Jan. 30, 1940. H. T. WADDILL 2,188,616

SICKLE HOLDING AND SHARPENING MACHINE

Filed Sept. 3, 1938 3 Sheets-Sheet 1

Fig. 1.

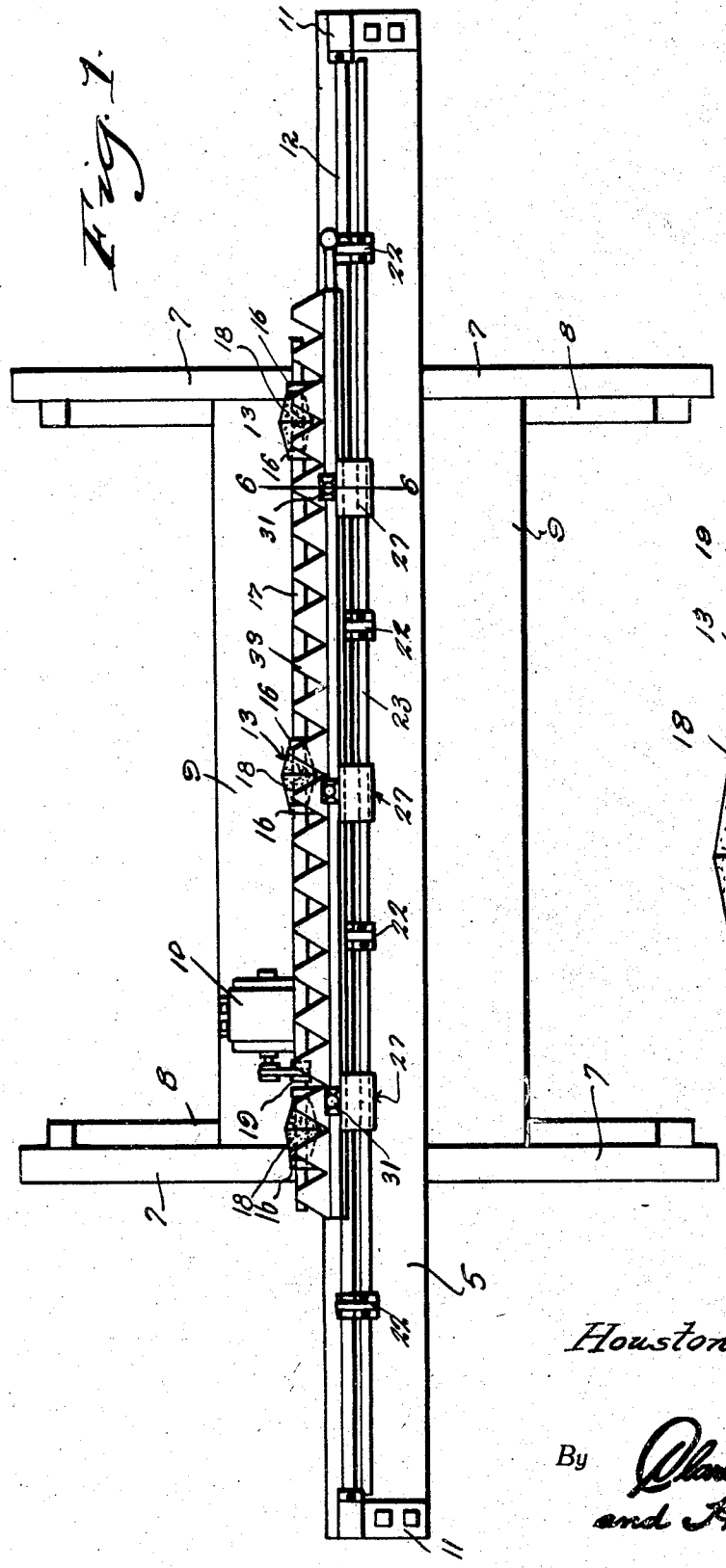
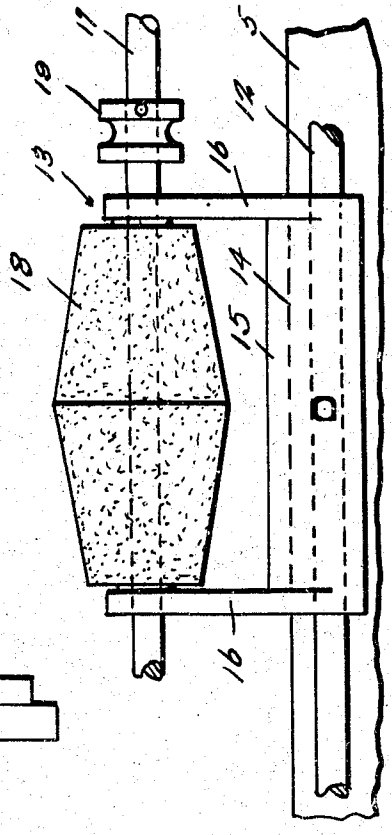


Fig. 5.



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Filed Sept. 3, 1938 3 Sheets-Sheet 2

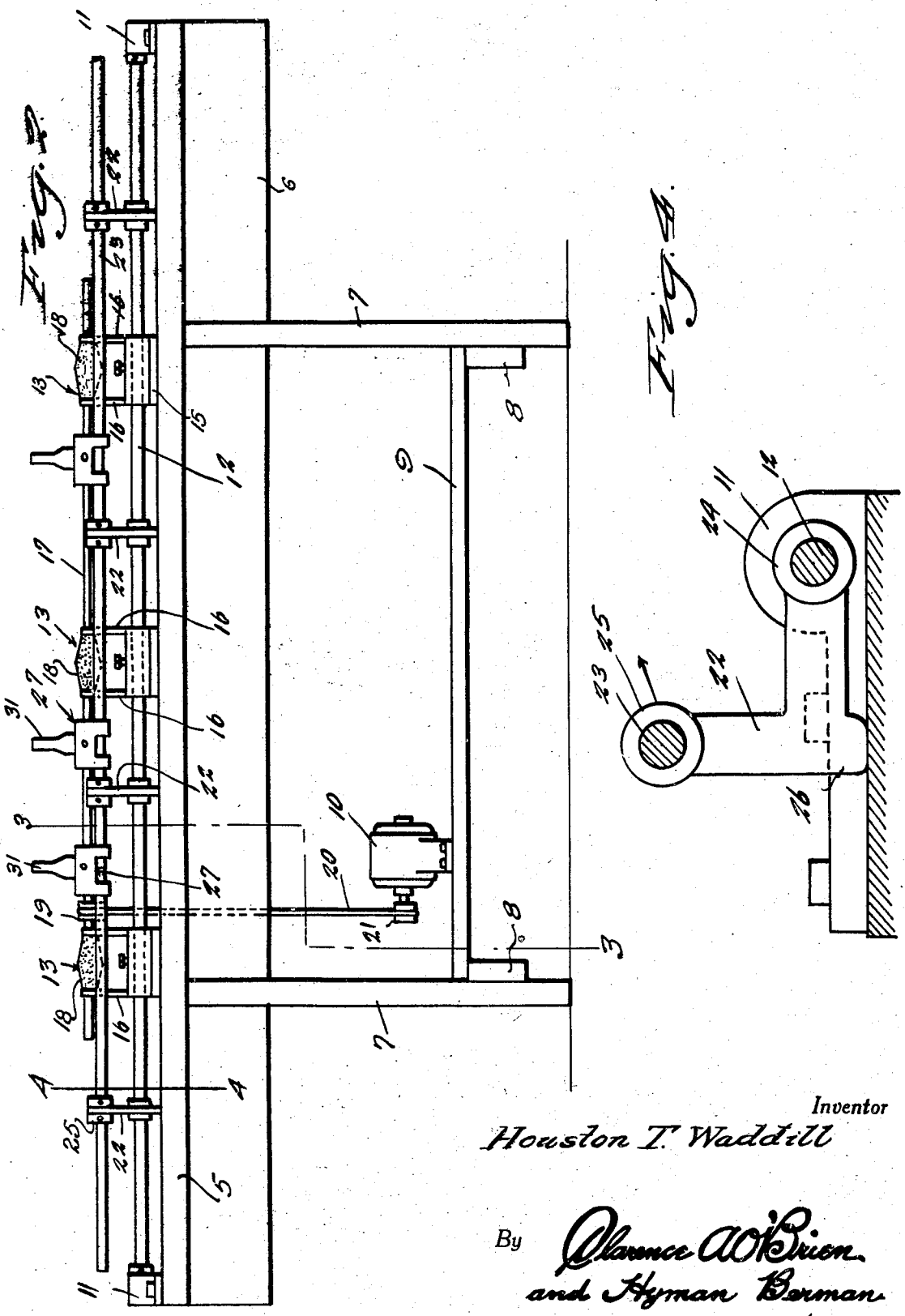


Fig. 1.



Fig. 4.

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SICKLE HOLDING AND SHARPENING MACHINE

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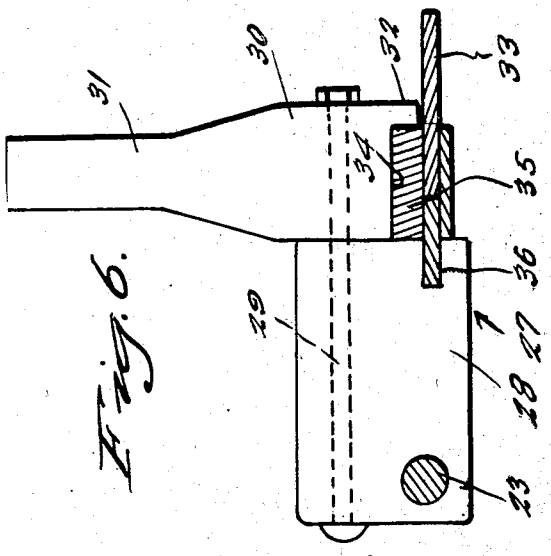



Fig. 6.

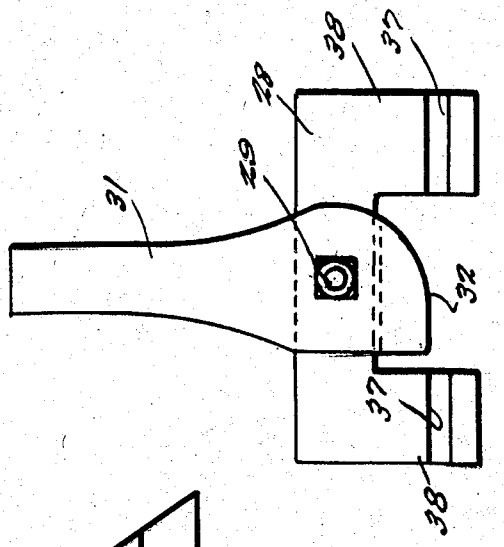



Fig. 7.

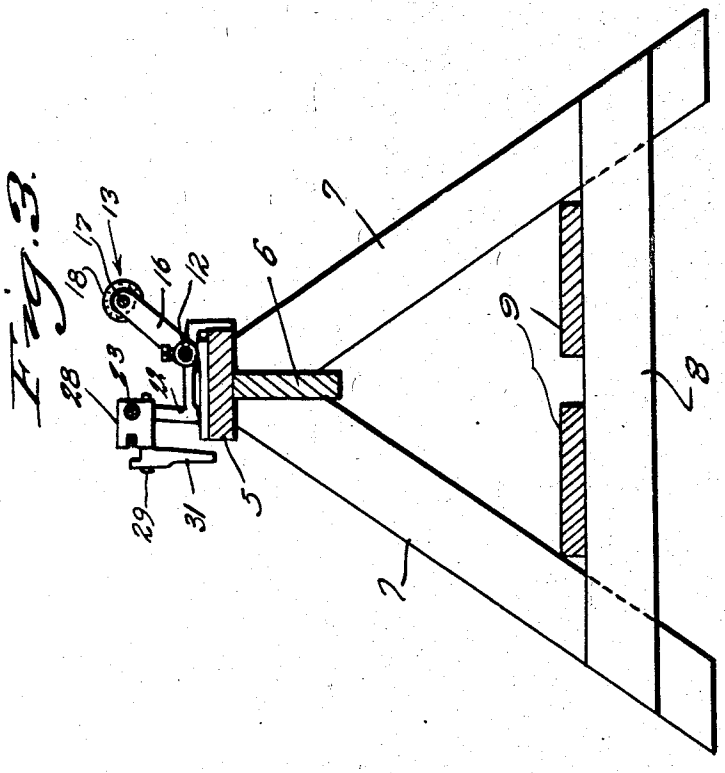



Fig. 8.

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# UNITED STATES PATENT OFFICE

2,188,616

## SICKLE HOLDING AND SHARPENING MACHINE

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Application September 3, 1938, Serial No. 228,434

3 Claims. (Cl. 51—222)

This invention relates to new and useful improvements in mechanisms whereby sickles can be held and properly sharpened with the least amount of effort on the part of the operator.

Another important object of the invention is to provide a sickle-sharpening mechanism on which the sickle can be once set and completely sharpened without removal therefrom.

Other objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a top plan view.

Figure 2 is a side elevational view.

Figure 3 is a section on line 3—3 of Figure 2.

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

Figure 5 is a fragmentary detailed elevational view of one of the grinding units.

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

Figure 7 is a side elevational view of one of the clamps.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents a narrow elongated table supported by the beam 6 and the end uprights, which consists of the upwardly converging legs 7—7 connected at their lower portions by the cross-member 8 and these cross-members 8 are bridged by the planks 9 which form a platform for the electric motor 10.

On each end portion of the table 5 is a bearing 11 for receiving the corresponding ends of the elongated shaft 12.

At desired spaced intervals along this shaft 12 are the grinding units generally referred to by numeral 13, each consisting of the barrel 14 having a downwardly extending flange 15 for embracing one edge portion of the table 5 and laterally disposed arms 16 which are apertured to receive an elongated shaft 17. Each of the units 13 further includes the grinding element 18 which element is circular in cross section tapering from its intermediate portion toward each end. Each of these grinding elements 18 is located on the shaft 17 between the corresponding pair of arms 16. A pulley 19 is secured to the shaft 17 and a belt 20 is trained over this pulley 19 and the pulley 21 on the shaft of the motor 10. Thus the grinding elements are driven by the motor 10, belt 20 and shaft 17.

L-shaped members 22 are provided for supporting the upper shaft 23. These L-shaped members 22 have their lower ends provided with collars 24 receiving the lower shaft 12 while their upper ends are likewise provided with collars 25 through which the upper shaft 23 is disposed. The L-shaped members 22 are provided with heel portions 26 for bodily supporting the upper shaft 23.

The upper shaft 23 carries the holding units generally referred to by numeral 27. These holding units each consists of a block 28 through which the shaft 23 extends, the block being swingable on the shaft 23 and a bolt 29 extends through the block 28 and through the head portion 30 of the cam which has the handle extension 31.

The cam 30 has the lip portion 32 which rides down against the blade, or blades 33 while the base portion 34 of the cam bears against the member 35 of the sickle. The member 36 of the sickle assembly engages into the groove 37 of the leg portions 38 of the block 28, and when the cam 30 is properly moved against the sickle it is held firmly to the block 28. With the sickle thus held, the entire holding means including the assemblies 27 and shaft 23, can be swung in the direction of the arrows in Figure 3 so that the blade 33 is brought against the revolving grinding units 13.

In the operation of the mechanism, it can be seen that the sickle blade is positioned with its straight edge disposed in the slot 37 of the leg portions 38 of the block 28, with the blocks swung outwardly to the position shown in Figure 3, that is remote from the grinding units 13. With the blade thus disposed, the cams 32 are moved by the levers 31 so that the cams act against the sickle blade to clamp the sickle blade in position as shown in Figure 6 to prevent displacement of the sickle blade.

The sickle blade now carried by the block 28 is swung toward the grinding units 13 and then the entire assembly including the bracket 22, shaft 23, blocks 28 and the held blade can be swung to a position with the blade bearing against the grinding elements 18.

When the blade is to be removed, the brackets 22 are dropped to rest upon the table 5 after which the blocks 28 are swung outwardly to the position shown in Figure 3 so that the cams 32 can be released from the sickle blade.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

1. A sickle holding and sharpening machine comprising a support, an elongated shaft mounted on the support, a plurality of swingable grinding units on the shaft, a plurality of bracket structures attached to the shaft and normally resting on the support, said brackets having upstanding legs, a shaft extending through the upstanding legs, a block swingably mounted on the second-mentioned shaft and each having a sickle blade edge-receiving slot therein, a cam on each of the blocks for clamping a sickle blade and positioned with one edge thereof disposed in the slot of the block, said blocks and clamped sickle blade being adapted to be swung in unison to a position opposed to the grinding unit, or to a position remote from the grinding unit to permit displacement of the blade, said grinding units being swingable in unison on the first-mentioned shaft to engage the sickle blade when the sickle blade has been carried by the blocks and positioned in opposed relation to the said sharpening units.

2. A sickle holding and sharpening machine comprising a support, an elongated shaft mounted on the support, a plurality of swingable grinding units on the shaft, a plurality of bracket structures attached to the shaft and normally resting on the support, said brackets having upstanding legs, a shaft extending through the upstanding legs, a block swingably mounted on the second-mentioned shaft and each having a sickle blade edge-receiving slot therein, a cam on each of the blocks for clamping a sickle blade and positioned with one edge thereof disposed in the slot of the block, said blocks and clamped sickle blade being adapted to be swung in unison to a position opposed to the grinding unit, or to a position remote from the grinding unit to permit displacement of the blade, said grinding units being swingable in unison on the first-mentioned shaft to engage the sickle blade when the sickle blade has been carried by the blocks and positioned in opposed relation to the said sharpening units, said blocks being of U-shape, said blocks having one of said slots in each leg portion thereof.

3. A sickle holding and sharpening machine comprising a support, an elongated shaft mounted on the support, a plurality of swingable grinding units on the shaft, a plurality of bracket structures attached to the shaft and normally resting on the support, said brackets having upstanding legs, a shaft extending through the upstanding legs, a block swingably mounted on the second-mentioned shaft and each having a sickle blade edge-receiving slot therein, a cam on each of the blocks for clamping a sickle blade and positioned with one edge thereof disposed in the slot of the block, said blocks and clamped sickle blade being adapted to be swung in unison to a position opposed to the grinding unit, or to a position remote from the grinding unit to permit displacement of the blade, said grinding units being swingable in unison on the first-mentioned shaft to engage the sickle blade when the sickle blade has been carried by the blocks and positioned in opposed relation to the said sharpening units, said blocks being of U-shape, said blocks having one of said slots in each leg portion thereof, each of the said U-shaped blocks having the cam swingably mounted on the frame portion thereof.

HOUSTON T. WADDILL.