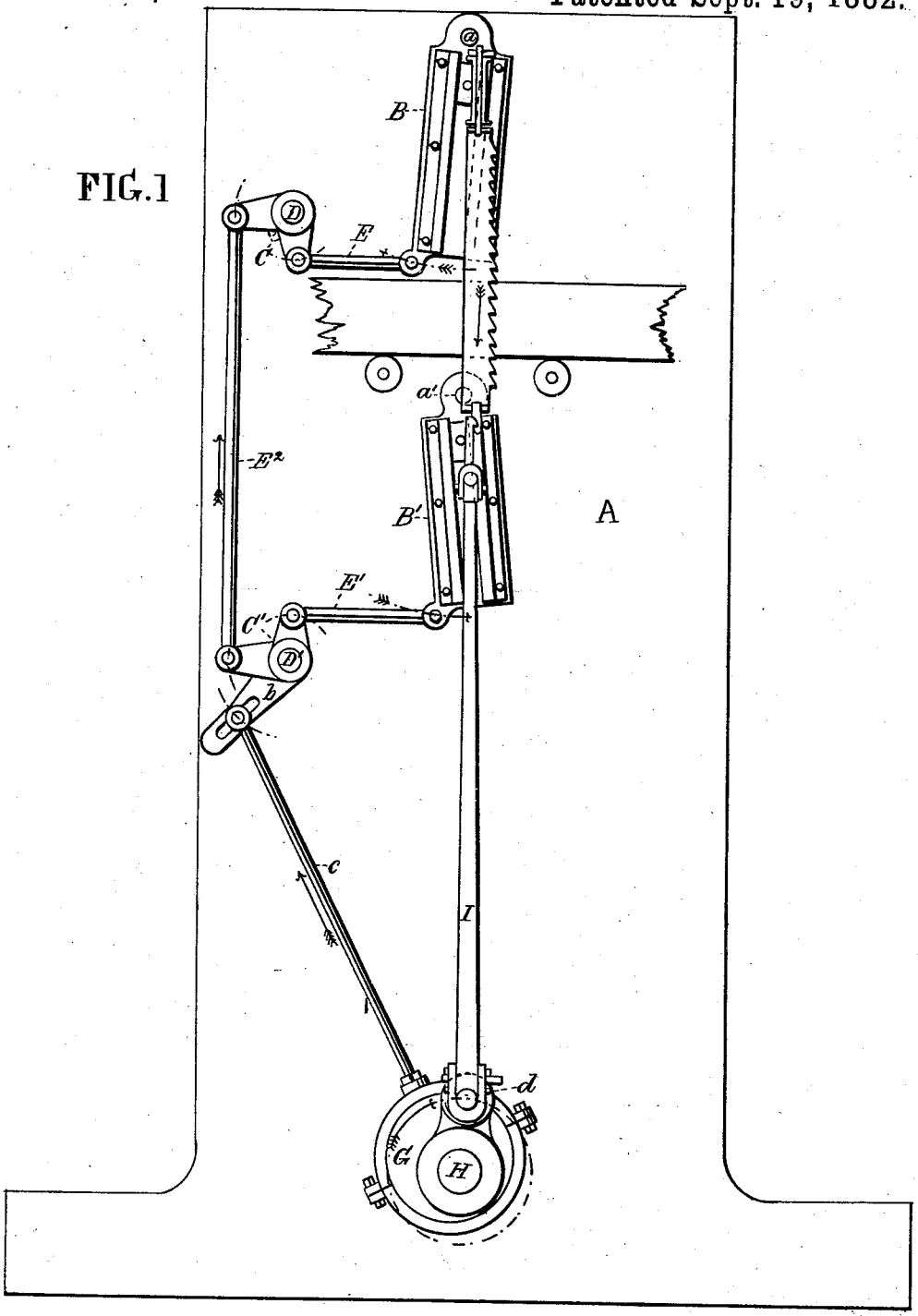
2 Sheets—Sheet 1.

# R. N. NIXON.

## OSCILLATING GANG SAW.

No. 264,473. Patented Sept. 19, 1882.

FIG. 1




Witnesses.

Thomas J. Bewley.

J. M. Richmond

Inventor.

Robert N. Nixon.

per Stephen Ustick. Att'y

(No Model.)

2 Sheets—Sheet 2.

# R. N. NIXON.

## OSCILLATING GANG SAW.

No. 264,473. Patented Sept. 19, 1882.

FIG. 2

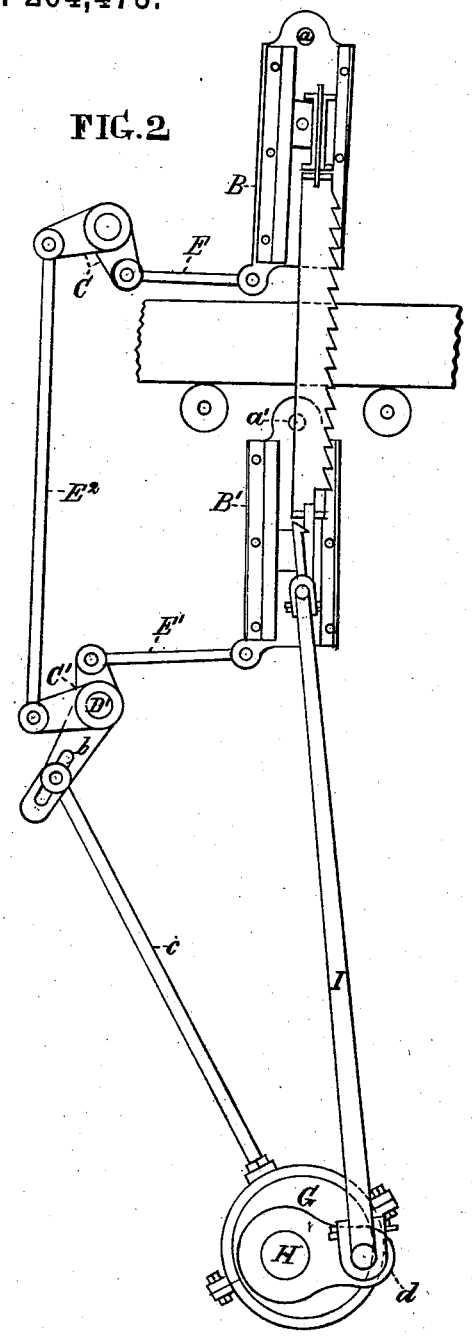
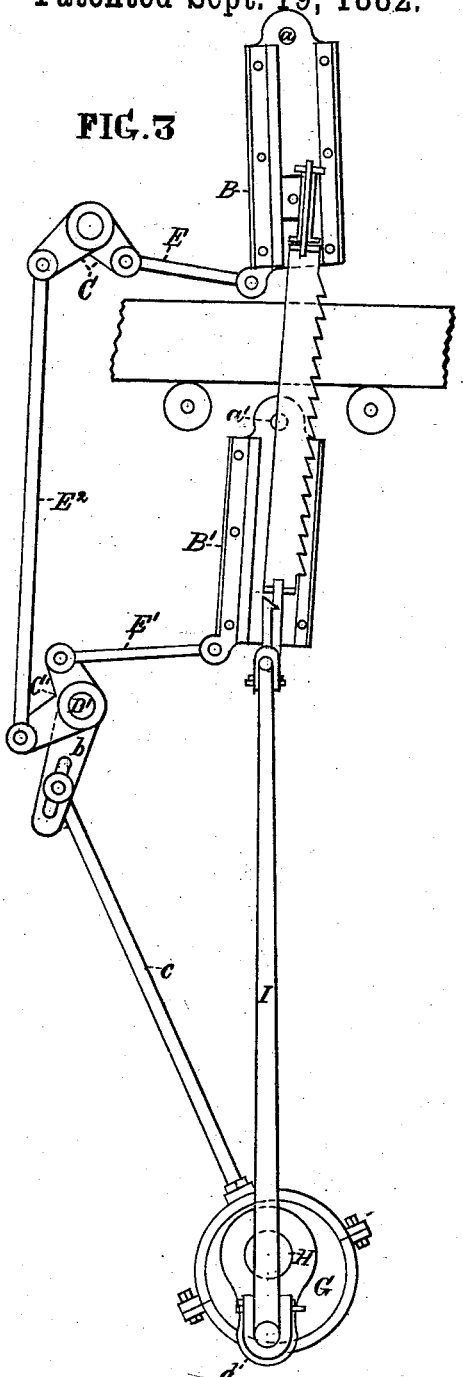



FIG. 3




Witnesses.

Thomas J. Bewley.

J. M. Richmond.

Inventor.

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# UNITED STATES PATENT OFFICE.

ROBERT N. NIXON, OF DUBUQUE, IOWA, ASSIGNOR OF ONE-HALF TO CLARENCE J. LESURE, OF SAME PLACE.

## OSCILLATING GANG-SAW.

SPECIFICATION forming part of Letters Patent No. 264,473, dated September 19, 1882.

Application filed June 15, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT N. NIXON, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented a new and useful Improvement in Oscillating Gang-Saws, of which the following is a specification.

The object of my invention is such a combination of devices with the oscillating slides of gang-saws as will accomplish the desirable result of causing all the teeth to be brought into the most effective operation in the downward stroke of the saw, and in the upward stroke free them from the bottom of the saw-kerf; and the invention consists in the combination of the lower ends of oscillating slides of gang-saws with one arm of cranks respectively by means of connecting-rods, the other arm of the cranks being connected together with a connecting-rod, and one of the cranks having a third arm in combination with the connecting-arm of an eccentric of the driving-shaft, the slides being so arranged as to cause the teeth at the lower end of the saw to cut at the commencement of the downward stroke, and the slide to be oscillated in such a manner as to bring all the teeth at the upper end of the saw gradually into action as the saw comes to its downward stroke. In the upward stroke of the saw the eccentric moves the saw back in a corresponding manner to its first position, so as to free the teeth from the bottom of the kerf.

In the accompanying drawings, which make a part of this specification, Figure 1 is a side elevation of the upper and lower oscillating slides, B and B′, and one of the saws in combination with one side of a gang-saw mill and operating devices. Fig. 2, Sheet No. 2, is a diagram showing the position of the saw and parts attached when the saw has reached one-half of its downward stroke. Fig. 3 is a diagram showing the position of the saw at the termination of the downward stroke.

Like letters of reference in all the figures indicate the same parts.

A represents one of the housings.

B and B′ are respectively the upper and lower oscillating slides at one side of the mill, corresponding slides and their operating mechanism being connected with the opposite housing. They swing on pins *a* and *a′*, which are connected with the side of the housing.

C and C′ are respectively bell-crank levers, which are situated on horizontal shafts D and D′, shown in cross-section. The lower end of the upper slide, B, has a joint-pin connection with one end of the horizontal connecting-rod E, the other end of the rod being in like manner connected to the downward-projecting arm of the bell-crank C; and the lower end of the slide B′ is connected in like manner to the upwardly-projecting arm of the bell-crank lever C′ by means of the connecting-rod E′; and the horizontal arms of the bell-crank levers have a joint-pin connection with the vertical connecting-rod $E^2$. The lower bell-crank lever, C′, has a third arm, *b*, which has a joint-connection with the free end of the rod *c* of the eccentric G, which is situated on the driving-shaft H.

I is a pitman connected at its lower end with the arm *d* of the driving-shaft and also its upper end with the gang-saw frame in the usual manner.

The upper slide, B, being arranged with its lower end drawn slightly backward from a vertical position and the like end of the lower slide correspondingly forward, when the saw is at the termination of the upper stroke, whereby the lower end of the saw is thrown slightly forward, the teeth at the lower end of the saw commence cutting first as the driving-shaft revolves in the direction of the arrow, and the slides B and B′, by their intermediate connection with the eccentric G, by the time the saw reaches the middle of its down stroke are drawn into the position they assume in the diagram, Fig. 2, in which the bottom slide, B′, is drawn outward and the upper slide, B, inward, whereby the saw is brought into a vertical position; and as the upper end of the saw is projected forward until it reaches the termination of its downward stroke, the slides being at that point brought into the position seen in the diagram, Fig. 3, all the upper teeth are gradually brought into action. In the upper stroke of the saw a reverse movement is

given by the eccentric G, which brings the slides B and B′ back to the positions they assume in Fig. 1, whereby the teeth of the saw are drawn away from the bottom of the kerf.

I claim as my invention—

In a gang-saw mill having oscillating upper slides, B, and lower slides, B′, pivoted alike to the gang-saw frame at their upper ends, the combination of the lower ends of the slides B with the downwardly-projecting arms C of the rock-shaft D, by means of the connecting-rod E, and the upwardly-projecting arms C′ of the rock-shaft D′ and slide B′ by means of the connecting-rod E′, the horizontal arms of the rock-shafts being connected together by means of the connecting-rod $E^2$, and the downwardly-projecting arm of the rock-shaft D′ with the driving-shaft H by means of the connecting-rod *e* and the eccentric G, whereby, in the downward stroke of the saws the teeth at the lower end commence cutting, and all the teeth are gradually brought into action to the termination of the stroke, and in the upward stroke the reverse movements are given, substantially in the manner and for the purpose set forth.

ROBERT N. NIXON.

Witnesses:
F. THORNELY,
G. O. COWLES.