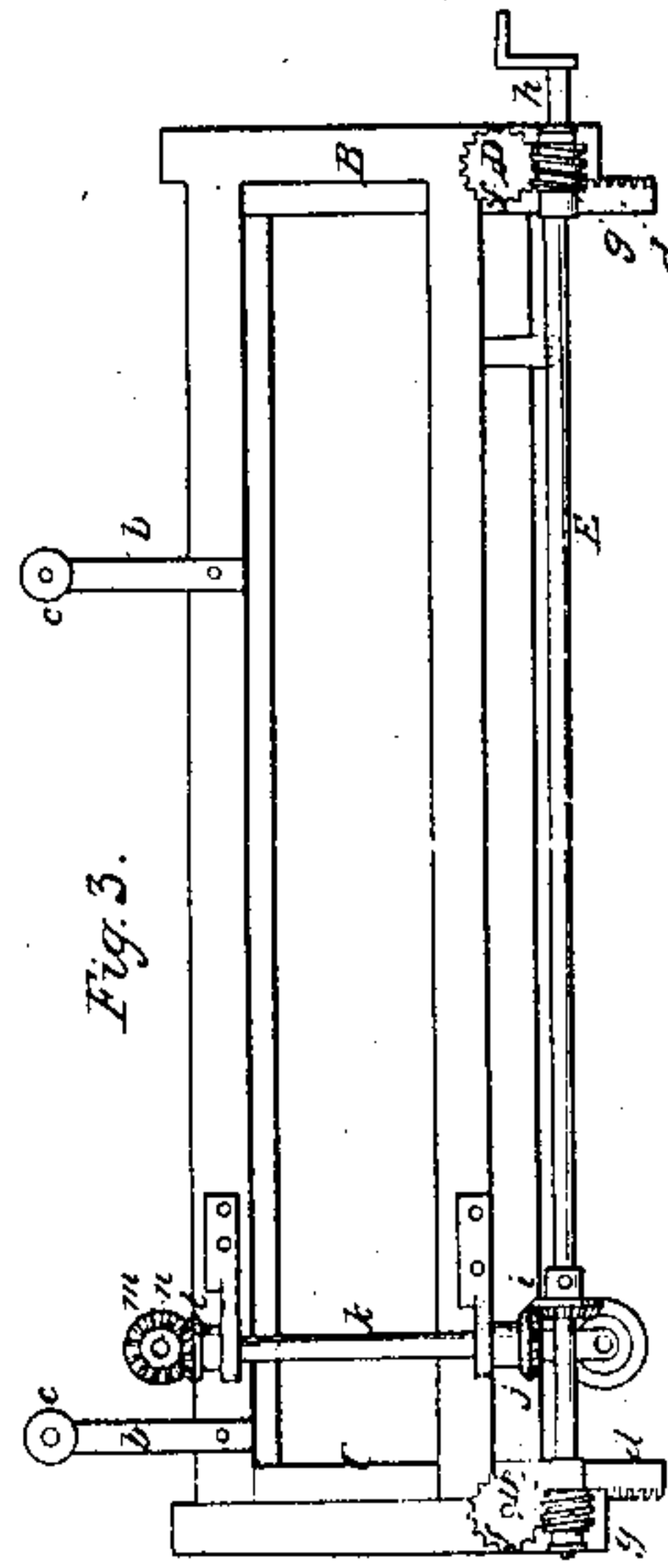
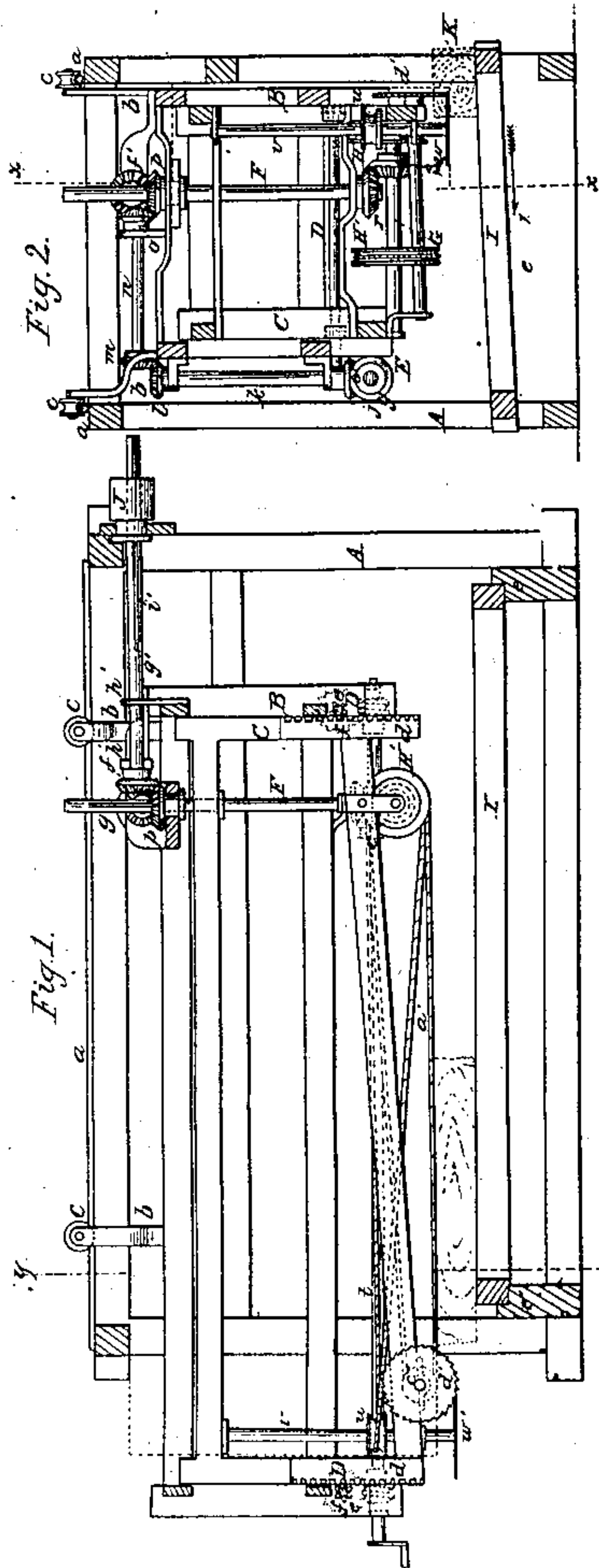


*B. Fulghum,*  
*Circular Saw Mill.*

*No 25,108.*

*Patented Aug. 16, 1859.*



*Witnesses.*  
*John A. Munn*  
*John L. Lyle*

*Inventor.*  
*Benjamin Fulghum*

# UNITED STATES PATENT OFFICE.

BENJAMIN FULGHUM, OF RICHMOND, INDIANA.

## SAWING-MACHINE.

Specification of Letters Patent No. 25,108, dated August 16, 1859.

*To all whom it may concern:*

Be it known that I, BENJAMIN FULGHUM, of Richmond, in the county of Wayne and State of Indiana, have invented a new and  
5 Improved Sawing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

10 Figure 1, is a side sectional view of my invention, taken in the line  $x, x$ , Fig. 2. Fig. 2, is a transverse section of ditto, taken in the line  $y, y$ , Fig. 1. Fig. 3, is a detached side view of the reciprocating frames which  
15 contain the saws and working parts of the machine.

Similar letters of reference indicate corresponding parts in the several figures.

20 This invention relates to an improvement in that class of sawing machines which are designed for sawing square stuff direct from the log or timber and which employ circular saws whose cutting planes are at right angles to each other.

25 The invention consists in having the "counter" or saw frame placed within the outer reciprocating frame in such a way as to admit of a vertical adjustment of the former so that the saws may with the  
30 greatest facility be adjusted and fed to their work.

35 The invention also consists in a peculiar arrangement of means for operating the saws and in giving the log carriage an oblique movement so that the log may be adjusted to the saws in a manner to prevent all unnecessary friction during the operation of the machine.

40 To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a rectangular frame which may be constructed in any proper way to support the working parts of the machine.  
45 On the upper part of this frame A, two ways or guides  $a, a$ , are placed longitudinally, one at each side.

50 B, is a frame of rectangular form which is placed within the frame A, and suspended from the ways or guides  $a, a$ , by bars  $b$ , having grooved rollers  $c$ , attached the rollers fitting on the ways or guides and permitting the frame B, to be moved longitudinally in the frame A. Within the frame B, a frame  
55 C, is placed. The frame C, is allowed to slide freely up and down within the frame

B, and at each corner of frame C, a rack  $d$ , is secured. Into the racks  $d$ , pinions  $e$ , gear, one in each rack, said pinions being on the ends of shafts D, D, placed one at each end  
60 of the frame C. At one or both ends of the shafts D, pinions  $f$ , are placed. These pinions  $f$ , gear into screws  $g$ , which are on shafts E, attached longitudinally to one or both sides of the frame B. To one end of  
65 this shaft a crank  $h$ , is attached and a clutch or sliding bevel pinion  $i$ , is placed on the shaft E, which pinion may be thrown in and out of gear with a pinion  $j$ , on the lower end of a vertical shaft  $k$ , attached to the  
70 frame B. The upper end of shaft  $k$ , has a bevel pinion  $l$ , placed on it, said pinion gearing into a corresponding pinion  $m$ , at the end of a horizontal shaft  $n$ , on the frame B, the inner end of shaft  $n$ , having a bevel  
75 pinion  $o$ , on it which gears into a pinion  $p$ , placed on the upper part of the frame C, and having a shaft F, passing through it, the shaft F, having a feather  $q$ , on it which feather fits in a groove in pinion  $p$ . The  
80 lower end of shaft F, has a bevel pinion  $r$ , placed on it, said pinion gearing into a corresponding pinion  $s$ , on a horizontal shaft G, placed transversely in the lower part of frame C, and having two pulleys H, H',  
85 placed on it. Around the pulley H, a belt  $t$ , passes, said belt passing around a pulley  $u$ , on a saw shaft  $v$ , a circular saw  $w$ , being on the lower end of shaft  $v$ . Around the pulley H', a belt  $a'$ , passes, said belt passing  
90 around a pulley  $b'$ , on a horizontal saw shaft  $c'$ , a circular saw  $d'$ , being at the outer end of said shaft. The position of the two saws relatively with each other is shown clearly in Fig. 2.  
95

In the lower part of the frame A, inclined ways  $e', e'$ , are placed transversely one at each end of the frame, and on the ways  $e'$ , a log carriage I, is placed.

10 In the pinion  $p$ , through which the shaft F, passes a bevel pinion  $f'$ , gears. This pinion  $f'$ , is attached to the inner end of a shaft  $g'$ , which is fitted in bearings  $h'$ , on frame B, and passes through a pulley J, on the upper part of the frame A, the shaft  $g'$ ,  
10 having a feather  $i'$ , on it which fits in a groove in the pulley.

The operation is as follows:—The log or piece of timber K, from which the stuff is sawed is placed on the carriage I, and  
11 the carriage so adjusted that the saws  $d', w$ , will be in line with the inner edge



of the log or timber, the frames B, C, being moved to the termination of its backward stroke. Power is then applied to the pulley J, and the saws  $d'$ ,  $w$ , will be rotated  
 5 through the medium of the gearing  $f'$ ,  $p$ ,  $r$ ,  $s$ , the pulleys H, H', belts  $t$ ,  $a'$ . The frames B, C, are then moved forward by power applied in any proper way to the shaft  $g'$ , and the saws  $d'$ ,  $w$ , cut a square piece of stuff  
 10 from the log or piece of timber K. The carriage I, is then moved in the direction indicated by arrow 1, and a second cut is made, the saws cutting a similar piece of stuff to the first from the log. This operation is repeated until a layer of stuff is cut  
 15 from the upper part of the log or timber. The frame C, is then lowered by turning the shaft or shafts E, by hand or by the rotation of the shaft  $g'$ . If the latter mode is adopted the pinion is thrown in gear with  
 20 the pinion  $j$ , of shaft  $k$ , the frame C, is lowered in consequence of the pinions  $e$ , on the shafts D, gearing into the racks  $d$ , and said frame C, is depressed sufficiently to allow the saws  $d'$ ,  $w$ , to cut a second layer of stuff  
 25 from the log or piece of timber K. In consequence of having the log or piece of timber K, moved slightly downward as it is adjusted to the saws, an effect due to the inclined ways  $e'$ ,  $e'$ , the under side of the saw  
 30

$w$ , is prevented from bearing on the upper surface of the log, and much friction is thereby avoided.

I do not claim the employment or use of two circular saws placed at right angles to each other for the purpose described, for they have been previously used; but,

I do claim as new and desire to secure by Letters Patent,

1. The combination and arrangement of the two frames B, C, placed one within the other and arranged substantially as herein described, so as to admit of the saws being adjusted vertically and also moved horizontally forward and back for the purpose set forth.

2. The arrangement of the shafts,  $g'$ , and F, with their respective gearing  $f'$ ,  $p$ , and the pulley J, in connection with the two reciprocating frames B, C, whereby the saws are rotated and at the same time have a reciprocating motion communicated to them.

3. In combination with the two circular saws  $d'$ ,  $w$ , the inclined ways  $e'$ ,  $e'$ , of the log carriage I, for the purpose set forth.

BENJAMIN FULGHUM.

Witnesses:

JOHN A. McMINN,  
 JOHN S. LYLE.