

A. C. CASE.
MACHINE FOR SHARPENING PLOWSHARES.
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1,014,119.

Patented Jan. 9, 1912.
2 SHEETS—SHEET 1.

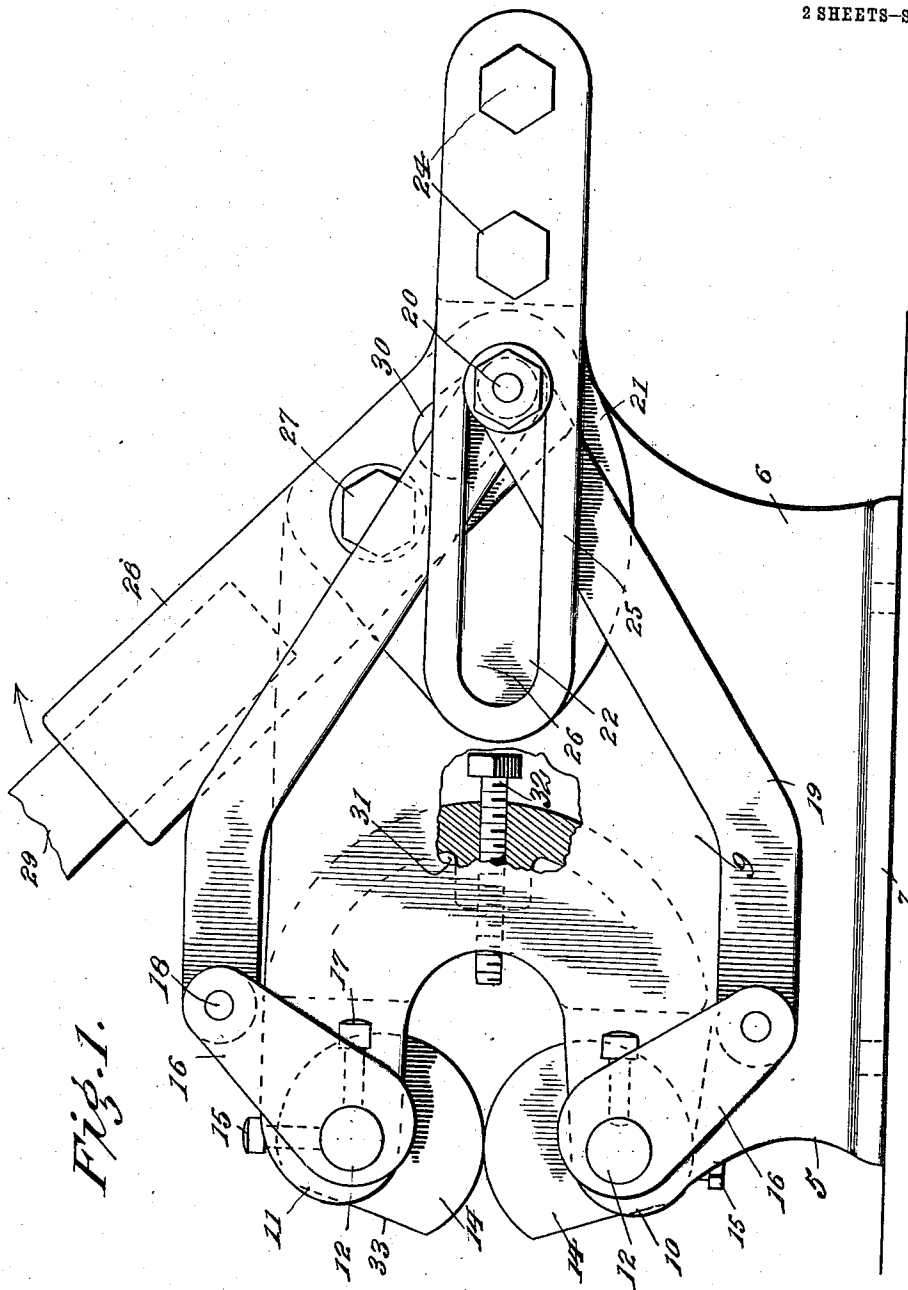


Fig. 1.

Witnesses
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2 SHEETS—SHEET 2.

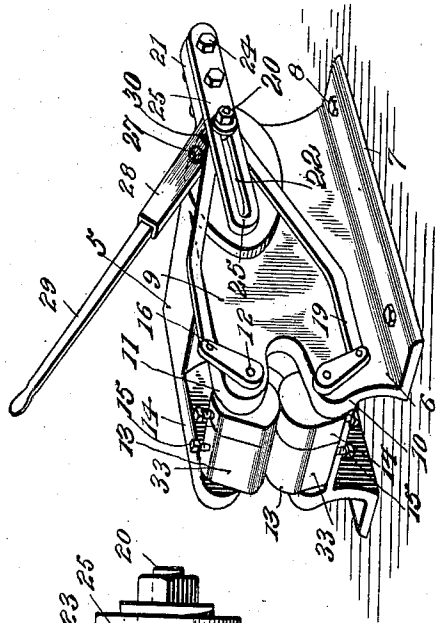


Fig. 3.

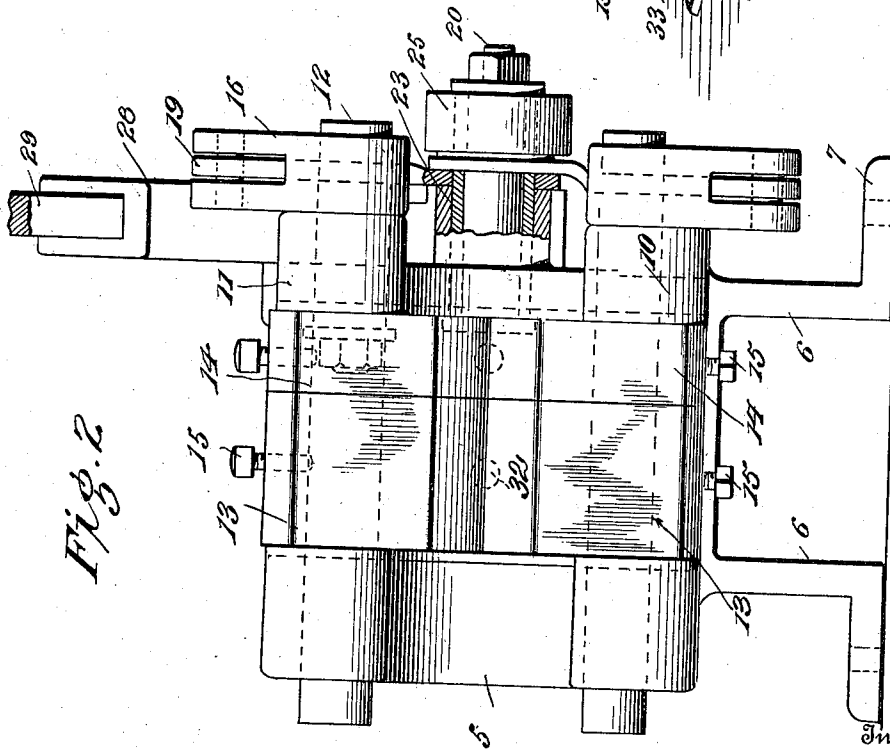


Fig. 2

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UNITED STATES PATENT OFFICE.

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MACHINE FOR SHARPENING PLOWSHARES.

1,014,119.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed June 15, 1910. Serial No. 567,045.

To all whom it may concern:

Be it known that I, ARCHIE C. CASE, citizen of the United States, residing at Coalmont, in the county of Clay and State of Indiana, have invented certain new and useful Improvements in Machines for Sharpening Plowshares, of which the following is a specification.

This invention relates to machines for sharpening plow shares and has for its object the provision of a strong, durable and thoroughly efficient device of this character, the construction of which is such that the shares may be readily re-sharpened when worn or dull without the necessity of hammering the metal in the usual manner to produce a cutting edge.

A further object is to provide a share sharpening machine including a plurality of sets of compression rolls eccentrically mounted on a supporting frame and operatively connected with a hand lever, means being provided for moving either set of rolls into engagement with the work to the exclusion of the other.

A further object is to provide the compression rolls of each set with a flat face so as to permit the insertion and removal of the work.

A still further object of the invention is generally to improve this class of devices, so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of a machine for sharpening plow shares constructed in accordance with my invention; Fig. 2 is a front elevation partly in section; Fig. 3 is a perspective view of the machine.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved machine forming the subject matter of the present invention comprises a supporting frame 5 having spaced

legs 6, the lower ends of which are bent laterally to produce longitudinally disposed attaching flanges 7, there being perforations formed in the flanges 7 for the reception of bolts or similar fastening devices 8 by means of which the machine may be secured to a floor, table or other suitable support.

The side members or walls 9 of the supporting frame are provided with transversely alined slots defining spaced arms 10 and 11 in which are journaled transversely disposed shafts 12. Eccentrically mounted on the shafts 12 are a plurality of sets of compression rolls 13 and 14, the rolls 14 being narrower than the adjacent rolls 13 and employed for rolling out the throat of a share. The rolls of each set are keyed to the adjacent shafts 12 by set screws 15 so that by releasing the set screws, either set of rolls may be moved into engagement with the work to the exclusion of the other. One end of each shaft is extended laterally beyond the adjacent side member 9 of the frame to form a support for a crank arm 16, the latter being rigidly secured to the shaft in any suitable manner as by a set screw 17. Pivotally mounted at 18 on the outer ends of the crank arms 16 are flat connecting rods 19, the opposite ends of which converge in the direction of the back of the machine and are pivotally mounted on a bolt 20. One of the side members or walls 9 of the supporting frame is extended longitudinally to form a web 21 having a longitudinally disposed slot 22 formed therein and in which is slidably mounted the bolt 20, there being a sleeve or bushing 23 surrounding the bolt 20 so as to reduce friction between the parts when the machine is in operation. Disposed on one side of the machine and fastened to the web 21 by cap screws 24, is a plate 25 having a slot 26 formed therein which registers with the slot 22 in the web 21 and forms a bearing for the bolt 20. Pivotally mounted at 27 on the web 21, is a socket 28 in which is seated a hand lever 29. The lower end of the socket 28 is provided with a slot 30 so as to permit movement of the bolt 20 within the slots 22 and 26 when the handle 29 is operated to actuate the compression rolls 13 and 14.

The front of the machine between the side walls 9 is cored or hollowed out to produce a chamber 31, there being set screws 32 extending through the rear wall of the cham-

ber 31 and constituting gages for limiting the forward movement of the plow share when the latter is inserted between the compression rolls. One side of each compression roll is cut-away to produce a flat face 33 which facilitates the insertion or removal of the work.

The throat of a plow share, or that portion near the point thereof is generally concaved or dishd so that if only a single set of wide compression rolls were mounted on the machine, the concaved edge of the share would be flattened or straightened out by said rolls in the act of sharpening the throat. It is therefore necessary to have two sets of compression rolls of different widths, one set of rolls being relatively wide to facilitate sharpening the straight portion of the share and the other set of rolls being narrow so as to permit the concaved face or throat of the share to be sharpened without danger of flattening the metal at the throat and thus changing the shape of the share. The compression rolls, being eccentrically mounted on the shafts, not only roll a bevel edge on the plow share, but also permit either set of rolls to be swung upwardly to inoperative position while the other set of rolls is in use. The function of the gages or screws 32 is to limit the forward movement of the plow share when introduced between the compression rolls, thus to cause said rolls to engage the cutting edge only of the plow share. It is obvious that by adjusting the screws 32 on the supporting frame, plow shares of different sizes may be readily sharpened. By adjusting the set screws 15, one of the rolls of either or both sets may be moved out of engagement with the work so that the mating rolls of said sets may be moved into engagement with the work when the handle or lever 29 is operated.

In use, the wide compression rolls 13 are swung upwardly to inoperative position and the narrow rolls swung downwardly to operative position, after which the plow share is heated and the latter inserted between the narrow rolls 14 with the concaved portion or throat of the share opposite said narrow rolls. The handle 29 is then actuated to force the rolls 14 against the plow share, thus producing a bevel cutting edge. The plow share is adjusted laterally between the rolls 14 after each operation of the handle 29 so as to present a new surface at the throat of the share for contact with the compression rolls. After the throat of the share has been sharpened, the narrow rolls 14 are swung upwardly and the wide rolls 13 swung downwardly in contact with the straight edge of the share, and the operation above referred to repeated until the entire length of the straight edge of the share is sharpened.

Having thus described the invention, what is claimed as new is:

1. A share sharpening machine including a supporting frame, spaced shafts journaled on the frame, compression rolls of different widths eccentrically mounted on the shafts, means operatively connected with the shafts for rotating the rolls, and means whereby the rolls of one width may be moved into engagement with the work, while the rolls of another width remain idle.

2. A share sharpening machine including a supporting frame, spaced shafts journaled on the frame, sets of compression rolls eccentrically mounted on the shafts, means operatively connected with said shafts for rotating the rolls, and means whereby either set of rolls may be moved into engagement with the work to the exclusion of the other.

3. A share sharpening machine including a supporting frame, spaced shafts journaled on the frame and provided with crank arms, sets of compression rolls secured to the shafts, a slotted plate secured to the frame, a lever pivotally mounted on the frame; a bolt extending through the slot in said plate and operatively connected with the adjacent end of the lever, rods forming a pivotal connection between the bolt and crank arms, and means whereby either set of rolls may be moved into engagement with the work to the exclusion of the other.

4. A share sharpening machine including a supporting frame having a chamber, spaced shafts journaled on the frame and provided with crank arms, sets of compression rolls eccentrically mounted on said shafts and provided with flat faces to permit the insertion of a plow share, a gage operating in the chamber for limiting the forward movement of the plow share, an operating lever pivotally mounted on the frame, a connection between the operating lever and crank arms, and means whereby either set of rolls may be moved into engagement with the work to the exclusion of the other.

5. A share sharpening machine including a supporting frame, spaced shafts journaled on the frame, compression rolls of different widths eccentrically mounted for rotative adjustment on each shaft and provided with flat faces to permit the insertion of the work between said rolls, a fastening device extending through each roll and engaging the adjacent shaft, whereby one roll of each shaft may be moved into engagement with the work to the exclusion of the other, an operating lever, and means connecting the operating lever and ends of the shafts for rotating the latter.

6. A share sharpening machine including a supporting frame having its front end bifurcated to form spaced arms and its rear end extended longitudinally to produce a slotted web, shafts mounted for rotation in

said arms and provided with terminal crank
arms, sets of compression rolls eccentrically
mounted for rotative adjustment on the
shafts, a slotted plate secured to the web and
5 registering with the slot in said web, an op-
erating lever pivotally mounted on said web
and having its lower end provided with a
slot, a bolt extending through the slotted
plate and slot in the lower end of the lever,
10 rods forming a pivotal connection between

the bolt and crank arms of the shafts, and
means whereby either set of rolls may be
moved into engagement with the work to the
exclusion of the other.

In testimony whereof, I affix my signature 15
in presence of two witnesses.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."