

(No Model.)

2 Sheets—Sheet 1.

S. C. WILLIAMS.  
CIRCULAR SAWING MACHINE.

No. 302,181.

Patented July 15, 1884.

Fig. 1.

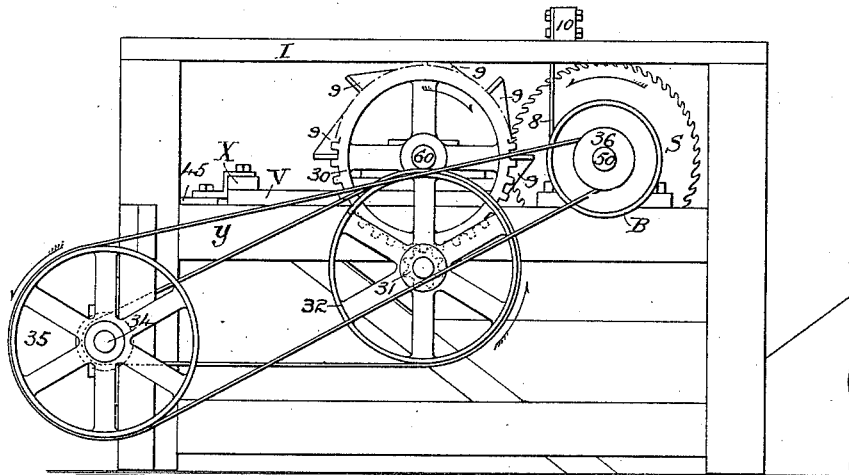


Fig. 4.

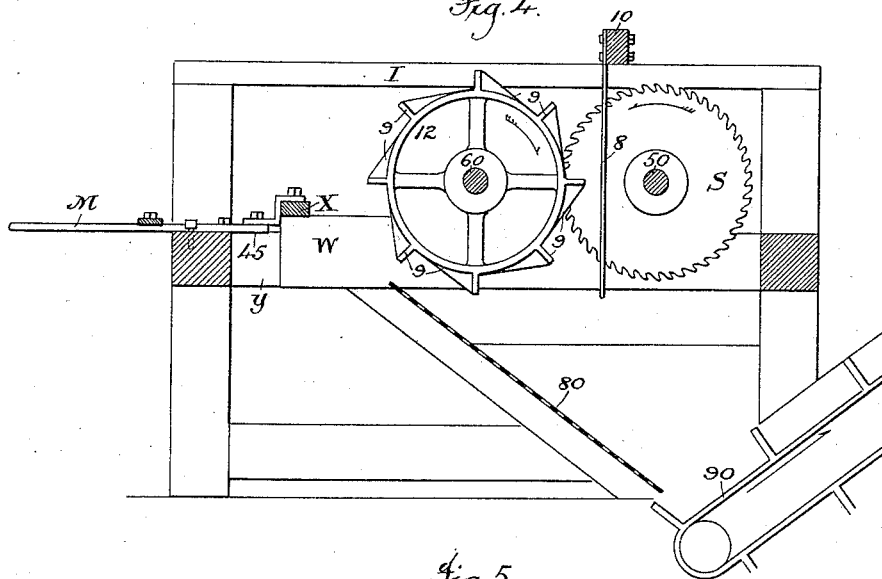
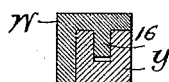


Fig. 5.



Witnesses:

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Inventor:

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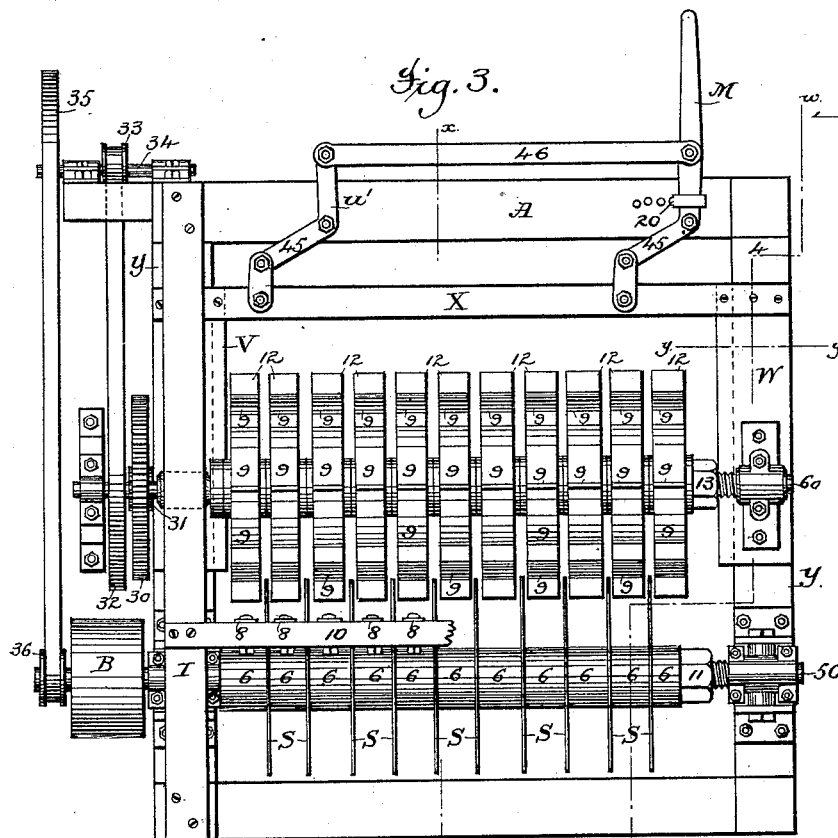
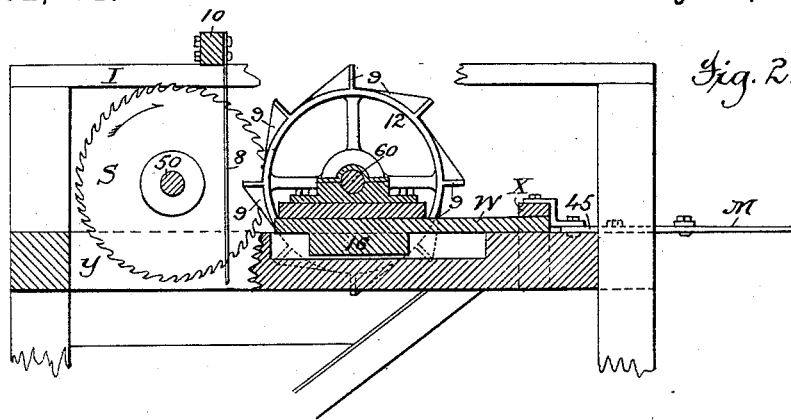
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*Geo. H. Graham*  
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# UNITED STATES PATENT OFFICE

SETH C. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO BLAISDELL BROTHERS, OF SAME PLACE.

## CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 302,181, dated July 15, 1884.

Application filed March 18, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SETH C. WILLIAMS, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Sawing-Machines for Kindling-Wood, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present improvements relate to that class of sawing-machines more especially adapted to the sawing of slabs and other wood not available as timber into small pieces suitable for use as kindlings.

The improvements consist in a machine composed of a gang of saws rapidly rotated in one direction and a work-carrier slowly rotated in an opposite direction, which work-carrier is constructed with stepped supports or holders and provided with means for adjusting its relation to the gang of saws, and in the combination, with such a machine, of spring-bars for preventing the sawed material from clogging the saws, and of a perforated delivery-chute.

That these improvements may be readily understood, the machine herein shown as practically embodying them will be minutely described.

The drawings representing it illustrate by Figure 1 a right-hand side elevation; by Fig. 2, a left-hand side elevation, partly in section on the line *w* of Fig. 3; by Fig. 3, a plan or top view; by Fig. 4, a sectional elevation on the line *x* of Fig. 3; by Fig. 5, a sectional detail on the line *y* of Fig. 3, and by Fig. 6 a detail of the pin for locking an adjusting-lever.

The essential elements of the machine are a gang of circular saws, *S*, mounted fixedly upon a revolving shaft, 50, a rotating carrier having stepped supports 9, and means for adjusting it to and from the saws, and a set of stripping spring-bars, 8. The saws *S* are separated and held an appropriate distance apart by means of collars 6, and are secured by a screw-nut, 11. The tightening of this nut 11 may be depended upon to hold the saws from slipping on the shaft 50; or the latter may be polygonal, and the eye of each saw be appropriately shaped to fit onto the same.

The rotating carrier is composed of a number of sections, 12, strung upon a shaft, 60, and separated such a distance apart by their half-hubs as to provide an opening between contiguous sections, within which the saws *S* may freely run. These sections 12 are each provided with stepped supports 9—say eight, more or less—and the sections are held in place with their stepped supports 9 in horizontal alignment by means of the pressure of a screw-nut, 13, and may, in addition thereto, have polygonal eyes fitting a correspondingly-shaped shaft, if desired. This carrier has its shaft 60 mounted in bearings that are secured to a sliding carriage composed of the slides *V* *W* and a cross-bar, *X*. The slides each have a guide, 16, that runs in slots cut into the side frames *Y*. (See Fig. 5.) The movements of adjustment of the carriage are effected by means of bell-crank levers 45, that are pivoted to the front cross-frame, *A*, and joined together by a link, 46, so as to be simultaneously moved by a handle, *M*. Their adjusted position may be fixed by a pin, 20, (see Figs. 3 and 6,) embracing one bell-crank, 45, and engaging in holes in the cross-frame *A*, or in any other common manner.

The stripping spring-bars 8 are rather stiff blades of steel, of which there are a number corresponding to that of the sections 12 of the work-carrier, and these spring-bars depend from a cross-bar, 10, that is secured to the uppermost members, *I*, (one only of which is shown in Fig. 3,) of the side frames. Said spring-bars extend into the spaces between the saws *S* and reach below the peripheral line or lowermost path of travel of the saws.

By mounting the work-carrier in a sliding adjustable carriage, it may be fixed in such relative position with respect to the saws and spring-bars as to bring the parts into their most effective working position with all sizes of material to be operated upon, and this is especially desirable or necessary, as the dimensions of the saws are decreased by frequent sharpening. The work-carrier is driven at a slow speed relatively to the rapid rotation of the saws, and in an opposite direction thereto (see arrows,) by means of suitable gearing, that shown being a toothed wheel, 30, on one

end of the carrier-shaft 60, and a driving-pin-  
ion, 31, the shaft of the latter bearing a large  
pulley, 32, that is belted to and driven from a  
small pulley, 33, on a short shaft, 34, that  
5 bears a large pulley, 35, in turn driven from  
a small pulley, 36, on the shaft 50, that carries  
the gang of saws.

Beneath the carrier C there is an inclined  
guiding-chute, 80, that is perforated to act as  
10 a sieve. Its upper end underlies the said car-  
rier, and the lower and forward end termi-  
nates over an elevator, 90, that is constructed  
to act as a rotating conveyer.

It now being understood that the shaft 50,  
15 driven by the main belt-pulley B, is run at an  
appropriately high rate of speed in one direc-  
tion to cause the gang of saws to properly op-  
erate, and that the shaft 60 is, through the gear-  
ing, run at such a relatively slow speed in the  
20 opposite direction to allow the stepped sup-  
ports 9 of the sectional rotating work-carrier  
to be supplied with the material to be sawed,  
the operation will be readily apparent. As  
the said carrier slowly revolves, each set of  
25 the stepped supports 9 has a slab or other  
piece of wood to be sawed rested upon them,  
and thus, as each set of supports 9 is thus sup-  
plied with a piece of material to be sawed, the  
same will, as the carrier revolves, be forced  
30 into contact with the gang of saws, and as the  
latter penetrate its body the slab of wood will  
still be supported and held to the carrier by  
the stepped supports, and by reason of the  
extreme rapid motion of the saws, and when  
35 wholly detached, the pieces will be prevented  
from following the saws by the spring-bars 8  
until carried out of their range. As each set  
of stepped supports thus clears the saws and  
is brought to the under side of the apparatus,  
40 the short sawed pieces resting upon them will

be dumped, and, falling upon the chute 80,  
will be guided downward and be deposited in  
the elevator 90, to be thereby conveyed to a  
place of delivery. All of the sawdust pro-  
duced by the sawing operation and such as  
adheres to the cut pieces will pass or be sifted 45  
through the sieve-like chute 80 and become  
deposited behind it, being thence removed in  
any convenient way, as by a blower.

What is claimed is—

1. The combination, with a gang of rotating  
saws, of a rotating work-carrier constructed  
in sections, adapted to run between the saws,  
and means for adjusting the relation of said  
carrier and saws, the same consisting of a  
sliding carriage for the work-carrier and le- 55  
vers for moving it, substantially as described.

2. A sawing-machine consisting of the com-  
bination, with a gang of revolving saws, of a  
rotating work-carrier composed of stepped 60  
sections that protrude between the saws, and  
a series of spring-arms arranged between said  
saws, substantially as described.

3. The combination, with a gang of saws and  
a rotating stepped work-carrier, of a perfo- 65  
rated guiding-chute supported beneath the  
saws, substantially as described.

4. The combination, with a gang of saws and  
a rotating stepped work-carrier, of a perfo-  
rated guiding-chute supported beneath the 70  
saws, and an elevator, 90, in working relation  
to said chute, substantially as described.

In testimony whereof I have hereunto set  
my hand in the presence of two subscribing  
witnesses.

SETH C. WILLIAMS.

Witnesses:

GEO. H. GRAHAM,  
T. H. PALMER.