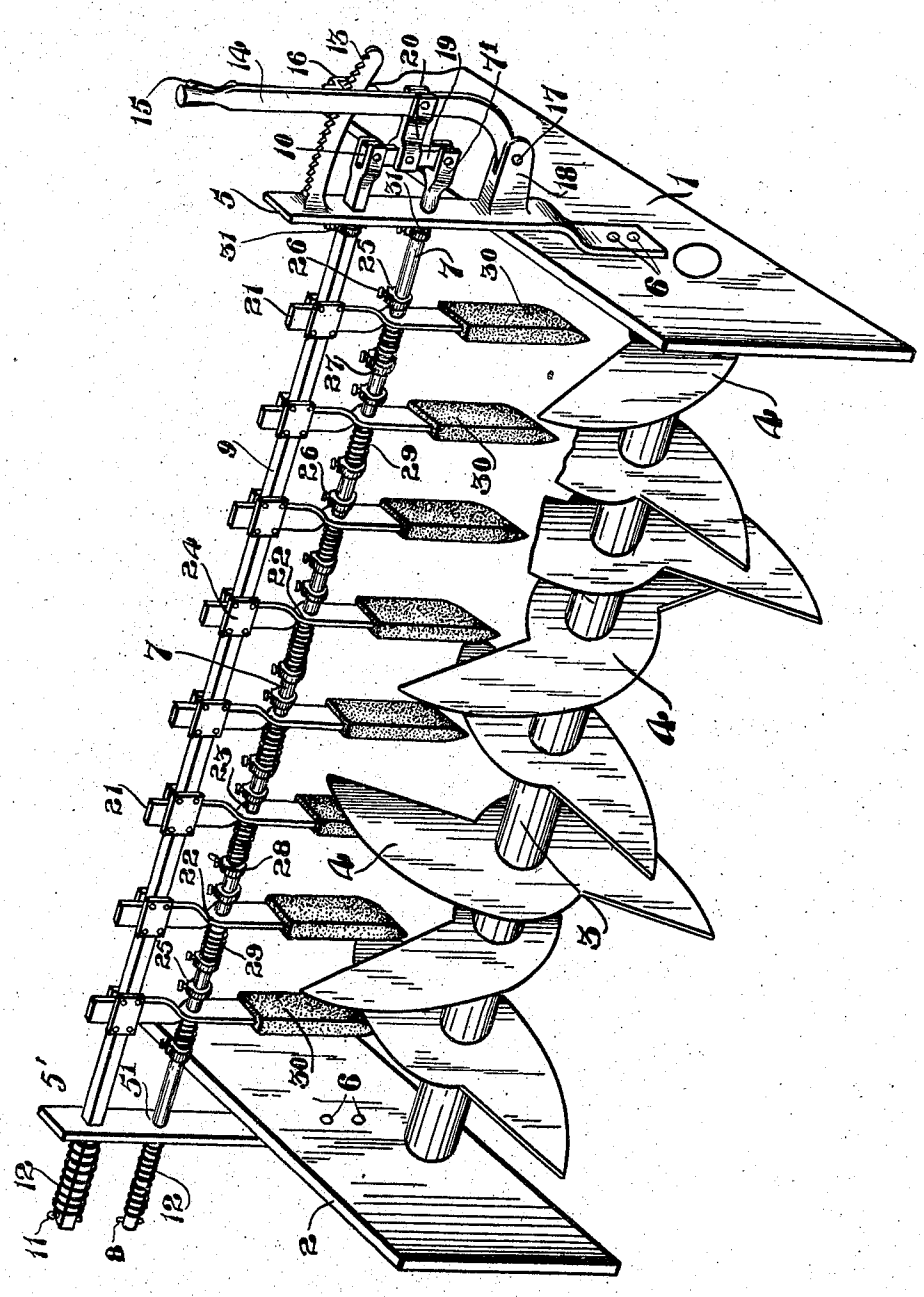
No. 894,747. PATENTED JULY 28, 1908.

D. E. RINGLAND.

KNIFE SHARPENER FOR SELF FEEDERS.

APPLICATION FILED OCT. 16, 1907.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID ERNEST RINGLAND, OF KILLARNEY, MANITOBA, CANADA.

KNIFE-SHARPENER FOR SELF-FEEDERS.

No. 894,747. Specification of Letters Patent. Patented July 28, 1908.

Application filed October 16, 1907. Serial No. 397,705.

To all whom it may concern:

Be it known that I, DAVID ERNEST RINGLAND, of the village of Killarney, in the Province of Manitoba, Canada, mason, have invented certain new and useful Improvements in Knife-Sharpeners for Self-Feeders, of which the following is a specification.

My invention relates to an attachment applied on the sides of a feeder, in proximity to the knives which cut the sheath binding, and the object of the invention is to provide a simple sharpening attachment which may be placed permanently on the self feeder and which can be thrown into and out of engagement with the feeder knives at will, provision being made to allow the grind stone to fluctuate for irregularities in the knife surface, and it consists essentially of a set of emery stones corresponding in number to the number of the knives, supported by individual arms carried on two slidable cross shafts supported at their ends in standards extending from the sides of the feeder, each arm being free to rock at its connection with the upper shaft, and to move laterally or slide on the lower shaft, means for restricting the position of the arms at one side and spring means controlling the movement at the other, and means for sliding the rod, the parts being arranged and constructed as hereinafter more particularly described.

The figure in the drawings is a perspective view of my complete invention showing it attached to the sides of the feeder, and in disengaged position, a portion of some of the knives being broken away for the sake of clearness.

1, 2, are the sides of the ordinary self feeders used with a threshing machine, and 3 is the feeder knife-bar, on which are adjusted the knives 4, of any suitable or convenient design, there being eight knives shown in the drawing.

5 5′ are standards bolted at 6 to the sides 1, 2, directly opposite each other and above the shaft 3.

7 is a circular steel rod supported at its ends in bearings formed in the standards, the ends extending therebeyond, one being forked at 7′, and the other bored to receive a pin 8.

9 is a square steel rod above and parallel with the former rod, supported in the standards 5, and having its ends extending therebeyond, the one 10, forked, and the other bored to receive a pin 11, in this way being practically similar to the rod 7. The rods are substantially the same length and have the forked ends adjacent.

12 12 are springs encircling the rods and bearing at their one end against the outer face of the standard 5′, and at the other against the split pins 8 and 11, respectively.

13 is a portion of a quadrant having ratchet teeth thereon and extending outwardly from the standard 5, to which it is bolted, and 14 is a lever carrying a hand latch 15 and a detent 16, the detent operating on the quadrant. The lever is bolted at 17, at its lower end, to the lug 18, extending from the standard 5, and has its end arched, as shown in the drawing.

19 is a link connecting the forked ends of the rods 7 and 9, and 20 is a second link connecting the link 19 with the lever 14.

21 are arms or shanks bent at 22 one-quarter of a turn, placing the upper portion at right angles to the lower portion.

23 are openings in the lower portion through which the rod 7 passes, the openings being large enough to allow of lateral movement of the shanks.

24 are clamps or clips holding the upper ends of the shanks to the rod 9, the clamps being designed to allow a rocking motion to the shank, but yet retain it in a definite position on the rod. The object of this will be more clearly understood hereinafter.

25 are collars on the rod 7, to the right hand side of the lower portion of the shank, and 26 are set screws whereby the collars may be held in any desired position on the rod.

27 are collars to the left hand side of the rod 7, being held in position on the rod by set screws 28.

29 are spiral springs, between the collar 27 and the shank, the spring encircling the rod 7.

30 are stones, preferably emery stones, cemented on the lower end of the shanks, and, when disengaged from the knives, occupy a position directly to the left thereof, being completely clear of them. The ends of the stones are tapered, as shown in the drawings.

31 are collars on the rods 7 and 9, towards the lower end, and inside of the standard 5. These collars can be adjusted to any position, and act as a safeguard against pulling the rods and the depending stones too far to the right when moving the lever 14.

To more fully understand the operation of the different parts I will now describe the same.

When it is desired to sharpen the knives the lever 14 is pulled outwardly, and this pulls both the rods in the same direction as the lever. The operator throws the lever sufficiently to cause the stones to engage with the knives, it being readily seen that the clip 24 carries the shank with the rod when the lever is moved. To avoid any chance of the stones being thrown over too far the collar 31 is used, and it can be adjusted according to requirements. With the knives revolving and the stones engaging the same the knives are quickly sharpened, and owing to the simplicity of the attachment and the speed with which it can be used it should prove invaluable, as it appears that the greatest trouble with self feeders seems to be in keeping the knives properly sharpened. Any irregularity in the face of the knife when grinding is allowed for by the shank being free to rock at its connection with the upper rod 9, and the stone is held against the face of the knife by virtue of the springs 29.

What I claim as my invention is:

1. In a device of the class described the combination with the feeder knives, and the side supports for the knives, of a set of opposing standards extending from the aforesaid side supports, an upper and a lower rod slidable in the standards, a hand lever for operating the rods, a series of sharpening stones supported by shanks clamped to the upper rod and laterally movable on the lower rod, means on the rod for restricting the position of the arms at one side, and spring means controlling the movement at the other, as and for the purpose specified.

2. In a device of the class described the combination with the feeder knives and the side supports for the knives, of a set of opposing standards extending upwardly from the side supports, a lower circular rod slidable in the standards and having its one end forked and the other end extending beyond the opposing standards, a similar square rod slidable in the standards and above the latter rod, a link connecting the forked ends of the rods, a lever linked with the latter link and operating on a quadrant, a series of sharpening stones suspended in proximity to the knives by individual shanks said shanks having their upper ends clamped to the square shaft, and an opening in their lower portion through which the circular rod passes, adjustable collars on the circular rod to one side of the shanks, adjustable collars on the circular rod to the other side of the shanks, springs enveloping the rod between the shank and the latter collars, adjustable collars on the rods adjacent the inner side of the standard on the lever side, pins passing through the free extending ends of the rods and springs enveloping the rods and extending between the pins and the adjoining standard, as and for the purpose specified.

Signed at Killarney, in the Province of Manitoba, this 1st day of October, 1907.

DAVID ERNEST RINGLAND.

Witnesses:

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LORNE T. TWEED.