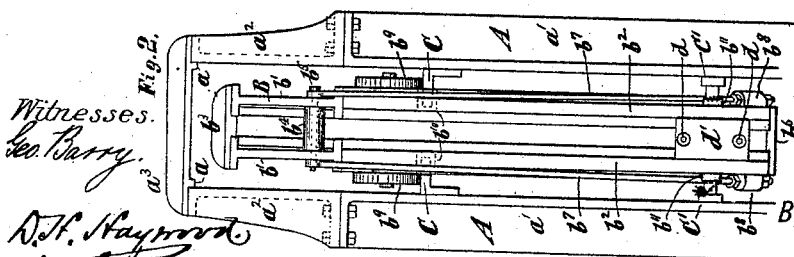
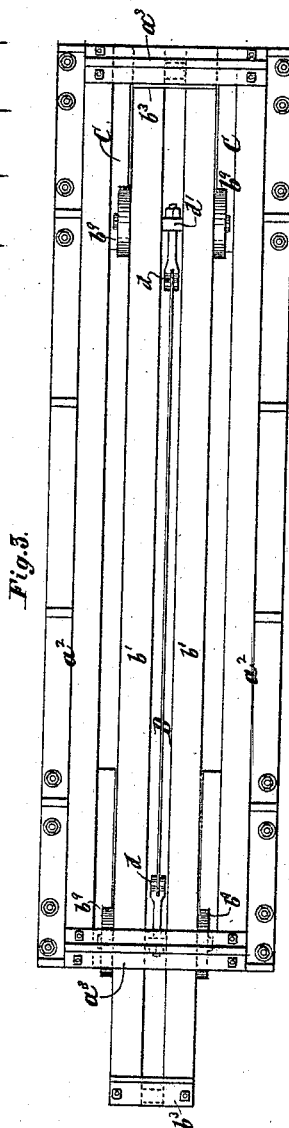
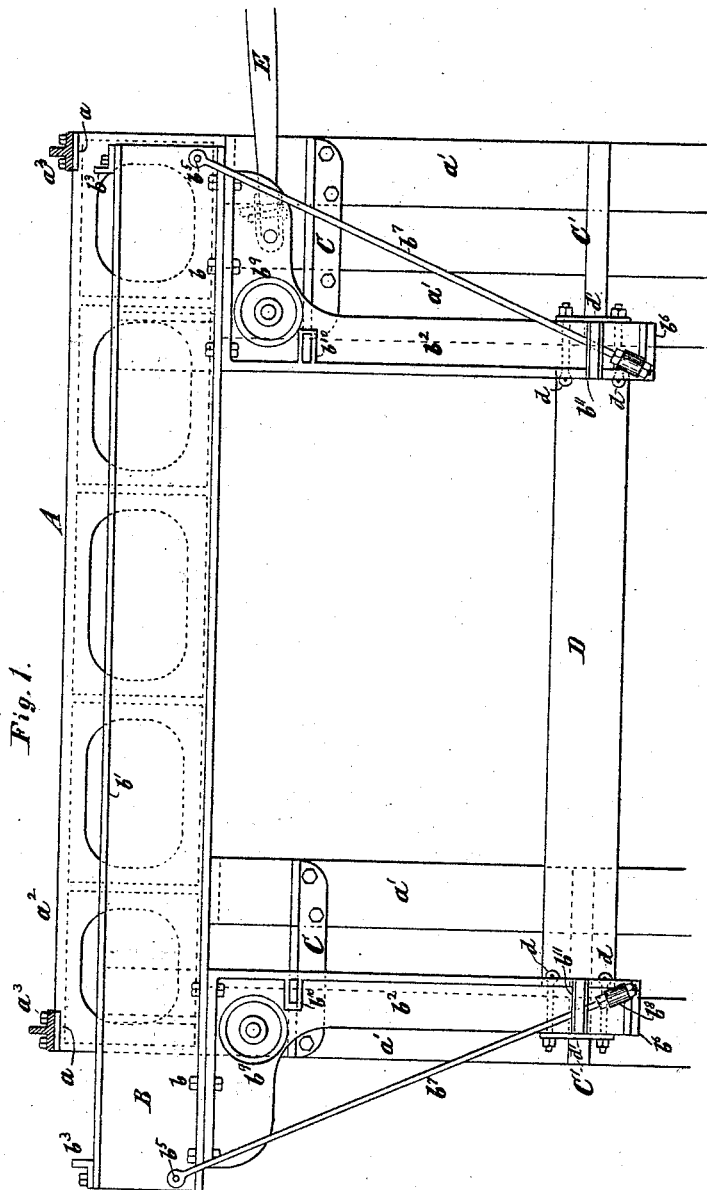


(No Model.)

H. YOUNG.
SAWING MACHINE.

No. 526,477.

Patented Sept. 25, 1894



Witnesses:
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UNITED STATES PATENT OFFICE.

HUGH YOUNG, OF CHICAGO, ILLINOIS.

SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,477, dated September 25, 1894.

Application filed April 16, 1890. Serial No. 348,263. (No model.)

To all whom it may concern:

Be it known that I, HUGH YOUNG, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Sawing-Machines, of which the following is a specification.

My improvement relates particularly to sawing-machines of the kind which are employed for sawing stone. In such machines there is usually employed a reciprocating sash furnished with a blade or a number of blades, and these blades are in many cases armed with diamonds or borts.

In one type of sawing machine neither the sash nor the blade or blades mounted therein, have any vertical movement but merely a reciprocating movement in the same plane, the feed being effected by moving the stone upward.

In another type of sawing machine the sash is lowered to effect the feed of the blade or blades. In still another type, the sash is reciprocated in the same horizontal plane and the blade is lowered within the sash to effect the feed.

My improvement is applicable to any of the described types of sawing machines.

For simplicity of illustration I will represent the improvement embodied in a sawing machine of that type in which the blade is immovable relatively to the sash and the feed is effected by moving the stone up to the saw. This illustration is sufficient for all three types because the construction of the sash would not vary in essential particulars for any of these types and it is in the sash that my improvement resides.

In the accompanying drawings Figure 1 is a side elevation of a sawing machine embodying my improvement, the means for supporting and elevating the stone being omitted. Fig. 2 is an end view of the parts shown in Fig. 1. Fig. 3 is a plan or top view of the parts shown in Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A designates the main frame of the machine.

B designates the sash.

C designates the guides along which the sash is reciprocated and D designates the

blade which is strained in and carried by the sash.

The main frame A, may be made in any way that is sufficient for supporting the sash and its guides but in the drawings it is shown as consisting of a number of upright beams or girders a' , supported in any suitable manner; horizontal beams or girders a^2 surmounting the upright beams or girders, and cross-pieces or stretchers a^3 extending across the upper edges of the beams or girders a^2 . There are two pairs of upright beams or girders a' at each end of the frame. The beams or girders a' of each pair are arranged at a short distance from the opposite pair. On each two pairs of the beams or girders a' which are in line, a beam or girder a^2 is mounted. The beams or girders a^2 may be secured to the beams or girders a' in any suitable manner. Preferably all of them will be provided with flanges and then they may be secured by bolts passing through the flanges. Cross-pieces or stretchers a^3 , here shown as made in the form of inverted T-beams or girders, extend across the tops of the beams or girders a^2 , uniting them together and properly spacing them. These cross-pieces may be secured by bolts passing through their flanges and flanges with which the beams or girders a^2 are provided. Preferably the cross-pieces will be provided on their under sides with lips or shoulders a , which bear against the inner sides of the beams or girders a^2 .

The guides C, are shown as consisting of L-shaped beams or pieces of metal, fastened by bolts against the inner sides of the upright beams or girders a' .

The sash B is composed essentially of horizontal beams b' , and vertical beams b^2 , extending therefrom. As here shown there are two of the horizontal beams b' , and they are arranged side by side and parallel with each other at a short distance apart. They are of the kind of beams which are commonly known as I-beams, having longitudinal flanges on both sides at the top and bottom. There are two pairs of the vertical beams or girders b^2 . At their upper ends they are secured to the under edge of the beams or girders b' , and in order that they may have a firm union with the latter they are provided with lateral

extensions b^* by which their bearing surfaces at their attachment to the longitudinal beams b' are prolonged upwardly beyond their own vertical portions, thereby giving great stability to the sash. Bolts, b , are shown as means for securing the beams or girders b' , to the beams or girders b^2 .

It will be seen that the structure consists essentially of two beams or girders b' , each having secured to the under sides near the extremities two beams or girders b^2 . The cross-pieces or braces b^3 are secured to the tops of the beams or girders b' . These are shown as made of angle-irons having lips which extend between the top flanges of the beams or girders b' , and secured to the latter by bolts, screws or like devices. I have also shown as arranged between the beams or girders b' , spacing pieces consisting of tubes or thimbles b^4 . Bolts or rods b^5 pass through these thimbles and through the beams or girders b' . The lower extremities of these beams or girders b^2 , have spacing pieces b^6 , fitted to them. These may be made of angle-irons or of other suitable form. Bolts, screws or like devices may be employed to secure these spacing pieces b^6 in position.

The beams or girders b^2 may be additionally stiffened or braced to the beams or girders b' , by means of obliquely arranged rods b^7 , fitted at one end to the extremities of the bolts b^5 , and at the other end secured by means of nuts to lugs b^8 formed or otherwise provided on the beams or girders b^2 , near the lower end of the latter. The positions of these rods being entirely beyond the opening of the sash, thus leaving the sash unobstructed while their connection with the beams or girders b^2 at a considerable distance beyond or outside of the vertical portions of these beams or girders b^2 enables them to be brought in such diagonal relation to the beams or girders b' b^2 as to afford great additional stability. The sash thus formed travels along the guides C. In the present instance it is provided with rollers b^9 which are mounted upon studs affixed to the upper portion of the beams or girders b^2 . The beams or girders b^2 are also

provided with sockets b^{10} in which are inserted blocks of wood or like material which bear against the edges of the guides C.

The lower portion of the sash may be steadied by guides C' fastened to the beams or girders a' , and when these guides are used the lower portions of the beams or girders b^2 may be provided with sockets b^{11} fitted with blocks of wood or like material, for impinging against the said guides.

The sash may be reciprocated by means of a pitman E, or otherwise.

The blade D, as here shown, is secured by tension buckles d , to a plate d' , which fits against the outer edges of the beams or girders b^2 .

By my improved construction of sash I increase its rigidity or stiffness, since I obtain through the described connection of vertical beams or girders with the longitudinal edges of horizontal beams or girders, the maximum strength for meeting the strains arising from the resistance offered to the blade and so can have a maximum length of vertical beams or girders with a minimum vertical cross section of the horizontal beams or girders, and thereby I obtain a greater working height with a given aggregate height; and it is desirable to keep the machine as low as possible.

What I claim as my invention, and desire to secure by Letters Patent, is—

A saw gate or sash composed of horizontal or longitudinal beams and vertical or transverse beams secured to the longitudinal edges of the first said beams, the said vertical or transverse beams being provided at the point of attachment with bearing surfaces prolonged horizontally and outwardly beyond their main or vertical portions and their extremities being connected by oblique rods with portions of the horizontal or longitudinal beams which extend horizontally outward beyond their own vertical portions, substantially as specified.

HUGH YOUNG.

Witnesses:

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