March 15, 1955 G. BROWN 2,704,093

GUILLOTINES ADAPTED FOR USE IN SPLITTING SHAKES

Filed Jan. 20, 1954

Fig. 1.

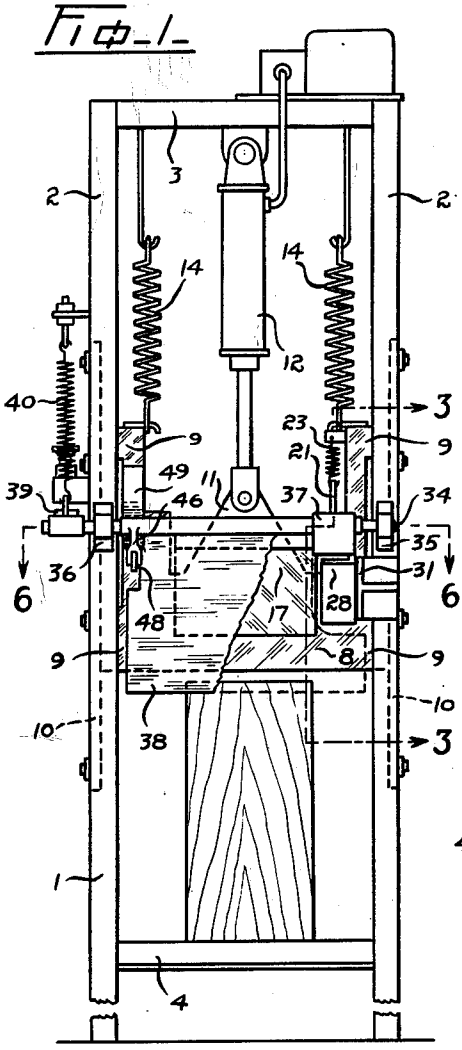



Fig. 2.

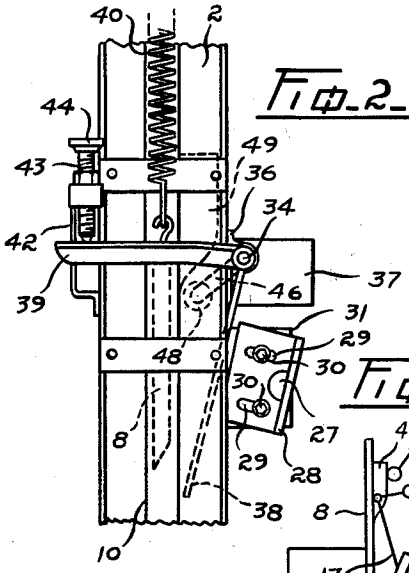



Fig. 5.

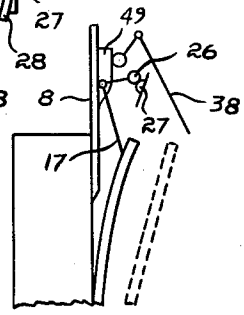



Fig. 4.

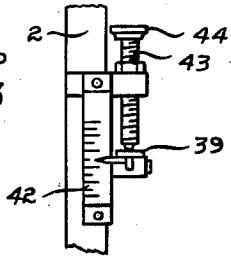



Fig. 3.

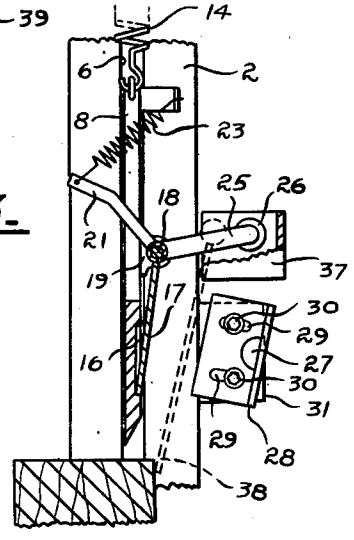
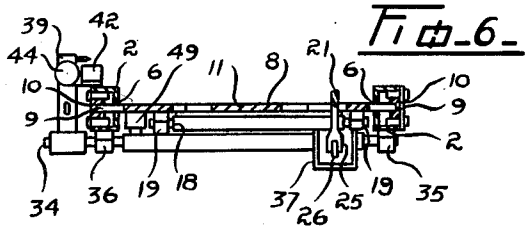



Fig. 6.




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2,704,093

# GUILLOTINES ADAPTED FOR USE IN SPLITTING SHAKES

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Application January 20, 1954, Serial No. 405,198

2 Claims. (Cl. 144—193)

My invention relates to improvements in guillotines adapted for use in splitting shakes from blocks.

The object of the present device is to provide means whereby the knife or frow used is not required to travel deeply into the end grain of the block in order to clearly split a shake blank therefrom, and to provide means for exerting a splitting force to the blank which will cause the split to travel rapidly in advance of the knife whereby only a short length of the vertical surface of the block and the blank shall be smoothed by the cutting edge of the knife, thereby leaving the face of the shake blank naturally fluted or corrugated transversely of the grain as it is popularly termed in the trade. A further object is to provide a resilient gauge against which the block may be thrust to insure that each shake blank may be split to a standard thickness at its upper end, and to provide means for removing the gauge from the work as soon as the blank is severed from the block, to allow it to be carried to discharge or for conveyance to other processing machines. Other objects will appear as the specification proceeds.

Referring to the accompanying drawings:

Figure 1 is a rear elevation of the device showing a block carried on the bed and engaging the thickness gauge with the guillotine knife at the top of its stroke.

Figure 2 is an enlarged side elevational view showing the operating movement of the thickness gauge.

Figure 3 is an enlarged sectional view taken on the line 3—3 of Figure 1, showing the operation of the flipper plate.

Figure 4 is an elevational view of the thickness gauge scale and its setting mechanism.

Figure 5 is a diagrammatic view showing the movements of the flipper plate and the gauge plate during the downward stroke of the knife.

Figure 6 is a sectional plan view taken on the line 6—6 of Figure 1.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral **1** indicates a frame having vertical legs **2** of channel section which are connected at their upper ends by a head **3** and which support between them an anvil or bed **4**.

The legs **2** are provided on their inner sides with a slot **6**, see Figure 6, in which a guillotine knife **8** is slidably mounted. The knife **8** is provided with extended vertical side pieces **9**, both of which extend through the slots **6** and are received in guides **10** supported in the legs **2**. An inverted V-shaped member **11** is formed integrally with the knife and to this a hydraulic ram **12** is connected to reciprocate the knife **8**. The knife travel is relatively short, preferably about one-third of the maximum length of block split upon the bed **4** and a pair of heavy tension springs **14** are provided to expedite its return or upward movement.

The knife blade **8** is bevelled as shown in Figures 2, 3 and 5 to provide a cutting and splitting edge and on its rear side, see Figure 3, and a rectangular recess **16** is formed to receive the lower end of a flipper plate **17**. The flipper plate **17** is rectangular in form and is carried by a horizontal shaft **18** which is mounted in bearings **19** carried on the back of the knife. The shaft **18** is provided at one end with a light arm **21** which extends diagonally across one of the side pieces **9** of the knife and is connected at its free end by a tension spring **23** anchored to the adjacent side piece **9** of the knife. An operating crank **25** is connected to the shaft **18** to move



the flipper plate outwardly to split and separate a shake blank from the block as it reaches the end of its downward stroke. This crank is fitted at its free end with a roller **26** which projects rearwardly of the frame **1** at all points of its operation. The crank roller is adapted to engage, during the downward movement of the knife, a substantially half round protuberance **27** mounted upon an angle member **28** to swing out the flipper plate **17** smartly as the knife **8** approaches the end of its stroke. The angle member **28** is slotted as at **29** and is adjustably secured by bolts **30** to a member **31** projecting from an adjacent leg **2**. If the wood being used splits easily, then the angle member is adjusted closer to the frame **1**, so that the shakes will split off early in the downward knife stroke and the knife may be returned at shorter intervals and greater output obtained.

Extending transversely across the frame **1** is a horizontal shaft **34** which is carried in bearings **35** and **36**, adjacent the bearing **35** a U-shaped piece of metal is inserted to form a crank member **37** in the shaft. This crank member is in the path of the operating crank **25** and is provided so that the operating crank **25** may pass freely across the axis of the shaft **34** and through said crank member as the knife **8** is reciprocated, see Figure 3. Secured to and depending from the shaft **34** is a gauge plate **38** which normally lies across the path of a block upon the bed **4**. The shaft **34** is fitted with a lever **39** which normally, or when the machine is at rest, with the knife elevated to admit a block therebeneath, is in a horizontal position and extends across the leg **2** as in Figure 2. The lever **39** is resiliently tensioned by a strong spring **40** to hold the gauge plate in adjusted position to gauge the thickness of shake blank it is intended to cut from the block.

Mounted upon the adjacent leg **2** is a graduated scale **42** and mounted thereby is a gauge screw **43** having a knurled head **44**. When the thickness of shake blanks which are desired to be cut is determined, the screw **43** is turned to rock the lever **39** and move it to the desired thickness indicated on the graduated scale, so that the gauge plate will be resiliently held the predetermined distance away from the cutting edge of the knife.

A lever **46** extends radially from the shaft **34**, which lever is fitted at its outer end with a roller **48**. The roller is adapted to be engaged by a cam track **49** shown in dotted line in Figure 2 and carried on the rear face of the knife adjacent the bearing **36**, so that as the knife is forced downwardly by the ram **12** and substantially simultaneously with the splitting of a shake blank from a block, the gauge plate **35** will be swung rearwardly as shown in the diagram of Figure 5, to allow the cut and split off shake blank to fall to discharge.

What I claim as my invention is:

1. A guillotine for splitting shakes comprising a vertical frame having a block support, a knife slidably mounted in the frame to engage a block on the support, means for imparting a downward thrust to the knife, a flipper plate hingedly mounted in bearings carried by the knife adapted to enter the gap formed by the descending knife in cutting the block, said flipper plate having its free edge normally in contact throughout its length with the face of the knife, cam means carried by the frame, and means connected with the flipper plate adapted to engage the cam means to swing the flipper plate rearwardly from the knife and split the block in advance of the knife cut.

2. A guillotine for splitting shakes comprising a vertical frame having a block support, a knife slidably mounted in the frame to engage a block on the support, means for imparting a downward thrust to the knife, a flipper plate hingedly mounted in bearings carried by the knife adapted to enter the gap formed by the descending knife in cutting the block, and means for swinging said flipper plate rearwardly away from the knife and splitting the block in advance of the knife cut, a gauge plate hingedly mounted transversely of the frame, said plate having its free edge projecting normally downwardly below the height of a block to be split and parallel to the knife, means for setting the free edge of said plate to a desired distance from the knife, and cam means mounted on the knife for swinging the gauge

plate upwardly and away from said knife and from a shake split from the block.

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