

No. 705,720.

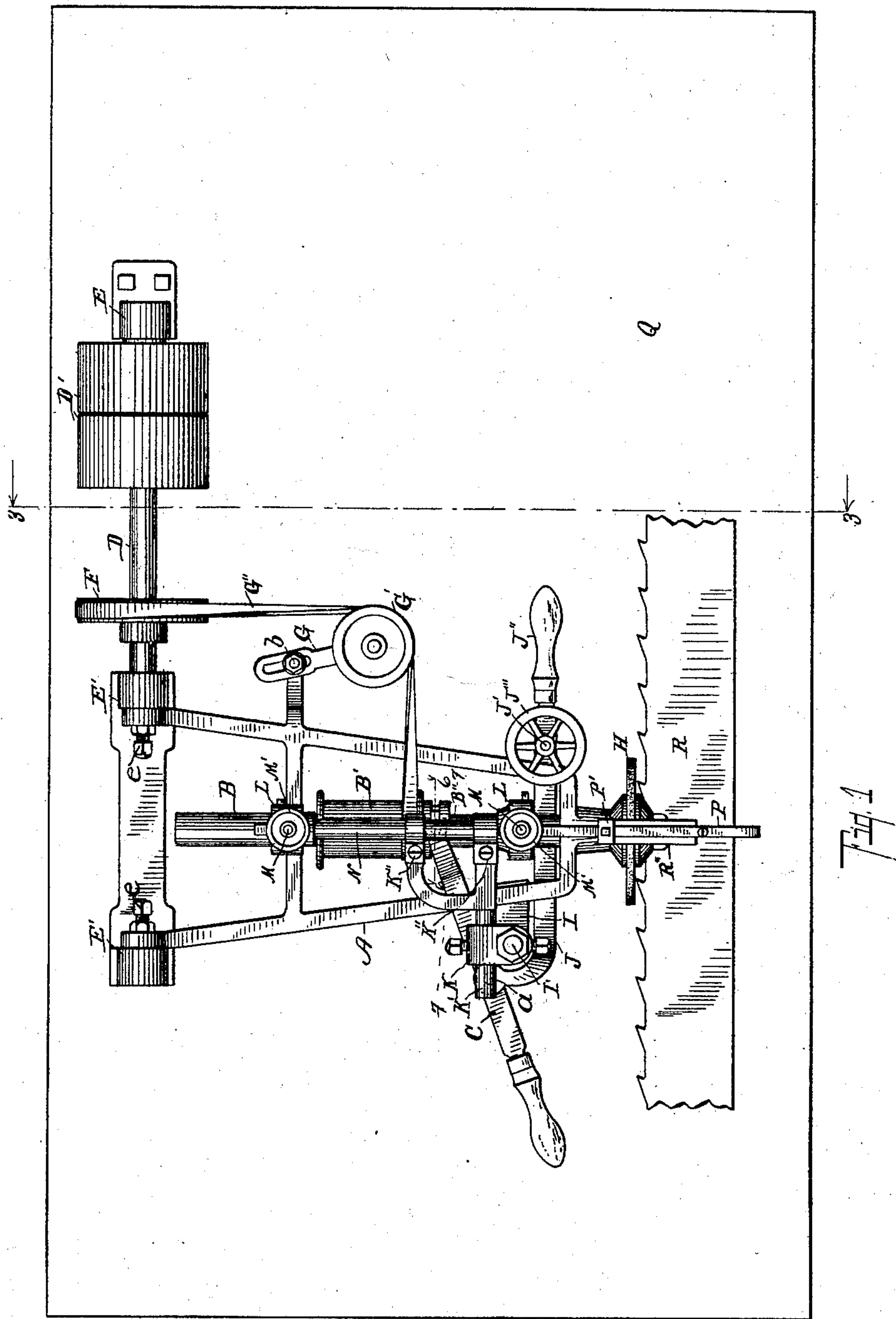
Patented July 29, 1902.

W. TRAVIS.  
MACHINE FOR REPAIRING SAWS.

(Application filed Nov. 8, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

*D. E. Wood*

*Arthur A. Earl*

Inventor,

*William Travis*

By *Fred L. Chappell*  
Att'y.

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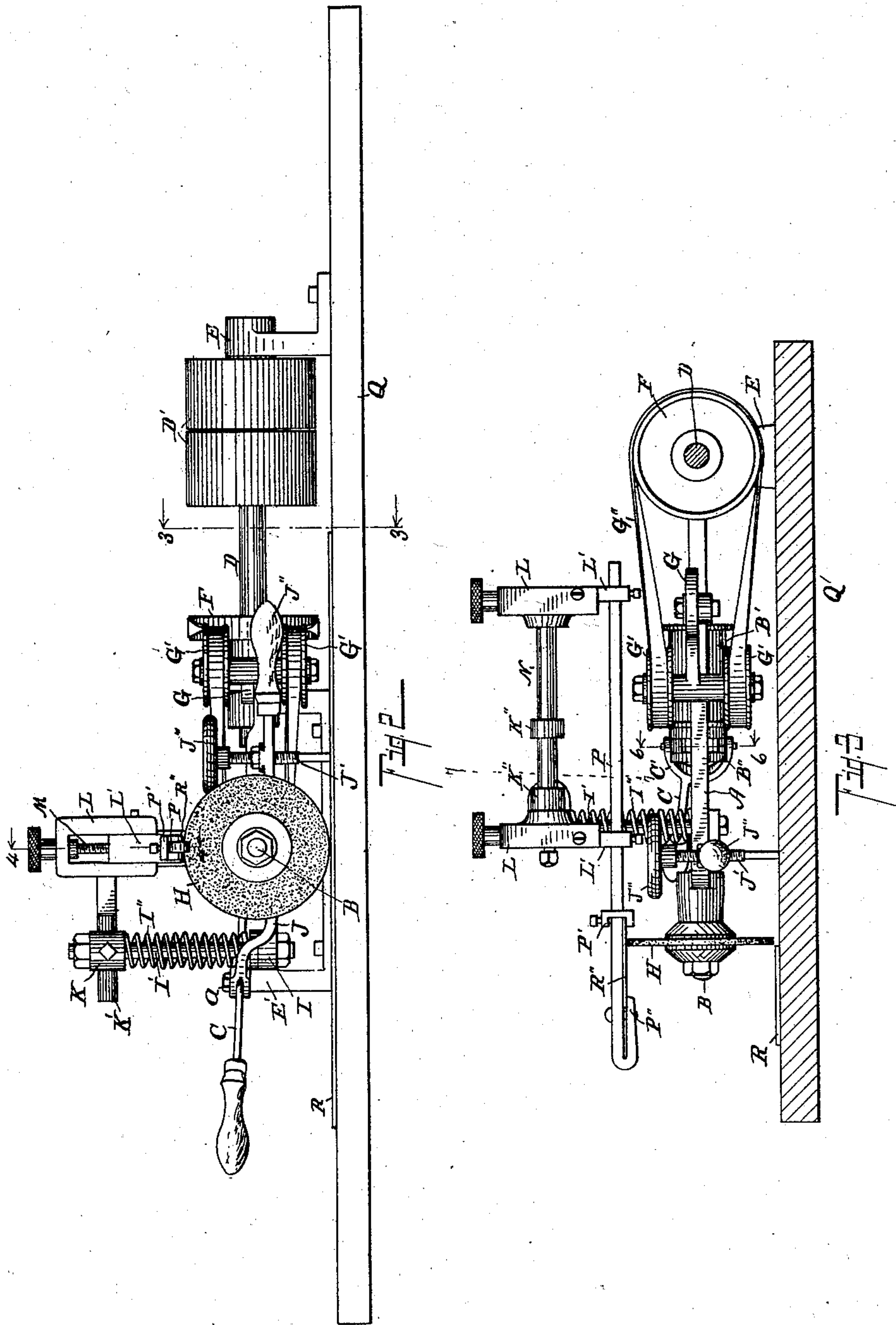
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Witnesses:

*B. E. Wood*  
*Charles Earl*

Inventor,

*William Travis*  
By *Chas. L. Chappell*  
Att y.

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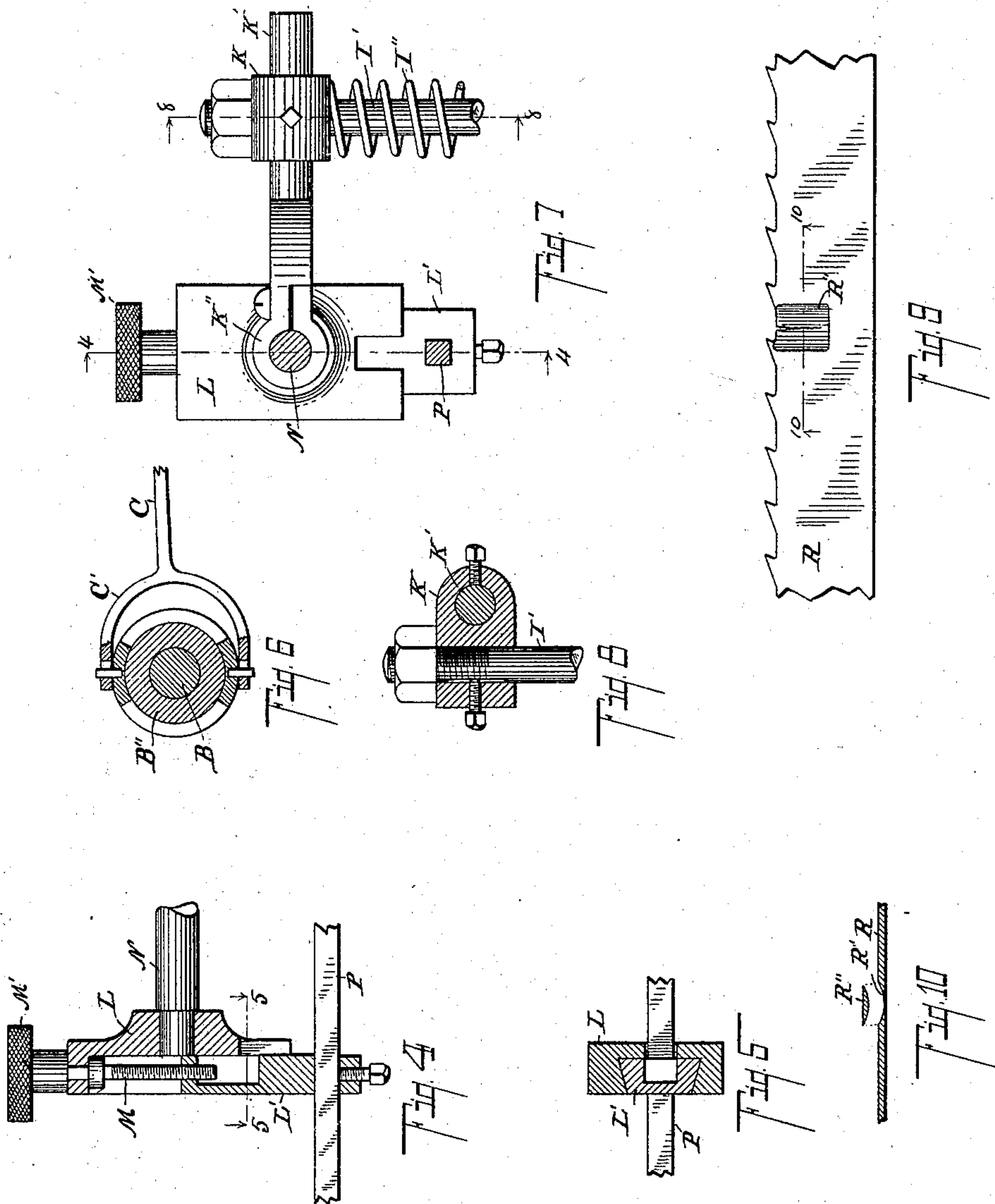
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3 Sheets—Sheet 3.



Witnesses:

*H. Ed Wood*  
*O. L. Earl*

Inventor,

*William Travis*  
By *Fred L. Chappell*  
Att'y.



# UNITED STATES PATENT OFFICE.

WILLIAM TRAVIS, OF LUDINGTON, MICHIGAN, ASSIGNOR OF TWO-THIRDS  
TO ALVAH J. CARSON, OF KALAMAZOO, MICHIGAN.

## MACHINE FOR REPAIRING SAWS.

SPECIFICATION forming part of Letters Patent No. 705,720, dated July 29, 1902.

Application filed November 8, 1901. Serial No. 81,580. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM TRAVIS, a citizen of the United States, residing at the city of Ludington, in the county of Mason and State of Michigan, have invented certain new and useful Improvements in Machines for Repairing Saws, of which the following is a specification.

This invention relates to an improved machine for repairing band-saws and similar articles.

Band-saws in use frequently crack at the edge, and after two or three cracks are formed their usefulness is obviously very much impaired and unless repaired soon become useless. The band-saw in use, as is well known, passes over a wheel and is constantly being bended and strained, which makes it difficult to repair by any ordinary means.

The objects of this invention are to provide an improved means of repairing the cracks or bends by inserting a patch in such a manner that it will not be affected by the bending of the saw and will fit very securely in place and will adhere very securely to the saw and at the same time present at the point of patching the full thickness of the material, whereby the strength of the blade will not be at all impaired.

It is a further object to provide a means for repairing and fitting a patch in a band-saw or similar article in such manner that the same will not need to be heated to such an extent as to in any way affect the temper.

It is also an object of this invention to provide a means for shaping the patch and the seat of the same so that the one will exactly coincide with the other.

Further objects will definitely appear in the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A structure fully embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail plan view of a structure embodying the features of my invention, a portion of a saw-blade being shown in posi-

tion to be operated upon. Fig. 2 is a detail elevation of the same. Fig. 3 is a transverse sectional elevation taken on a line corresponding to line 3 3 of Figs. 1 and 2. Fig. 4 is a detail vertical sectional view taken on line 4 4 of Figs. 2 and 7. Fig. 5 is a detail sectional view on line 5 5 of Fig. 4. Fig. 6 is an enlarged detail sectional view on line 6 6 of Figs. 1 and 3. Fig. 7 is an enlarged detail sectional view on line 7 7 of Figs. 1 and 3. Fig. 8 is a detail sectional view on line 8 8 of Fig. 7. Fig. 9 is a detail plan view of the saw-blade in which the seat has been properly formed. Fig. 10 is a sectional view on line 10 10 of Fig. 9, the patch being shown a little separated from the blade, but showing the manner in which the same fits within the seat.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the frame, which carries the grinding mechanism for forming the seat for the patch and for shaping the patch. This is preferably supported on suitable trunnions *e e* in bearings or brackets *E' E*, which are supported on the base-plate or table Q. This frame is secure in this manner so that it may be properly adjusted to the work to be performed and also for the further purpose that it may be swung up out of the way when not in use. The shaft D is supported in suitable bearings and is driven by tight and loose pulleys *D'* thereon. The driving-shaft is in line with the trunnions *e e*, which support the main frame A. A shaft B extends out from the main frame and carries on its outer end an emery or other grinding wheel. An elongated pulley *B'* is on the shaft B, and this receives the driving-belt *G''*, which passes around the guide-pulley *G'*, which changes the direction of the same to the band-wheel F on the shaft D. The guide-pulley *G'* is on an adjustable bracket G, which is made adjustable by being suitably slotted and receiving through the slot a set-bolt *b*. The shaft B is in the plane of the trunnions which support the frame A. Consequently the frame can be raised or low-



ered without changing the tension on the belt G". A lever C is pivoted by the bolt  $\alpha$  to an arm J, extending out from the frame, and has forks C' at its inner end, the forks being slot-  
 5 ted to engage pins on a collar B'', which is secured to the shaft B, whereby by the manipulation of this lever the shaft B is moved back and forth lengthwise in its bearings, thereby moving the grinding-wheel H back  
 10 and forth in the direction of its axis. The handle J'' is secured to the arm J (see right of Fig. 1) and has means for controlling the elevation of the grinding-wheel. On the screw J', which is provided with hand-wheel  
 15 J'' and which is adapted to rest against the top of the table Q, is a stop by the adjustment of which the position to which grinding-wheel H can descend is controlled by controlling the height of the frame.

20 The saw-blade is placed on the table with the crack in line with the grinding-wheel. The frame is lowered to the proper position, and by the manipulation of the lever C after the grinder is set in motion a curved seat is ground  
 25 in the saw-blade opposite the crack, as clearly appears in Figs. 9 and 10, and this is to receive the patch of exactly corresponding shape, as seen in Fig. 10, which is then brazed in position. The patch is also formed by this machine, a  
 30 rock-shaft N being provided above the main shaft B and in suitable vertically-adjusted supports. The rock-shaft N is supported by an arm K', extending from the bracket K, which is adjustable up and down on the rod or bolt  
 35 I', which is supported by a suitable lug I on the main frame of the machine. A spring I'' holds the bracket K normally upward. The shaft N is adapted to slide back and forth in its bearings K'' K''. On each end of the shaft  
 40 is a bracket L, provided with a vertically-adjustable slide L', which is adjustable up and down by means of a hand-wheel M', which is mounted in a suitable bearing and has a screw M, which engages said slide L' and ad-  
 45 justs it up and down. A bar P is supported in the lower end of the slides, being retained adjustably in position by suitable set-screws. This bar P is downwardly and rearwardly  
 50 curved at its front end, the same being adapted to be clamped by a suitable screw therefor. A sliding clamp P' is on the bar P and adapted to be adjusted back and forth on the same. These clamps are to hold a strip of steel  
 55 R'', which is preferably a strip of saw-blade. It will be seen that this bar P projects out over the grinding-wheel H and by rocking the bar P, which is possible owing to the shaft N being supported in bearings K'' K'', it will be seen that the under surfaces of the  
 60 strip of steel R'' will be ground off in the arc of a cylinder, and by adjusting the slides L' up and down the same can be made of any thickness and of any size desired and the arc of the circle can be of any diameter de-  
 65 sired, and can thus be made to exactly correspond to the circular seat formed in the saw-blade R by reciprocating the grinding-

wheel in the direction of its axis over the same. The markings of the grinding-wheel  
 70 will be in the direction of the length of the saw in each instance, and consequently there will be no cross-marks on either of the parts to weaken the same. The brazing or shouldering which is used for attaching the patch  
 75 will have a good surface, and the patch will be retained securely in position. By putting the patch on the inside of the saw it will hold the parts in a satisfactory manner, and the passing of the saw over the wheel will  
 80 not tend to loosen the same.

I have described my invention in its preferred form; but I desire to remark that the same can be greatly varied in its details without departing from my invention.

The machine might be made use of to form  
 85 seats for the patches in the side of the blade, and the patches can be formed by other means; but it is obvious that by combining the whole structure the patch and the seat  
 90 for the patch can be made at the same time by the same operator and the single reciprocation of the grinding-wheel will form the patch and also the seat for the patch at the same time. I also desire to remark in this  
 95 connection that it is not essential that the shaft N be adapted to slide through the bearings K'' K'', though this is of advantage, as it enables the operator to bring the patch exactly to the desired position over the grind-  
 100 ing-wheel H, so that the particular part of the strip of steel R for the patch which it is desired to shape will be acted upon by the wheel while it is being reciprocated to cut the seat for the patch by the saw be-  
 105 neath. Of course this patch can be formed separately from the operation of cutting the seat for it in the saw; but it will obviously take twice as long to do the work in that way, and by the particular arrangement I have  
 110 adopted it is possible to shape the patch and form the seat by the same grinding-wheel at the same operation.

Having thus described my invention, what I claim as new, and desire to secure by Letters  
 115 Patent, is—

1. In a machine of the class described, the combination of a table Q; a driving-shaft D supported in suitable bearings thereon; a frame A supported on trunnions in line with the said shaft D; a shaft B at right angles to  
 120 the said trunnions and supported in suitable bearings on the frame A and adapted to reciprocate in said bearings; an elongated pulley B' on the said shaft; a driving-belt G'' from the driving-pulley F on the driving-  
 125 shaft to said pulley B'; a shipper-lever connected to said shaft by a suitable collar B'' to reciprocate the same; an adjustable screw-top J' in the frame A for regulating the height of the frame; a rock-shaft N' supported in  
 130 suitable bearings above the shaft B; brackets on the shaft with adjustable slides therein; a bar P carried by the said adjustable slides and extending forwardly and provided with



a clamp to retain a strip of steel to form a patch for a saw, coacting for the purpose specified.

2. In a machine of the class described, the  
5 combination of a table Q; a driving-shaft D supported in suitable bearings thereon; a frame A supported on trunnions in line with the said shaft D; a shaft B at right angles to the said trunnions and supported in suitable  
10 bearings on the frame A and adapted to reciprocate in said bearings; an elongated pulley B' on the said shaft; a driving-bolt G' from the driving-pulley F on the driving-shaft to said pulley B'; a shipper-lever con-  
15 nected to said shaft by a suitable collar B'' to reciprocate the same; an adjustable screw-stop J' in the frame A for regulating the height of the frame, coacting for the purpose specified.

20 3. In a saw-repairing machine, the combination of a suitable frame with trunnions for supporting it; a shaft at right angles to the

said trunnions adapted to reciprocate back and forth in its bearings; a grinding-wheel on the end of said shaft and means for con- 25 trolling the elevation of the same whereby a curved seat can be cut in the side of the saw, as specified.

4. In a saw-repairing device, the combination with the grinding-wheel; a frame sup- 30 ported on a rock-shaft in line with the shaft of said grinding-wheel; a clamp for supporting a strip of steel on said frame whereby the same can be swung back and forth and be ground in the arc of the circle in said grind- 35 ing-wheel, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

WILLIAM TRAVIS. [L. S.]

Witnesses:

ALEX PELLETIER,  
EMMET PELLETIER.