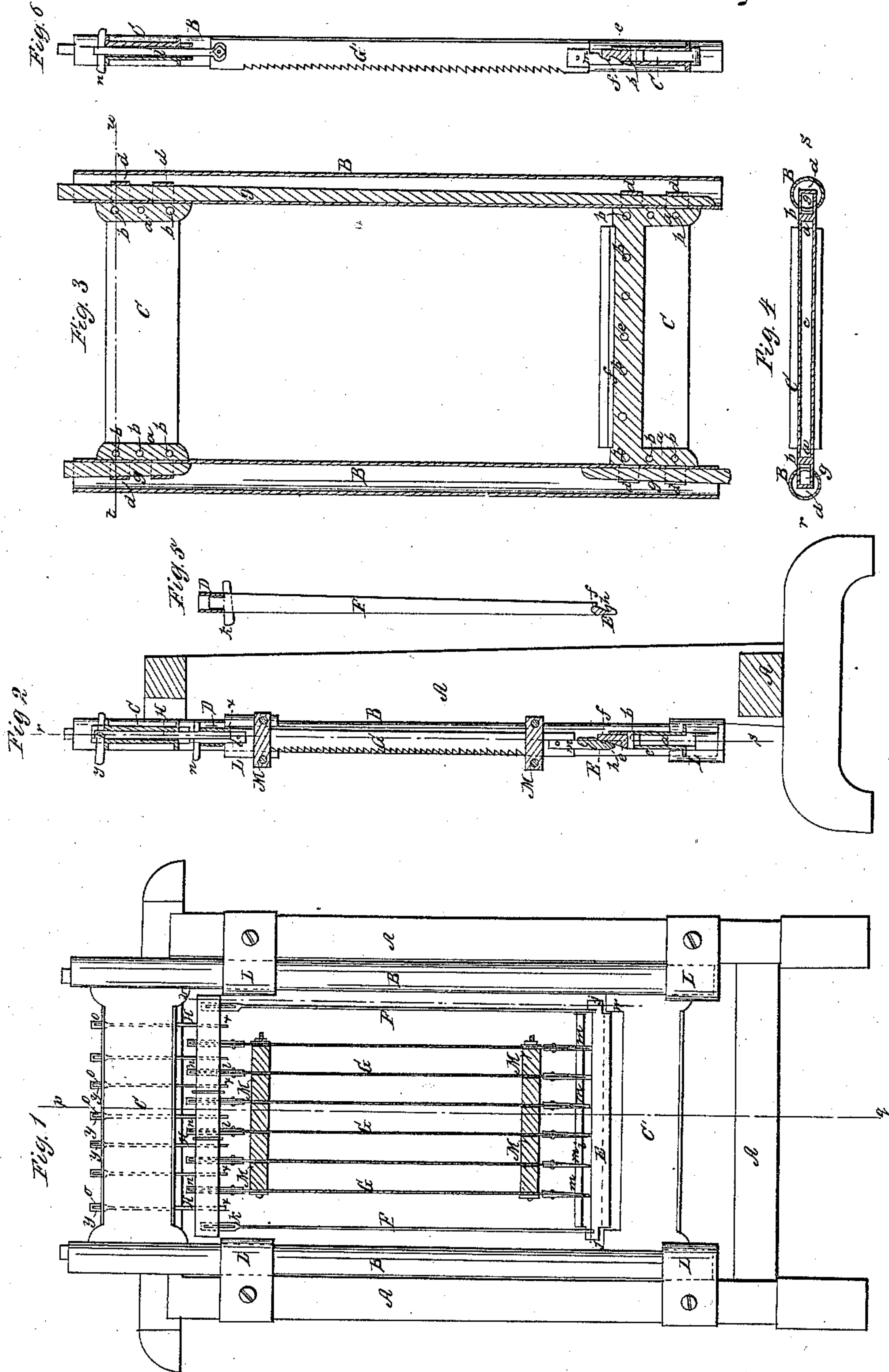


W. C. Bronson,
Reciprocating Saw Mill,

No. 8,852,

Patented Apr. 6, 1852.



UNITED STATES PATENT OFFICE.

WM. C. BRONSON, OF ERWIN, NEW YORK.

SAWMILL.

Specification of Letters Patent No. 8,852, dated April 6, 1852.

To all whom it may concern:

Be it known that I, WM. C. BRONSON, of Erwin, in the county of Steuben and State of New York, have invented certain new and useful Improvements in the Saw-Frames Employed in Sawmills where Gangs of Saws are Used; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a front elevation of part of a saw mill. Fig. 2, is a vertical section of the same in the line *p, q*, shown in Fig. 1. Fig. 3, is a vertical section of the main saw frame through the line *r, s*, shown in Figs. 2, and 4. Fig. 4, is a horizontal section of the same in the line *t, u*, shown in Fig. 3. Fig. 5, is a vertical section in the line *v, w*, shown in Fig. 1. Fig. 6, is a vertical section of the main saw frame in the same direction as Fig. 2, but showing a different arrangement of saws.

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

My invention consists in so constructing a saw gate or frame that it shall subserve not only the purpose of sustaining the tension, arising from the employment of gangs of saws, to which it is peculiarly applicable, but by its lightness and portability obviate the objection to the heavy frames usually employed: the more important object however of my invention and which I would wish particularly to call attention, is by my mode of construction, I make the side stiles, or uprights, of the frame or gate, serve also the important office of guide rods, and thus effect a combination entirely new; by the use of tubular wrought iron for the uprights (although I do not restrict myself to the use of iron alone) I am enabled to permit air freely to circulate when the saw frame is in motion, through the only part of the frame liable to expansion, arising from friction in the slides, 2, which would elongate the stiles or uprights if solid, and disrapture the saws: this tubular form is the only one that also admits of securing the cross pieces or heads to which the saws are attached.

By my invention I am enabled with the temporary use of the resisting bars, placed between the lower hooked plate or bar to which the lower ends of the saws are attached, and the upper open plate receiving

the upper ends of the saws, to properly sustain the strain of all the saws, until the gang is placed in the saw frame or gate, (when the bars must be removed); by this means I am enabled by the use of duplicate gangs of saws, bars, &c., to save considerable time, usually lost by delay in setting and sharpening, as the change of a dull gang for a set may be made in a few minutes.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, A, represent part of the mill framing in which the main saw frame B, B, C C', is hung.

B, B, are the cylindrical wrought iron tubes composed of what is usually termed gas tubing, being of suitable length to form the sides of the saw frame.

C, C', are two cross pieces or heads of equal length formed of wrought iron plate double, but as the two are differently constructed, C, will be first described, its two sides are held at a distance apart by blocks or filling pieces *a, a*, nearly close to the ends, the blocks being secured by rivets *b, b*; and the space between the blocks forming a long slot *c*, (see Fig. 4,) the ends outside the blocks are formed into loop tenons *d, d*, which are fitted into openings of suitable form in the tubes B, B. C', is double, the same as C, but the two sides have their filling pieces united by a piece *e*, extending from one to the other, the said piece *e*, standing above the sides and having a V shaped groove or rabbet cut all along it which forms a hook tongue *f*, extending nearly the whole length of the cross head, it is provided with loop tenons *d, d*, similar to C, fitting into similar openings in the tubes B, B; the filling pieces in each cross head fit close up to the outside of the tubes and the cross heads and tubes are secured together by keys *g, g*, of wood or metal, which fit into the loops of the tenons within the tubes; these keys may be made all in one piece for each tube so as to secure both cross heads to the tube at the same time or in two pieces one for the end of each (both arrangements being shown in Fig. 3) the tenons and keys in either case having a slight taper so as to give a slight amount of draw, to make close joints. The tubular sides of the frame fit in suitable guide boxes L, L, secured to the mill framing A, A.

D, is an open cross plate formed of double

wrought iron plate with an opening between its sides (see Figs. 2, and 5,) but closed at its ends.

E, is a hooked bar plate formed of wrought iron having a V shaped groove along its back side which forms a hook tongue *h*, similar to the hook tongue E, on the lower cross head *c'*, of the main saw frame, but turned in the opposite direction the tongue on each fitting in the rabbet in the other; it has also a similar groove or rabbet along its front side which forms a hook tongue *i*, turned in the same direction as *f*, and has two small lugs *j*, *j*, one on each end, the upper edges of which are V shaped. F, F, are two removable bars notched at their lower ends to fit the V shaped lugs *j*, *j*, and having loops or eyes at their upper ends which fit into the slot or opening between the sides of cross plate D; the eyes being placed transversely to the cross head; keys *k*, *k*, are fitted in the said loops, resting under the cross plate D. The cross-plate D and hooked bar plate E are held together by the saws, but kept at a proper distance apart, and parallel by the bars F, F, which are removed after the gang is secured in the frame or gate.

G, G, are the saws, which have metal straps *l*, *l*, attached to their upper ends, the said straps passing through the opening between the sides of the cross plate D; they have hooks *m*, *m*, attached to their lower ends which hook into the groove or rabbet under the hook-tongue *i*, on the hooked bar plate E, the saws being strained by keys *n*, *n*, passing through the straps *l*, *l*, above the cross plate D; they are held at a suitable distance apart by blocks of wood M, M, placed between them and secured or clamped by bolts passed through the blocks.

H, H, are suspension rods or links which pass through the slot *c*, in the upper cross head *c*, having eyes *o*, *o*, at their upper ends and hooks *x*, *x*, at their lower ends, the hooks catching under one side of the cross plate D, and the eyes projecting above *c*, and having keys *y*, *y*, driven through them for the purpose of securing or tightening up the gang of saws within the main frame, the lower end of it being as before explained connected to the lower cross head of the main saw frame in such a manner as to insure great steadiness and stiffness.

The saws are hung at the required distance apart and set ready for use before being put in the main frame, each saw being separately strained. The gang of saws is put into the main frame with great facility by simply hooking the tongue *h*,

in the rabbet under the hook tongue *f*, on the lower cross head *c'*, and dropping the hooked ends of the suspension links H, H, through the upper cross head *c*, of the main frame and through the cross plate D, under either side of which they may be hooked; the keys *y*, *y*, are then inserted in the eyes of the links and driven in to give all the links a uniform and proper tension; the links may be provided with a double hook to hook under both sides of the cross-head, they must then be inserted from below the cross-plate D. The gang of saws are removed from the main frame by simply drawing the keys *y*, *y*.

I intend employing two or more gangs of saws in every mill for every main saw frame, so as to keep one gang of saws always in readiness to replace a gang which requires taking out and sharpening, and as the merely taking out one and putting in another set of saws occupies a very short space of time, while if the saws are sharpened in the mill or taken out one at a time a long stoppage is necessary, it will be readily understood that the saving of stoppage causes a great increase in the work performed by the mill.

The whole of the saw frame is rendered quite portable, and may be packed for transportation or storage in a very small compass; the main frame being taken apart by drawing the keys *g*, *g*; and gang of saws by drawing the keys *n*, *n*, or *k*, *k*; either being capable of being put together again in a few minutes. It is capable of being put in any reciprocating mill without any preparation as it requires no guides or fender posts to be fixed for it, its own sides forming its guides, the boxes L, L, merely requiring to be secured to the mill framing.

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

1. The construction of a saw frame or gate of metal tubes B B constituting the guides as well as the uprights of said frame, and cross pieces or heads *c c'* united to said upright, in the manner set forth.

2. I also claim the arrangement of the cross hooked bar E and hooks *m m* on the end of the saws in combination with the sustaining side bars F F and upper open plate D, for the purpose and in the manner substantially set forth in the foregoing specification and accompanying drawings.

WM. C. BRONSON.

Witnesses:

O. D. MUNN,
S. H. WALES.