

P. O'CONNOR.
BAND SAWING MACHINE.

No. 490,212.

Patented Jan. 17, 1893.

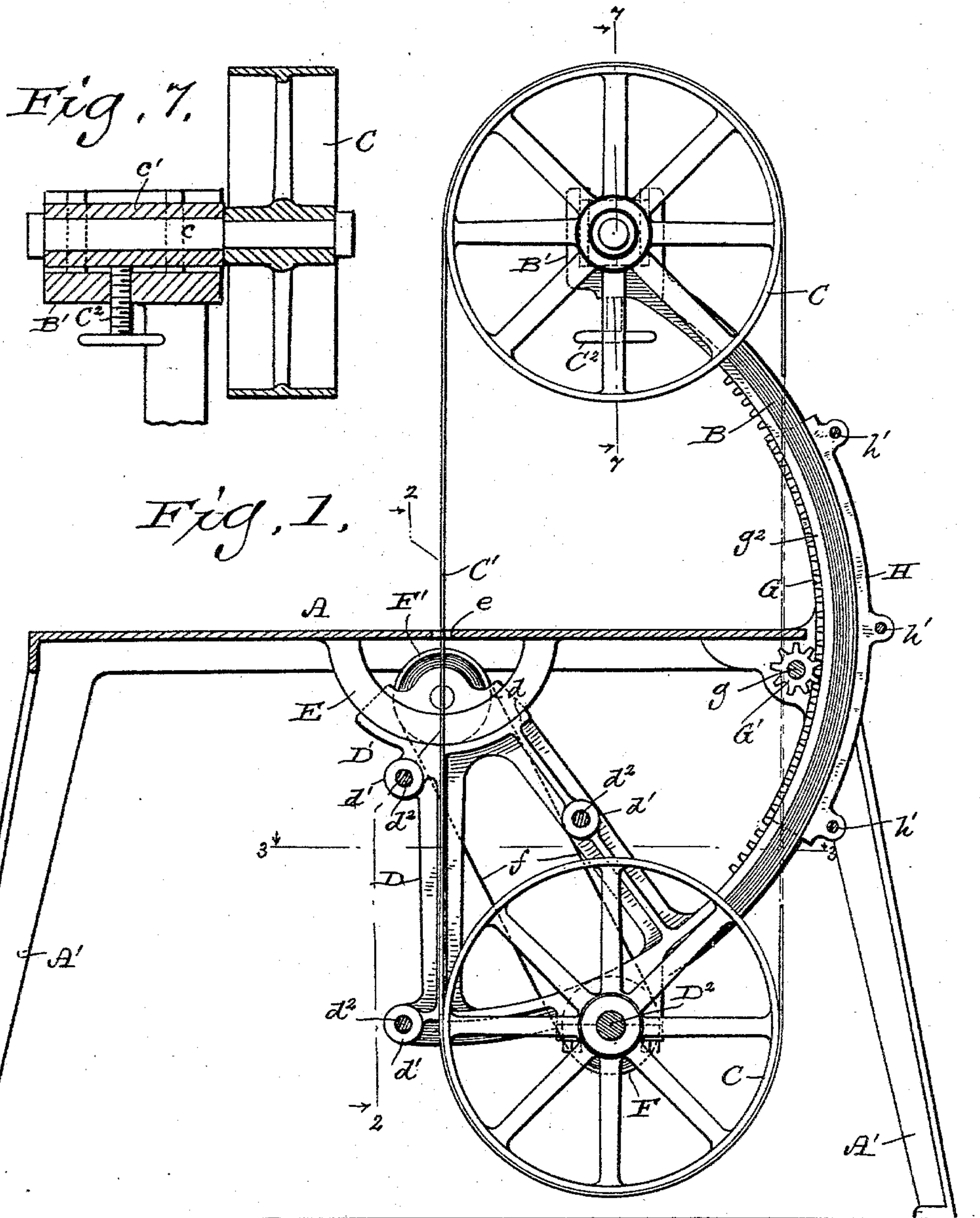
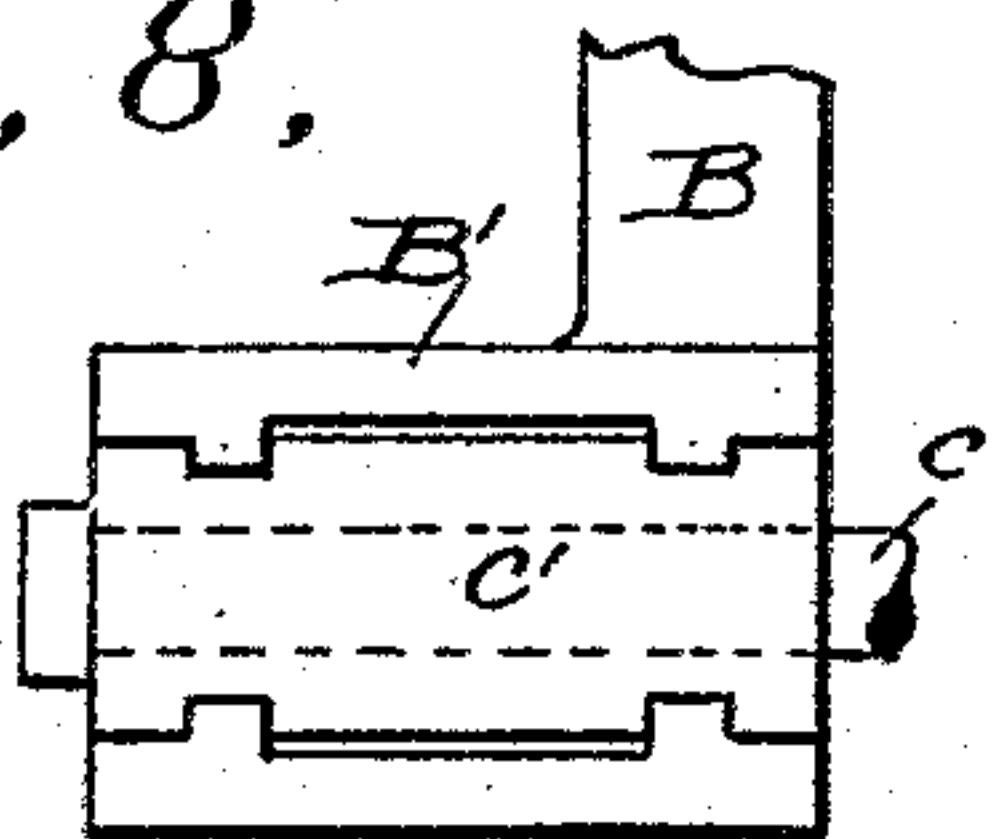


Fig. 8.



Witnesses
Geo. W. Lamy.
John E. Wiles.

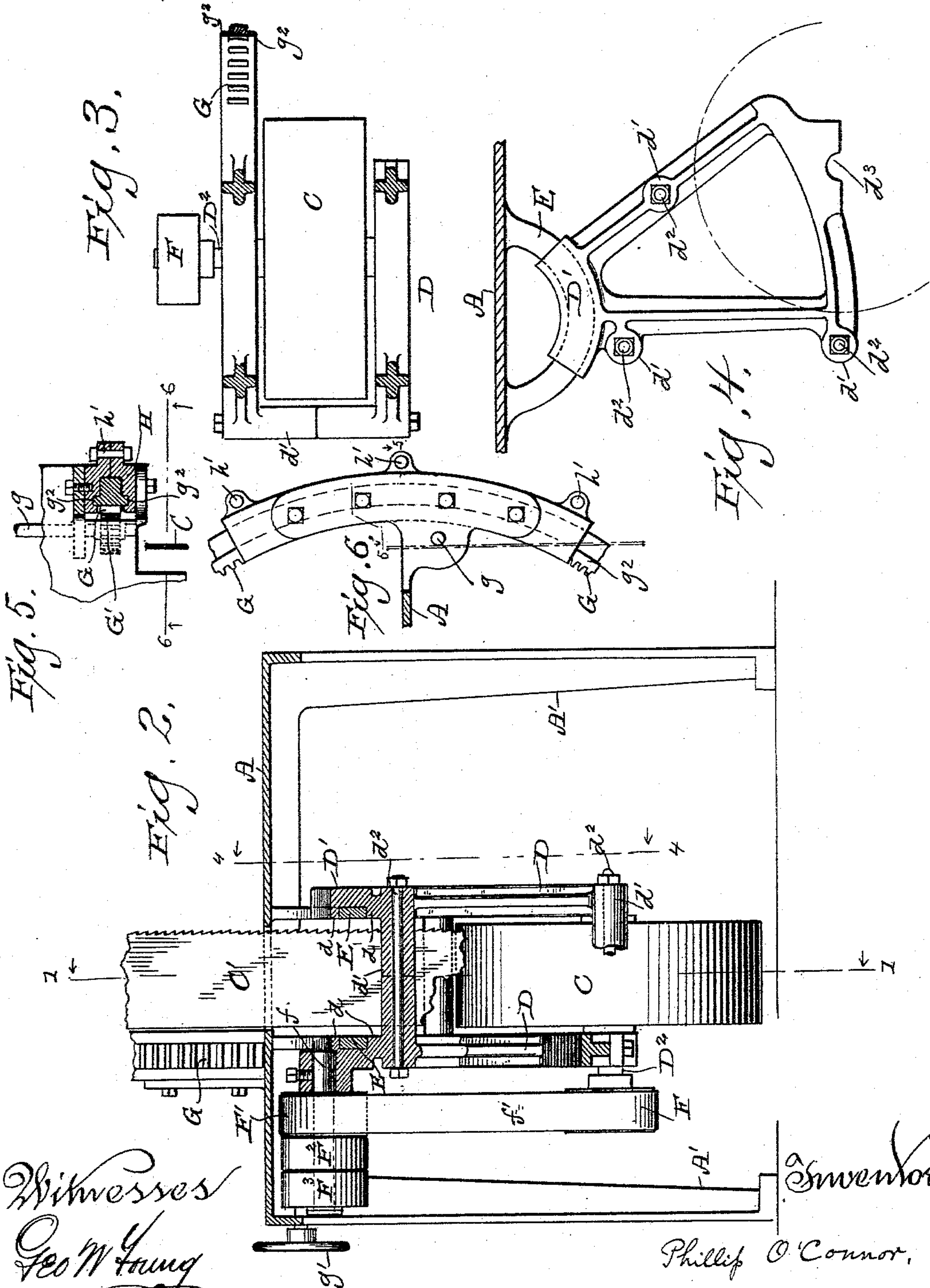
Inventor
Phillip O'Connor,

By H. G. Underwood
Attorney

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Geo W Young
John E. Stiles.

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Phillip O'Connor,
By H.G. Underwood
Attorney

UNITED STATES PATENT OFFICE.

PHILLIP O'CONNOR, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF
TO FREDERICK R. SKIDMORE, OF SAME PLACE.

BAND SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,212, dated January 17, 1893.

Application filed May 5, 1892. Serial No. 431,888. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP O'CONNOR, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Band Sawing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in sawing machines, and relates more particularly to improvements in that class of such machines known as band sawing machines.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings illustrating my invention: Figure 1 is a central vertical sectional view of a machine constructed in accordance with my invention, said section being taken on line 1—1 of Fig. 2. Fig. 2, is a vertical sectional view of the same taken on line 2—2 of Fig. 1. Fig. 3, is a horizontal sectional view of a portion of the machine, taken on line 3—3 of Fig. 1. Fig. 4, is a vertical sectional view taken on line 4—4 of Fig. 2. Fig. 5, is a horizontal sectional view taken on line 5—5 of Fig. 6. Fig. 6, is a sectional view taken on line 6—6 of Fig. 5. Fig. 7, is a vertical sectional view taken on line 7—7 of Fig. 1. Fig. 8, is a top plan view of the bearing for the shaft of the uppersaw-carrying pulley.

In said drawings, A represents the saw table mounted upon suitable legs or supports A' A', B the frame upon which the saw carrying pulleys C C are journaled, and C' represents the saw. One of the saw carrying pulleys, C, preferably the upper one, is made adjustable with respect to the other for the purpose of keeping the band saw tight, and to this end, said pulley is journaled upon a stud shaft c which is secured within a suitable block c' adjustably mounted upon the upper end B' of the frame B, and a set screw C² is arranged to bear against said block so as to crowd the same with the said wheel away from the other wheel so as to increase the tension upon the saw. The frame B is made throughout its length, substantially upon the arc of a circle struck from the point where the band saw

passes through the table A, as a center, and the lower part D of said frame is preferably movably engaged with suitable stationary hangers depending from said table, said connection being made in such manner as to permit the frame to be vibrated about said point of engagement with the hangers, so as to cause the saw to be moved to any desired angle with respect to the table A.

In the particular form of construction illustrated in the drawings, hangers E E formed upon arcs of circles struck from the slot e, where the saw passes through the table, as a center, are provided at opposite ends of the said slot, and the lower part D of the frame is conveniently made in duplicate, and each part thereof provided with arc shaped bearings D' D' adapted for engagement with said arc shaped hangers E E, suitable flanges \bar{d} \bar{d} being provided upon the bearings D' D' and arranged to engage with the inner and outer curved edges of the hangers as shown. The two halves D D of the lower part of the saw carrying frame are provided with transversely extending sleeves \bar{d}' \bar{d}' adapted to engage with each other at their inner ends when the said parts are secured together in their proper relative positions, and through these sleeves are passed suitable bolts \bar{d}^2 \bar{d}^2 by means of which the two parts D D of the frame are securely held together and in engagement with the arc shaped hangers E E in an obvious manner.

At a suitable point in the bottom of each of the parts D D of the frame, is provided a suitable bearing \bar{d}^3 for one end of the shaft D² of the lower saw carrying pulley C, which pulley is arranged to revolve between the two parts D D of the frame. One end of the shaft D² is arranged to project beyond the bearing \bar{d}^3 and carries a drive pulley F, and a stud shaft f is secured upon the frame D adjacent to the center of its rotation and arranged to project beyond said frame and carries a pulley F'. A driving belt f' is trained over the pulleys F and F', and the usual tight and loose pulleys F² F³ are provided upon the outer end of said shaft f, to which pulleys the main driving belt is applied in a familiar manner.

As illustrated in the drawings the curved saw carrying frame B, is provided upon one

side with a suitable rack of teeth G, and a pinion G' is mounted upon a shaft *g* beneath the table and arranged to engage with the teeth G upon the frame, said shaft *g* being
5 arranged to extend to a convenient point beyond the side of the table A and provided with a suitable operating handle *g'*, by which said shaft may be rotated in either direction desired.

10 Suitable ribs *g*² *g*² are conveniently formed upon opposite sides of the curved or arc shaped frame B as shown more particularly in Figs. 1, and 5, and arc shaped guides H provided with correspondingly shaped grooves
15 *h h* are provided upon the stationary part of the machine frame, said guides being conveniently composed of two similar plates arranged to embrace the arc shaped frame B as shown and to permit of a longitudinal move-
20 ment of said frame in either direction, therein. It follows from this construction that, by rotating the shaft *g* and pinion G' in one direction, the frame B will be moved upwardly within the guides, the lower part of the frame
25 swinging upon the arc shaped hangers E E, in an obvious manner, the upper saw carrying pulley being moved forward so as to cause the saw to run obliquely. By an opposite rotation of the pinion G', the frame B will ob-
30 viously be adjusted downwardly in the guides so as to give an opposite inclination to the saw.

It will be observed that, the frame B and the guides therefor as well as the arc shaped
35 hangers E E, being formed upon arcs of circles concentric with the slot *e* for the saw, the adjustment of the frame in either direction will cause the saw to run at an angle but the saw will always run through the central point
40 of the said concentric circles and consequently will always run true in the slot.

By my improved construction I am enabled to adjust the saw frame so as to cause the saw to run at any desired angle to the vertical
45 and thus cut upon any desired bevel. The saw frame may be set to cause the saw to cut upon a bevel either before the work is fed to the saw or while the work is being cut. This feature is especially valuable in machines de-
50 signed for sawing heavy timbers where it is desirable to have the same rest firmly upon the saw table, as for instance, in shaping ship timbers or other irregularly shaped pieces. If desired the saw may be started into the
55 work so as to cut at one angle to the vertical, and as the work is fed to the saw, the saw frame may be gradually adjusted in the other direction, so that by the time the timber has been passed beneath the saw, the saw will
60 have been moved so as to cut upon an oppositely inclined angle, thus enabling me to give to the work any desired form.

My improved machine is furthermore very simple and strong in its construction, and
65 cheap to manufacture.

While I have shown the hangers E E as ar-

ranged upon opposite sides of the slot for the saw, and the two parts D D of the lower portion of the frame as arranged upon opposite sides of the saw, I would have it understood
75 that the arrangement of said parts may be varied in any desired manner so as to afford the necessary bearings for the shafts of the several pulleys.

Various other modifications may be made
80 in details of construction without departure from my original invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A band sawing machine comprising a stationary table slotted for the passage of the saw, one or more arc-shaped hangers concentric with said slot and secured to the lower side of said table, a frame provided with arc
85 shaped grooves and arranged to embrace said hangers, a curved arm extending upward from said frame to a point above the table, pulleys journaled, respectively, upon the frame below the table, and upon said curved
90 arm above the table, and a saw trained over said pulleys, substantially as set forth.

2. A band sawing machine comprising a stationary table slotted for the passage of the saw, arc-shaped hangers, concentric with said
95 slot and secured to the under side of the table upon opposite sides of said slot, a two-part frame provided with arc-shaped grooves adapted for engagement with opposite sides of said hangers, an arc-shaped arm also con-
100 centric with said slot, and extending upward from said frame, pulleys journaled, respectively, upon the said frame below the table, and upon the arc-shaped arm above the table, and a band saw trained over said pulleys.
105 substantially as set forth.

3. A band sawing machine comprising a stationary table slotted for the passage of the saw, arc-shaped hangers, concentric with said
110 slot and secured to the under side of the table upon opposite sides of said slot, a two-part frame provided with arc-shaped grooves adapted for engagement with opposite sides of said hangers, an arc-shaped arm also con-
115 centric with said slot, and extending upward from said frame, pulleys journaled, respectively, upon the said frame below the table, and upon the arc-shaped arm above the table, a band saw trained over said pulleys, an actu-
120 ating pulley on the axis of the lower saw carrying pulley, and a driving pulley journaled upon said frame, substantially as set forth.

4. A band sawing machine comprising a stationary table slotted for the passage of the saw, one or more arc shaped hangers concentric with said slot and located upon the un-
125 der side of the table, an arc shaped frame also concentric with said slot and movably engaged below the table with said hangers and extending upwardly through suitable
130 guides upon the table, pulleys journaled upon said frame above and below said table and

carrying a band saw, an actuating pulley upon
the axis of the lower saw carrying pulley and
a driving pulley journaled upon said frame
adjacent to its point of engagement with the
5 hangers, substantially as set forth.

In testimony that I claim the foregoing I
have hereunto set my hand, at Milwaukee, in

the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

PHILLIP O'CONNOR.

Witnesses:

JOHN E. WILES,
H. G. UNDERWOOD.