June 29, 1926. 1,590,183

L. L. CRANE

GUARD FOR SAWING MACHINES AND PLANERS

Filed Jan. 20, 1925 3 Sheets-Sheet 1

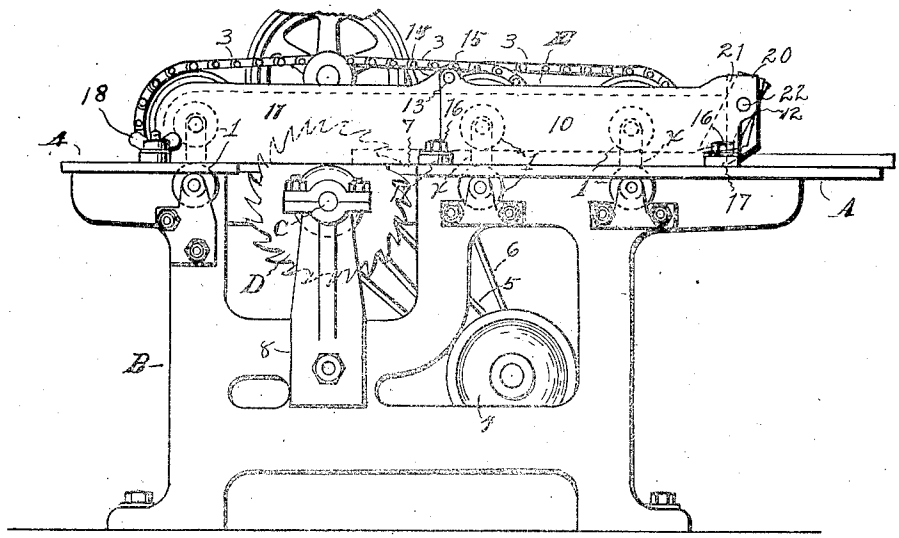


Fig. 1

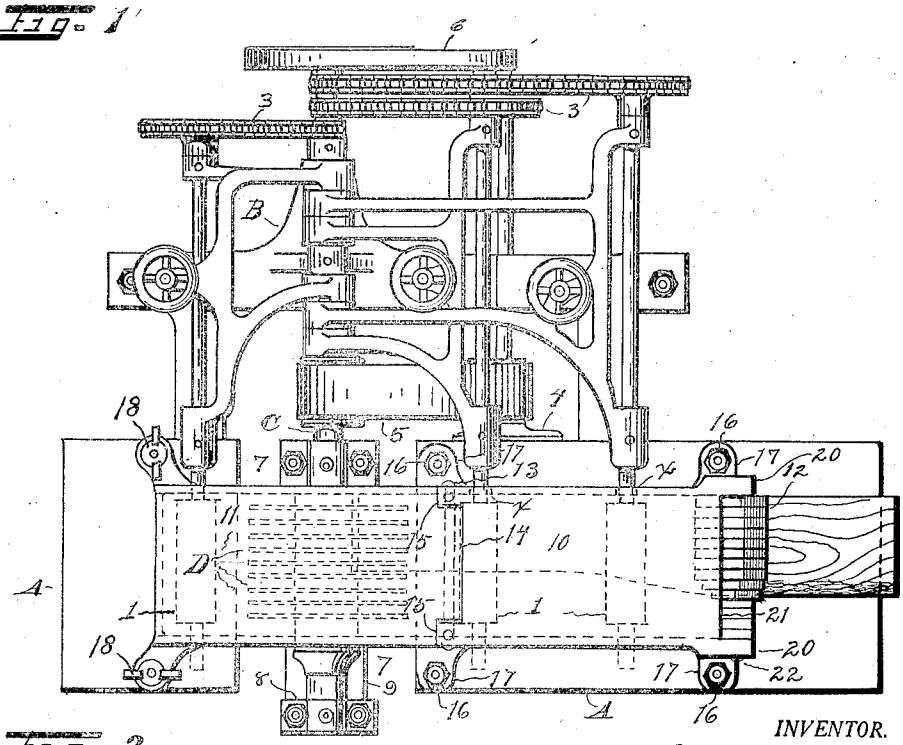


Fig. 2

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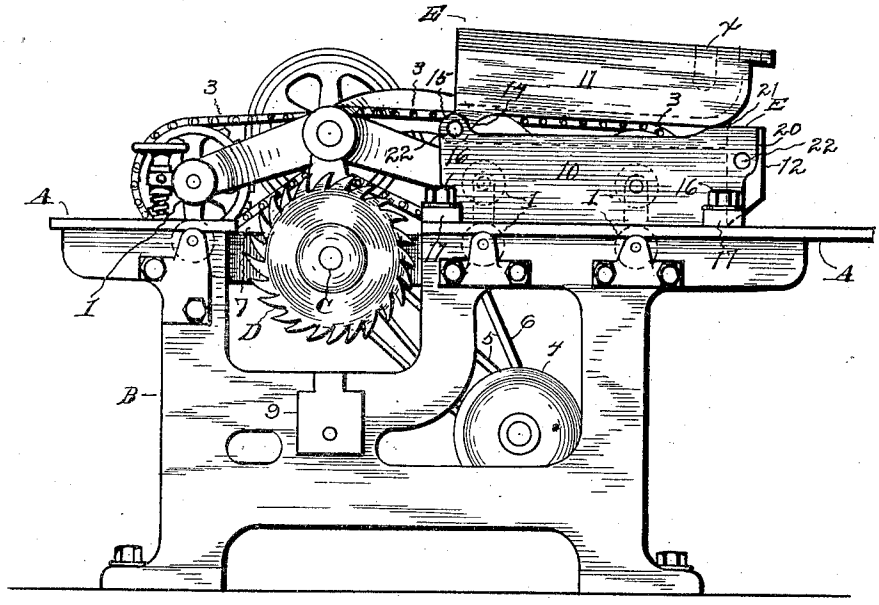


Fig. 3

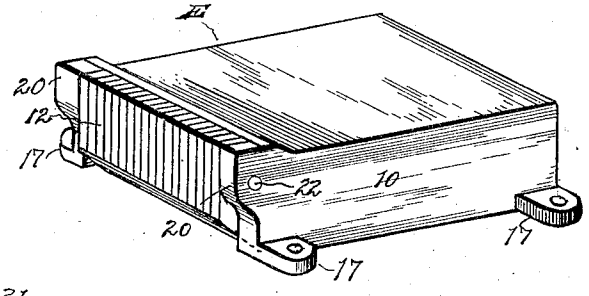


Fig. 4

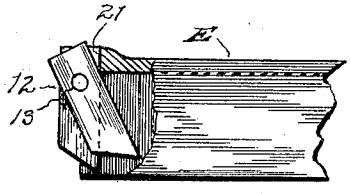


Fig. 5

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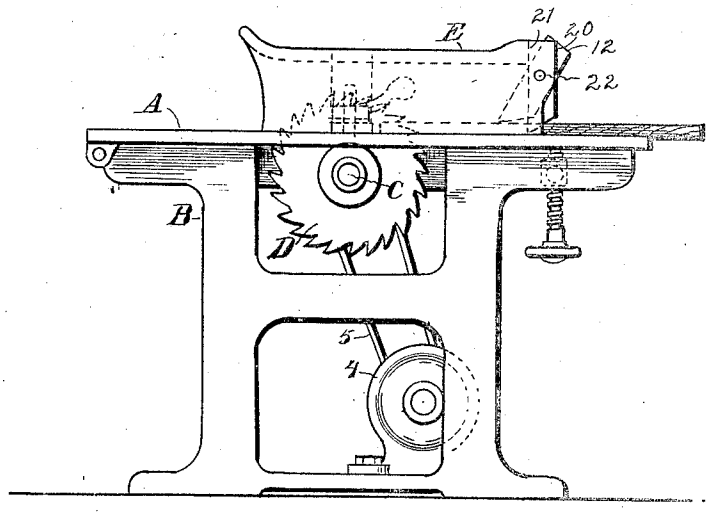


Fig. 6

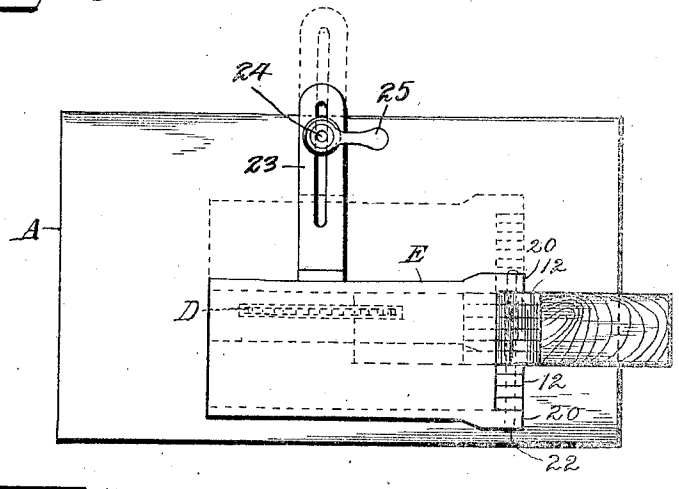


Fig. 7

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UNITED STATES PATENT OFFICE.

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GUARD FOR SAWING MACHINES AND PLANERS.

Application filed January 20, 1925. Serial No. 3,603.

My invention relates to guards for machines in which rapidly rotating saws or planer heads are used, and it is especially adapted to safeguarding the operator in the use of a machine of this character.

The invention also contemplates forming a guard so that it may be adjusted sidewise when used in connection with single saws to saw lumber of varying widths.

The present invention contemplates a portable housing adapted to completely cover a saw or gang of saws and so constructed that a loosened knot, splinter, or fragment of material, cannot be ejected from the housing either from contact with the saw or from the binding of the saw with the material, and cause trouble of any nature, such as, for instance, the breaking of windows, lighting fixtures, etc., in line with the saw, or injure the operator.

The invention further contemplates a hinged hood operative with and forming a part of the guard, and so constructed that it may be released and permit a saw or gang of saws to be removed or placed upon the arbor without inconvenience.

It further contemplates a means for safeguarding the throat or entrance immediately forward of the rotating blades of a planer, so that fragments or pieces of material entering through my improved guard cannot react and create trouble for the operator, as is of common occurrence where adequate provision is not made for the safeguarding of the person attending the machine.

My invention further contemplates a means thoroughly efficient for the safeguarding of the machine to which the guard is attached, for insuring absolute safety for the operator whether he be in front, at the rear, or at the side of the machine, and whereby if a saw breaks, or material in passing through the guard becomes splintered or broken, the parts will not escape the guard to the injury of the attendant or the shop fixtures.

Laws are becoming more and more exacting in their provisions for safeguarding the public, not alone as to sanitary and other conditions, but also in the application of various devices to apparatus for insuring the utmost physical safety to operators in the shops of our country, and to this end the present invention is especially constructed.

In the drawings forming a part of this specification, Figure 1 is a side view of a gang saw with my invention attached.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is a side view of a gang saw with the outer bearing of the saw arbor removed, and shows my invention with its hood section swung back in position for placing or removing the saws.

Fig. 4 is a perspective view in modification of the guard as provided for planers.

Fig. 5 is a broken, detail side view of the guard and shows the pivotal guard fingers at the entrance to the housing.

Fig. 6 is a side view of an ordinary sawing machine with my guard in modification covering the saw, and Fig. 7 is a plan view of Fig. 6 showing a side adjusting means by which lumber may be sawed into various widths.

Like marks of reference refer to corresponding or equivalent parts in the views, in which the table A, its frame B, arbor C, saws D, feed rollers 1, their sprocket wheels, the drive chains 3, motor 4 and its driving belts 5 and 6, constitute the gang sawing machine to which my guard E is attached.

As shown in Figs. 1 and 2, the saw is of a gang type, wherein the saws D operate through a cut-out or opening 7 in the table, and rotate on an arbor C mounted at its outer end in a detachable bracket 8 fitted to a suitable bearing 9 on the frame B.

The guard for saw purposes comprises a jointed housing 10 and 11 and a series of hinged finger guards 12 suspended over the front entrance to the housing. The housing is designed to completely cover the saws D in such manner that in the event of a tooth breaking from a saw, or the saw itself breaking, a knot, splinter or part of timber becoming loose and being hurled from the saw in any direction will not escape the housing to create trouble or injure the attendant. As shown, the housing is jointed immediately forward of the saws and is provided with a pintle 13 passing through appropriate lugs 14 and 15 of the parts.

At places where the upper feed-roller shafts are positioned, the left hand side of the housing (as herein shown) is provided with slots x which permit the housing to set over said shafts and seat on the saw table.

The forward portion 10 of the housing is made fast to the saw table by means of cap

screws 16 passing through offset lugs 17 into the saw table, and the rear portion 11 and that part covering the saw or saws is detachably secured at its rear end by means of wing nuts 18, or equivalent means, operable on suitable studs extending from the saw table.

As shown in Fig. 3, when it is necessary to get at the saws, either for touching them up with a file, or for removing or replacing them, the wing nuts are released and permit the hinged part 11 to be swung back and onto the housing part 10, said housing part 10 when seated on the saw table forming an oblong rectangular trunk having a part of its forward end sides 20 projecting somewhat beyond its top to form a transversely-disposed shoulder or stop 21, against which the finger guards 12 abut when in a vertical or normal position.

The fingers 12 are thin flat pieces of metal beveled to a point from the rear of their lower ends and are perforated through their flattened portions near their upper ends and suspended side by side on a pintle or hinge 22. The pintle is supported at its ends by the offset extensions 20 of the housing sides. Preferably the pintle 22 is placed so that its upper surface will be in alignment with the upper surface of the housing, and spaced from the shoulder 21 in such manner that a finger 12 will abut said shoulder when in a normal position, yet permit said finger to tilt or swing inwardly and safeguard the space in which the finger is operated. As shown, the fingers are positioned 90° to a plane of the saw table and also to the top wall of the housing, and they prevent any material thrust beneath them from being ejected from the housing. The position of the fingers and the inclination of their lower ends readily permits a board to enter the housing, and at the same time they form stops which prevent any back thrust of the board from the saw. The inclination of the fingers at their rear bottom extremities and their pivotal support between the housing sides, readily permits a board or other piece of timber of varying widths and thickness to pass below their points and at the same time they keep the mouth of the housing closed. As some of the fingers raise, others will lower, with the varying dimensions of the material passing into the housing.

Experience has proven that with my improved sawguard, fragments of the wood coming into contact with the saws are broken up within the housing and ejected through the throat opening through which the saws rotate (except such pieces as are thrown against the fingers and do not rebound into said opening), and are delivered together with the sawdust beneath the machine into appropriate chute boxes, etc.

In Figs. 6 and 7, the guard E is provided with a longitudinally-slotted arm 23 parallel with the saw arbor and through which a stud 24 extends from the saw table and carries a hand nut 25, by means of which the guard may be shifted sidewise for sawing lumber in various widths.

In Fig. 4 the housing shown is constructed for attachment to planer beds. When attached to planers the rear opening of the housing is placed in close proximity to or against the overhung throat opening or guard forward of the planer head, and is secured to the planer bed with cap screws or other appropriate fastenings.

From the foregoing description and explanation of the construction and operation of my improved saw and planer guard, its objects, advantages and general utility, will, it is believed, be readily apparent to those familiar with the work to which the invention appertains.

Having set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a saw table and a saw operative through said table, of a guard comprising a sectional housing detachably fitted to said table and adapted to direct lumber in a path to said saw, one section of said housing being attached to said saw table immediately forward of said saw, the other section adapted to abut said first section and to cover said saw, said sections being hinged at their abutting ends in such manner that the section covering said saw will swing up and lie on said first section, said first section having a mouth opening, a pivotal support suspended across said mouth opening between the sides of said housing, pivotal guards suspended side by side on said support and adapted to engage said table, a stop formed by the end top of said housing adapted to engage the upper inner ends of said finger guards and prevent said fingers from swinging backward on their pivotal support, and to permit said fingers to swing inwardly when a board or other material is thrust into said mouth opening, substantially as, and for the purpose set forth.

2. The combination with a saw table and a saw operative through said table, of a saw guard comprising a housing detachably fitted to said table, said housing comprising two section abutting end to end in alignment and adapted to direct lumber in a path to said saw, the forward of said sections being located in advance of said saw and having a mouth-opening with depending finger guards adapted to permit lumber to enter said housing and retain splinters or other debris hurled from said saw toward said finger guards, the opposite end of said forward section having hinge lugs, a rear sec-

tion of said housing abutting said forward section having hinge lugs, a pintle connecting the hinge lugs of the two sections, said rear section having a rearwardly inclined end with a narrow transversely-disposed exit formed between its sides and said table, lugs extending from the sides of both said sections, cap screws fitted through the lugs of said forward section and into said table, and studs having wing nuts fitted through said rear section arranged substantially as and for the purpose set forth.

LEON L. CRANE.