June 18, 1940. R. H. STAHL 2,205,313

MACHINE FOR CUTTING BRICK OR THE LIKE

Filed June 5, 1939

FIG. 1.

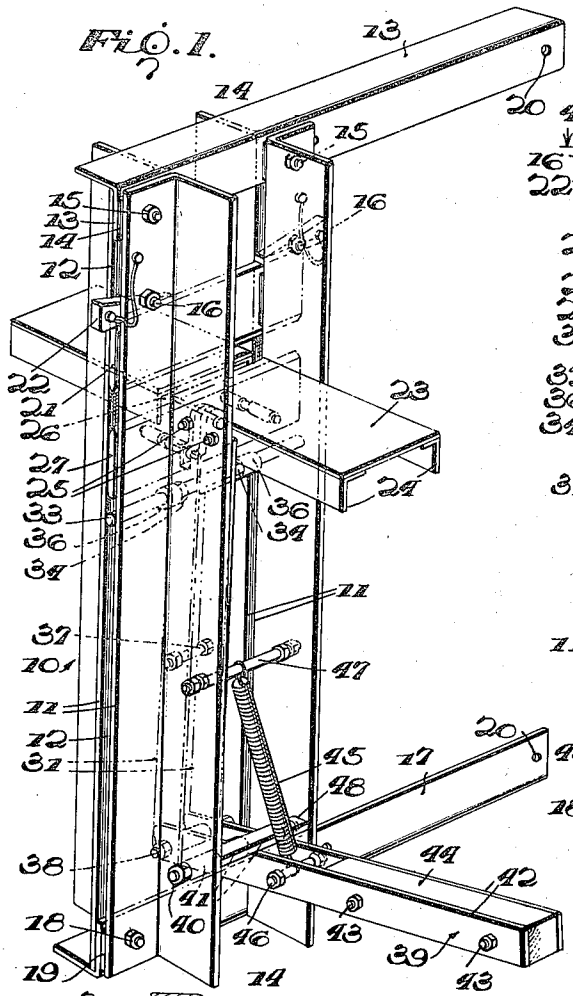


FIG. 2.

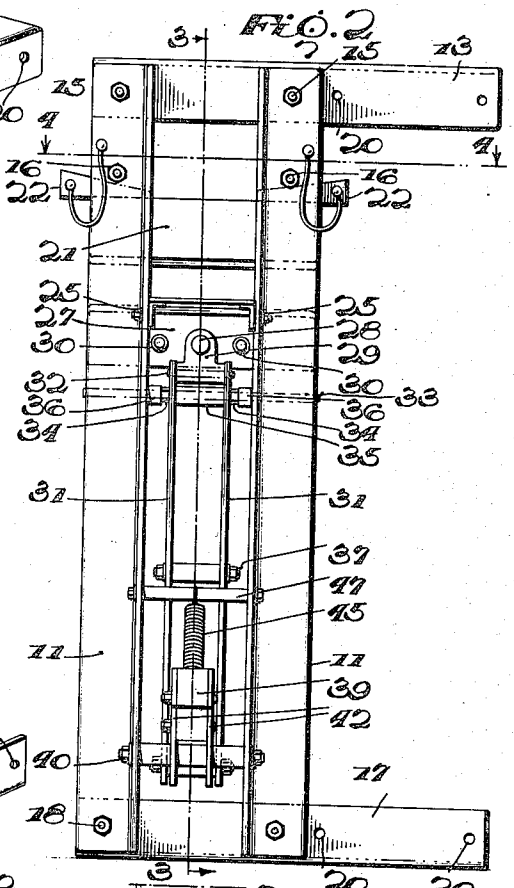


FIG. 3.

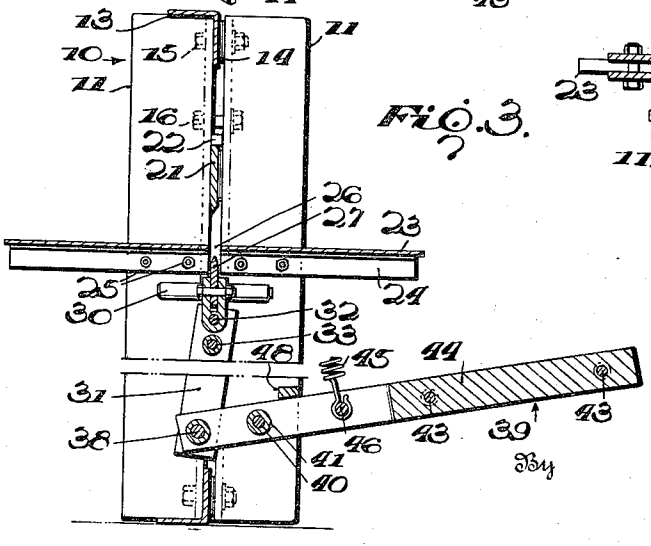
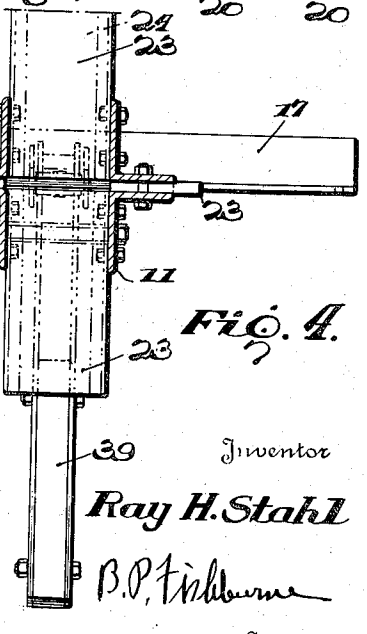


FIG. 4.



Inventor

Ray H. Stahl

By B. P. Fishburne

Attorney

Patented June 18, 1940 2,205,313

UNITED STATES PATENT OFFICE

2,205,313

MACHINE FOR CUTTING BRICK OR THE LIKE

Ray H. Stahl, Springfield, Ohio

Application June 5, 1939, Serial No. 277,543

4 Claims. (Cl. 125—23)

My invention relates to a machine for cutting bricks or the like.

An important object of the invention is to provide a machine of the above mentioned character which is powerful and quick in operation for cutting bricks or the like.

A further object of the invention is to provide a machine of the above mentioned character having means for supporting the brick in the desired position, without the use of the hands, prior to cutting.

A further object of the invention is to provide a machine of the above mentioned character which will cut brick at a right angle to its longitudinal axis or at an inclined angle with relation thereto.

A further object of the invention is to provide a machine of the above mentioned character having an upwardly movable cutter actuated by a treddle.

A further object of the invention is to provide means for mounting one of the opposed blades so that it automatically adjusts itself with respect to the surface of the brick which it is to strike.

A further object of the invention is to provide a machine of the above mentioned character having a framework which is simple, strong, and can be readily attached to a stationary support.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view of a brick cutting machine embodying my invention,

Figure 2 is a side elevation of the same,

Figure 3 is a vertical section taken on line 3—3 of Figure 2, and,

Figure 4 is a horizontal section taken on line 4—4 of Figure 2.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a vertical supporting frame, including spaced sides. Each side comprises a pair of vertical angle-irons 11. The angle-irons 11 in each pair are spaced, affording guide-ways 12. At their upper ends, the pairs of angle-irons 11 are connected by a horizontal angle-iron 13, having its vertical flange arranged within the passage 12 and its horizontal flange disposed above the pairs of vertical angle-irons. Spacing elements or shims 14 are provided. The horizontal angle-iron 13 is attached to the upper ends of the pairs of angle-irons 11 by bolts 15 or the like. The angle-irons 11 in each pair are further connected near their upper ends by bolts 16 or the like. At their lower ends, the pairs of angle-irons 11 are connected by a horizontal angle-iron 17, attached thereto by bolts 18 and 19 designates shims or the like. The horizontal angle-irons 13 and 17 extend laterally beyond the vertical supporting frame 10, and have openings 20 formed therein, to receive bolts, to rigidly secure the horizontal angle-irons to a stationary support.

Extending between the sides of the supporting frame 10 and arranged within the guide-ways 12 between the pairs of angle-irons 11 is a stationary blade or cutter 21, which may be held in place by frictional engagement with the flanges of the angle-irons 11. The blade 21 is stationary, and engages at its upper edge with wedges 22, engaging beneath the bolts 16. By driving in either wedge 22 the stationary blade may be adjusted so that it will be horizontal, or slightly inclined, or the stationary blade may be slightly vertically adjusted while remaining horizontal. The wedges 22 prevent the blade from moving upwardly when struck by the brick. The upper stationary knife 21 is preferably shimmed, so that it will be clamped in place by frictional engagement with the pairs of angle-irons 17.

A horizontal table 23 is provided for supporting the brick, and this table is secured upon horizontal angle-irons 24, which are bolted at 25 to the pairs of angle-irons 11. The table 23 is arranged a suitable distance below the upper stationary blade 21 and the table has a slot 26, for the passage of a vertically movable blade, to be described.

Mounted to be shifted vertically within the guideway 12 is a generally horizontal lower blade 27, which is pivotally mounted near its center, as shown at 28 with a coupling 29. If desired, pins 30 may be attached to the movable blade for operation near and slightly spaced from the pairs of vertical angle-irons 11. These pins serve to limit the lateral shifting movement of the blade, but permit the blade to turn upon the horizontal pivot 28, so that the blade may automatically adjust its cutting edge with the inclination of the lower surface of the brick. This lower blade passes upwardly through the opening 26. When the lower blade is in the starting lowermost position, it is beneath the upper surface of the table 23, Figure 1.

The coupling 29 is attached to the upper ends of spaced generally vertical links 31, by means of a

bolt 32, and the coupling 29 is arranged between the links 31. The links are connected near and beneath the coupling 29 by a horizontal rod 33, passing through openings formed in the links and screw-threaded for receiving nuts 34. The rod 33 operates within the guideways 12. A spacing sleeve 35 is mounted upon the rod 33 between the links 31 and spacing sleeves 36 are mounted between the links 31 and the pairs of angle-irons 11. The links 31 are connected between their ends by a rod 37. At their lower ends, the links 31 are pivotally connected at 38 with a treddle 39, arranged near the bottom of the supporting frame 10. This treddle is pivotally mounted upon the supporting frame by a bolt 40. This bolt 40 carries spacing sleeves 41, as shown. The treddle is formed of spaced bars or straps 42, connected by bolts 43, with a filler-block 44 arranged between the same. The treddle is moved upwardly by a retractile coil spring 45, attached thereto at 46 and to the supporting frame 10, at 47. A stop 48 limits the upward movement of the treddle.

The operation of the machine is as follows:

When the operator takes his foot off the treddle 39, the spring 45 moves the treddle to the uppermost position and the lower blade 27 is shifted to the lowermost position, beneath the upper surface of the table 23. The operator then places a brick upon the top of the table 23, inserting the brick between the blades 21 and 27, at the selected position. The blades 21 and 27 are spaced a greater distance than the vertical dimension of the brick, and hence the upper surface of the brick is spaced from the upper blade 21, when the brick rests upon the table 23 and before the lower blade 27 is elevated. The brick may have its longitudinal axis disposed at a right angle to the blades 21 and 27 or the longitudinal axis of the brick may be inclined with respect to the blades. If desired, a portion of the flange of one of the angle-irons 11 may be suitably cut away to permit of the angular position of the brick or the pairs of flanges may be spaced farther apart. The operator places the brick upon the table which supports the same in the horizontal position and the brick is released by the hands. The operator then steps upon the treddle 39 to force the same down quickly, and this downward movement of the outer end of the treddle swings the forward end of the treddle upwardly. The lower blade 27 moves upwardly through the slot 26 and strikes the brick at the desired line, and throws this brick upwardly to strike against the upper blade 21. The two blades 21 and 27 thus engage the brick upon its opposite faces, and aligned points, thereby cutting the brick. An important feature of the invention is that the movable blade is arranged in the lowered position, and beneath the upper surface of the table, thereby eliminating the necessity of the operator holding the brick during the cutting action. This frees the hands of the operator and also renders it possible for him to strike the brick a harder blow, during the cutting action.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, what I claim is:

1. In a machine for cutting brick or the like, a vertical supporting frame comprising spaced pairs of angle-irons, the angle-irons in each pair being spaced to provide passages, horizontal angle-irons extending into the passages and attached to the vertical angle-irons and projecting laterally beyond the same for attachment to a stationary support, a table secured to the pairs of angle-irons, a stationary upper blade held within the passages, a vertically movable lower blade operating within the passages, a treddle pivotally connected with the lower end of the supporting frame, a link pivotally connected with the forward end of the treddle, a coupling connected with the link and pivotally connected with the lower blade so that the lower blade may swing vertically with respect to the upper blade.

2. In a machine for cutting brick or the like, a vertical supporting frame comprising spaced pairs of angle-irons, the angle-irons in each pair being spaced to provide passages, horizontal bars extending into the passages and attached to the vertical angle-irons and projecting laterally beyond the same for attachment to a stationary support, a table secured to the pairs of angle-irons, a stationary upper blade held within said passages, a vertically movable lower blade operating within said passages, a treddle pivotally connected with the lower end of the supporting frame, and a link pivotally secured to the treddle at its lower end and pivotally connected with the lower blade at its upper end.

3. In a machine for cutting brick or the like, a vertical supporting frame comprising spaced pairs of bars, the bars in each pair being spaced to provide passages, horizontal bars extending into the passages and attached to the vertical bars near their upper and lower ends and projecting laterally beyond the vertical bars for attachment to a stationary support, a substantially horizontal table arranged between the pairs of vertical bars and secured thereto, said table having a slot formed therein, a stationary upper blade arranged above the table and held within said passages, a lower vertically movable blade arranged within said passages and adapted to move downwardly below the upper surface of the table, and manually operated means to rapidly move the lower blade upwardly so that it is projected above the upper surface of the table to strike the brick and in turn cause the brick to strike against the upper blade.

4. In a machine for cutting brick or the like, a vertical support being provided with guide passages, an upper stationary blade mounted upon the vertical support, a substantially horizontal table mounted upon the vertical support and arranged beneath the blade and having a slot, a substantially horizontal movable lower blade mounted beneath the table and movable through the slot, a coupling with which the lower blade is pivotally mounted so that such blade may automatically adjust itself to the lower surface of the brick, a treddle, and a link connecting the treddle and coupling, the arrangement being such that the hands of the operator may be free when the lower blade strikes the brick and throws it upwardly against the upper blade.

RAY H. STAHL.