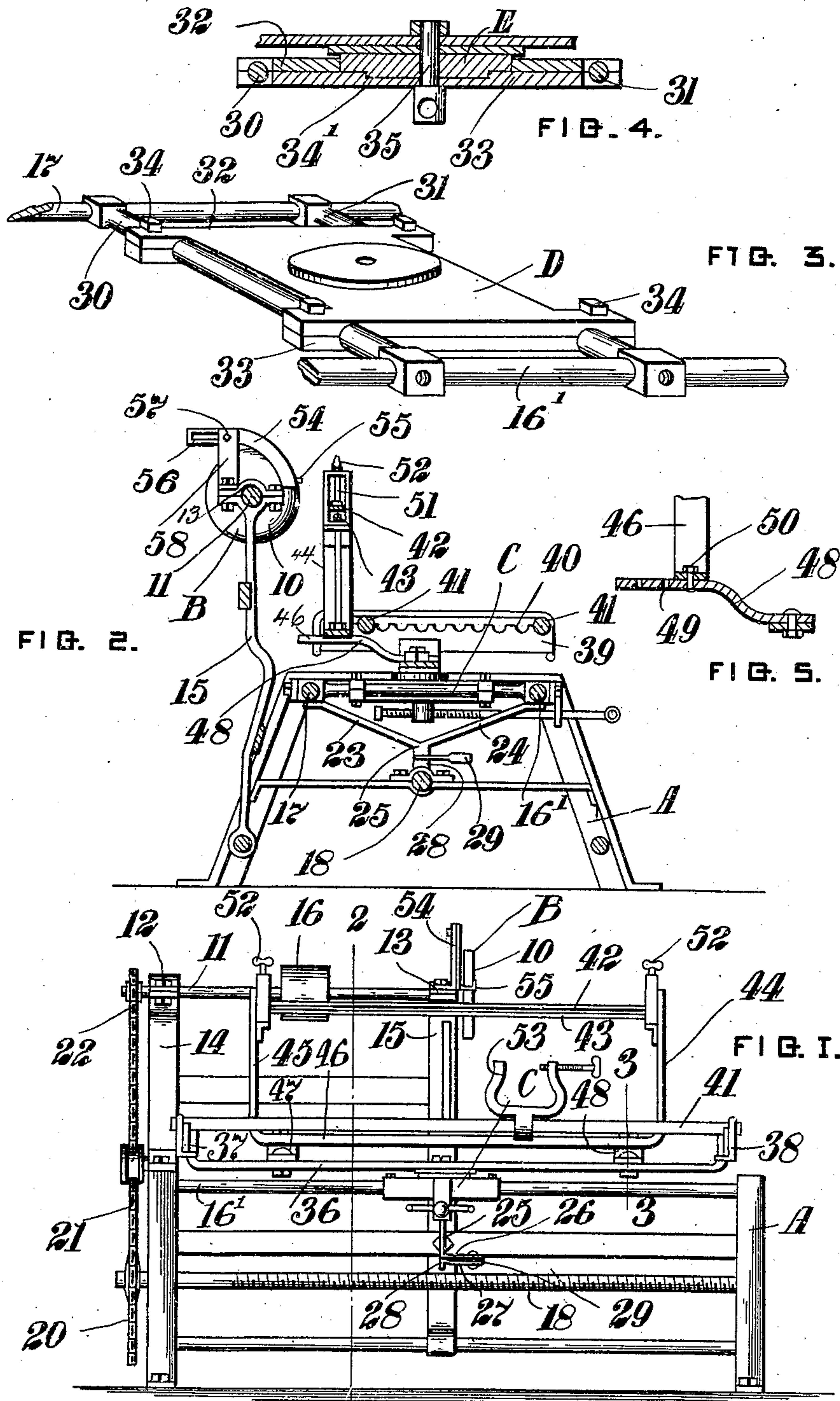


J. L. KYLE.
MACHINE FOR SHARPENING LAWN MOWERS, SKATES, &c.
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938,494.

Patented Nov. 2, 1909.



WITNESSES

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BY

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ATTY.

UNITED STATES PATENT OFFICE.

JOHN LINDSAY KYLE, OF SEAFORTH, ONTARIO, CANADA.

MACHINE FOR SHARPENING LAWN-MOWERS, SKATES, &c.

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Specification of Letters Patent.

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Application filed April 16, 1909. Serial No. 490,389.

To all whom it may concern:

Be it known that I, JOHN LINDSAY KYLE, of Seaforth, in the county of Huron, Province of Ontario, Dominion of Canada, have
5 invented certain new and useful Improvements in Machines for Sharpening Lawn-Mowers, Skates, &c., of which the following is a specification.

My invention relates to improvements in
10 a machine for sharpening lawn-mowers, skates and like articles, and the objects of my invention are to provide a simple and effective machine of this character in which the work may be supported with maximum
15 rigidity, and which will automatically operate to effect the work across the grinding element.

Further objects are to provide means for adjusting the position of the work, in order
20 that it may be set exactly true prior to the grinding or sharpening operation, and it consists essentially of the construction and elements described hereinafter in detail in the accompanying specifications and draw-
25 ings.

In the drawings, Figure 1 is a front elevation of the machine. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is a perspective view of the longitudinally movable carriage.
30 Fig. 4 is a sectional detail through the center of the carriage. Fig. 5 is a sectional detail on the line 3—3, Fig. 1.

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

Referring to the drawings, A represents the main frame of the machine of suitable construction, to support the various mechanical elements hereinafter described.

40 B represents the grinding element, that in the embodiment illustrated consisting of a grinding wheel 10 mounted on a shaft 11, supported in bearings 12 and 13 at the end of standards 14 and 15, the shaft 11 being
45 driven by suitable means such as the pulley 16 thereon.

Longitudinally extending on the frame are guide rods 16' and 17, and mounted on these guide rods is a carriage C, the said
50 carriage being driven from a screw 18, which has a sprocket 20 on the end thereof connected with a chain 21, which connects with

a sprocket 22 on the shaft 11. The connection between the screw 18 and the carriage is made releasable, in order that the movement of the carriage may be stopped or
55 started at any desired point. This is accomplished by providing downwardly depending arms 23 and 24 on the carriage, which unite to form an extension 25, which extension has a lateral bend 26 thereon, and
60 pivoted to this lateral bend is a spring arm 27, this arm having a downwardly turned end 28, adapted when bent downwardly to engage the screw 18. The downward movement of this end is effected by a member 29
65 pivoted between the end 26 and the member 27, and being formed with an enlargement adapted to cause downward movement of the end 28 when the pivoted member is
70 swung into a position substantially parallel with the member 27 and the end 26.

The carriage C is formed with two laterally extending guide bars 30 and 31, the ends of which are provided with perforations through which the guide rods 16 and
75 17 extend.

Mounted on the guide bars 30 and 31, is a laterally adjustable member D, which member is formed in two horizontally divided sections 32 and 33, held together by means
80 of suitable bolts 34, the said members having recesses formed in each, into which the guide bars 30 and 31 fit.

The transversely extending member D has a socket 34' formed therein, and in this
85 socket, a swiveling member E is supported, the said member being adjustable in the socket and being adapted to be locked by means of a bolt 35, extending through the transversely movable member and the swiveling member. The swiveling member is
90 adapted to support the work, and in order to accommodate different sized lawn-mowers and other articles, which it may be necessary to sharpen, a longitudinally extending bar
95 36 is provided on the swiveling member, having upturned ends 37 and 38, which support transversely extending end members 39, the said end members having notches 40 in their upper edges, into which longitudinally
100 extending bars 41 fit, the said bars being adapted to be adjusted in the different notches in order to support the work at

whatever point necessary. In the embodiment illustrated, a washer plate 36' is inserted between the bar 36 and the swiveling member.

5 To actually support the blade being sharpened, clamping bars 42 and 43 are provided, the lower clamping bar being rigidly supported from the upturned extremities 44 and 45 by a longitudinally extending bar 46, 10 which is adjustably supported from brackets 47 and 48 connected to the bar 36. This adjustable support is accomplished by providing a plurality of perforations 49 in the brackets 47 and 48, through which a clamping 15 bolt 50 may extend, the said clamping bolt extending through the member 46. The upper bar 42 is movable in slots 51 in the ends 44 and 45, and is adapted to be clamped in lowest position by means of clamping 20 screws 52 extending through the extremities of the ends 44 and 45.

In order to hold the lawn mower wheel from turning, a clamp 53 is provided, supported from the bar 42.

25 To guide the edge of the blade being sharpened, an adjustable arcuate member 54 is provided having an end 55 extending across the face of the grinding wheel. This arcuate member has a slot 56 and a bolt 57 30 is provided extending through the said slot and connecting the arcuate member to a fixed standard 58.

In operation the blade to be sharpened is clamped between the bars 42 and 43, and is 35 set true with respect to the grinding element by a proper adjustment of the swiveling member and the transverse member. The carriage is placed in engagement with the screw 18 by the means described, and the 40 motion thereof made to continue until the blade has been sharpened to the desired extent.

As many changes could be made in the above construction, and many apparently 45 widely different embodiments of my invention within the scope of the claims could be made without departing from the spirit or scope thereof, it is intended that all matter contained in these specifications and drawings shall be interpreted as illustrative and 50 not in a limiting sense.

What I claim as my invention is:

1. A grinding and sharpening machine, including in combination a suitable frame, a 55 grinding element, a carriage longitudinally movable on the frame across the grinding element, a transversely movable member on the carriage, a swiveling member mounted on the transversely movable member, and 60 comprising end members, longitudinally extending bars adjustably supported from the end members, clamping means above the bars adapted to hold the blade to be sharpened, and means for actuating the carriage.

2. A grinding and sharpening machine, 65 including in combination a suitable frame, a grinding element, a carriage longitudinally movable on the frame across the grinding element, a transversely movable member on the carriage, a swiveling member, comprising 70 end members, longitudinally extending bars adjustably supported from the end members, a fixed clamping bar above the end member, a movable clamping bar extending along the same, and means for 75 clamping the two bars together.

3. In a grinding and sharpening machine, including in combination, a suitable frame, a grinding element, a carriage longitudinally 80 movable thereon, across the grinding element, and means for actuating the carriage, a transversely movable member on the carriage having a counter sunk socket therein, a swiveling member rotatable in the socket, and adapted to support the work, and a 85 clamping bolt extending through the transversely extending member and the swiveling member.

4. A grinding and sharpening machine, including in combination, a suitable frame, a 90 grinding element, a carriage longitudinally movable on the frame across the grinding element, transversely extending guide bars on the carriage, a transversely movable member, horizontally divided to form two sections 95 adapted to extend on opposite sides of the guide bars and being provided with recesses into which the guide bars fit, and means for clamping the sections together, and a swiveling member supported on the 100 transversely extending member and being adapted to support the work.

5. A grinding and sharpening machine, including in combination, suitable frame, a grinding element, a carriage longitudinally 105 movable on the frame across the grinding element, a transversely movable member on the carriage, a swiveling member mounted on the transversely movable member, and adapted to support the work, and means for 110 actuating the carriage, and an adjustable guard for the grinding element, having a laterally turned end, extending across the face of the grinding element.

6. In a grinding and sharpening machine, 115 and in combination, a suitable frame, a carriage longitudinally movable thereon, a longitudinally extending screw, a depending arm from the carriage having a lateral bend thereon, a spring arm pivoted to the lateral 120 bend having a downwardly turned end adapted to engage the screw and means for forcing the end of the spring arm into engagement with the screw.

7. In a grinding and sharpening machine 125 and in combination, a suitable frame, a carriage longitudinally movable thereon, a longitudinally extending screw, a depending

arm from the carriage having a lateral bend
thereon, a spring arm pivoted to the lateral
bend having a downwardly turned end
adapted to engage the screw, and a pivoted
5 member having an enlargement adapted to
force the spring arm into engagement with
the screw.

In witness whereof I have hereunto set
my hand in the presence of two witnesses.

JOHN LINDSAY KYLE.

Witnesses:

J. M. BEST,

J. H. BEST.