(No Model.) 2 Sheets—Sheet 1.

J. M. HOUSEL.

GRINDSTONE DRESSER.

No. 456,954. Patented Aug. 4, 1891.

Fig. 1.

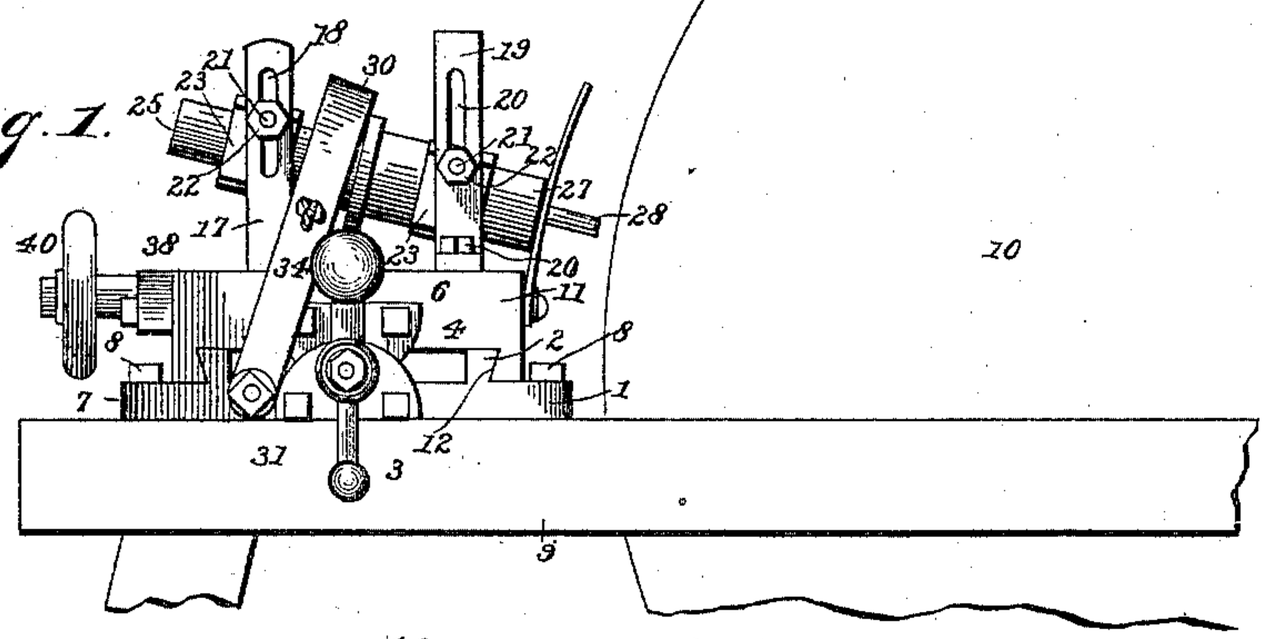


Fig. 2.

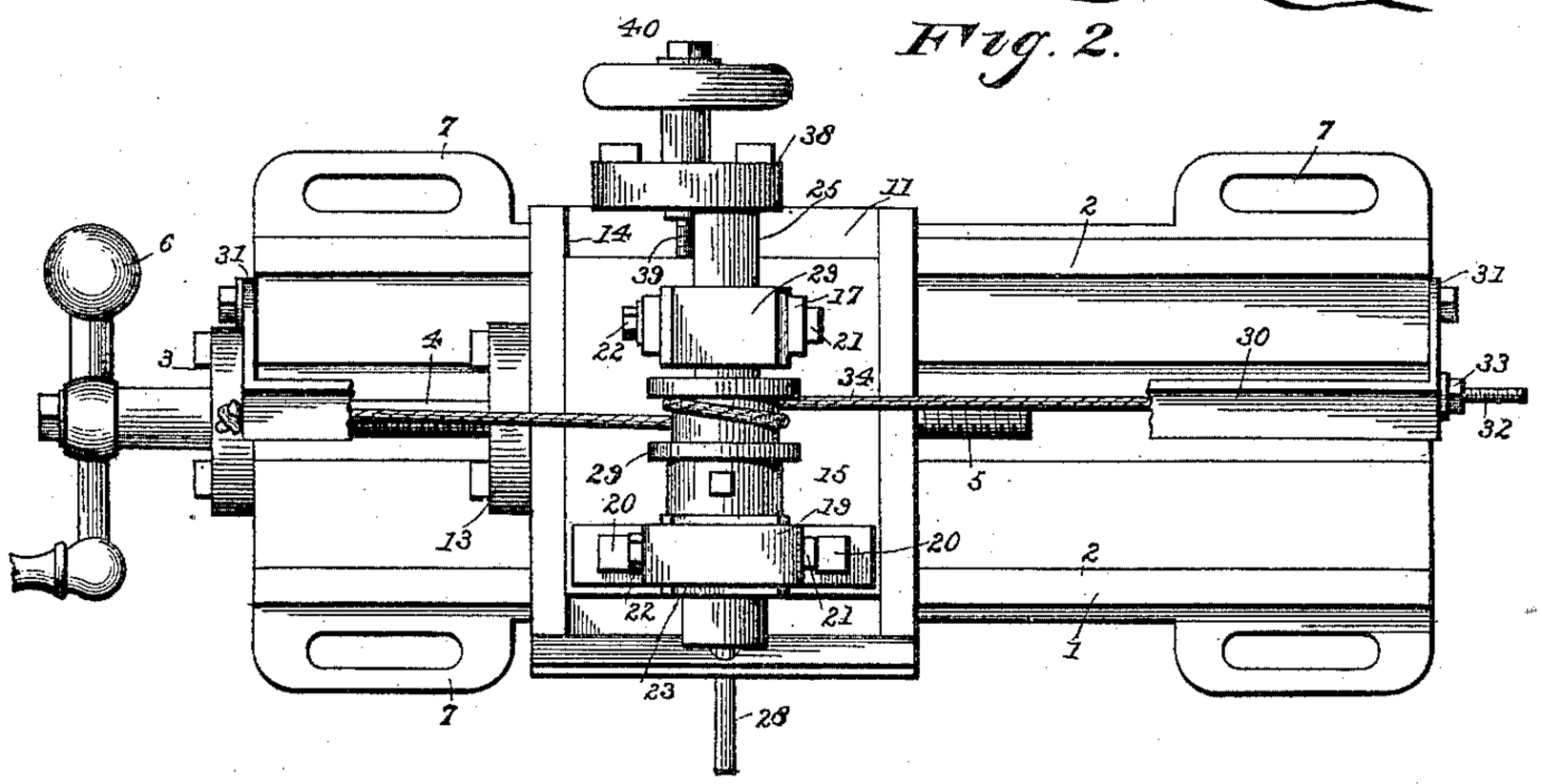
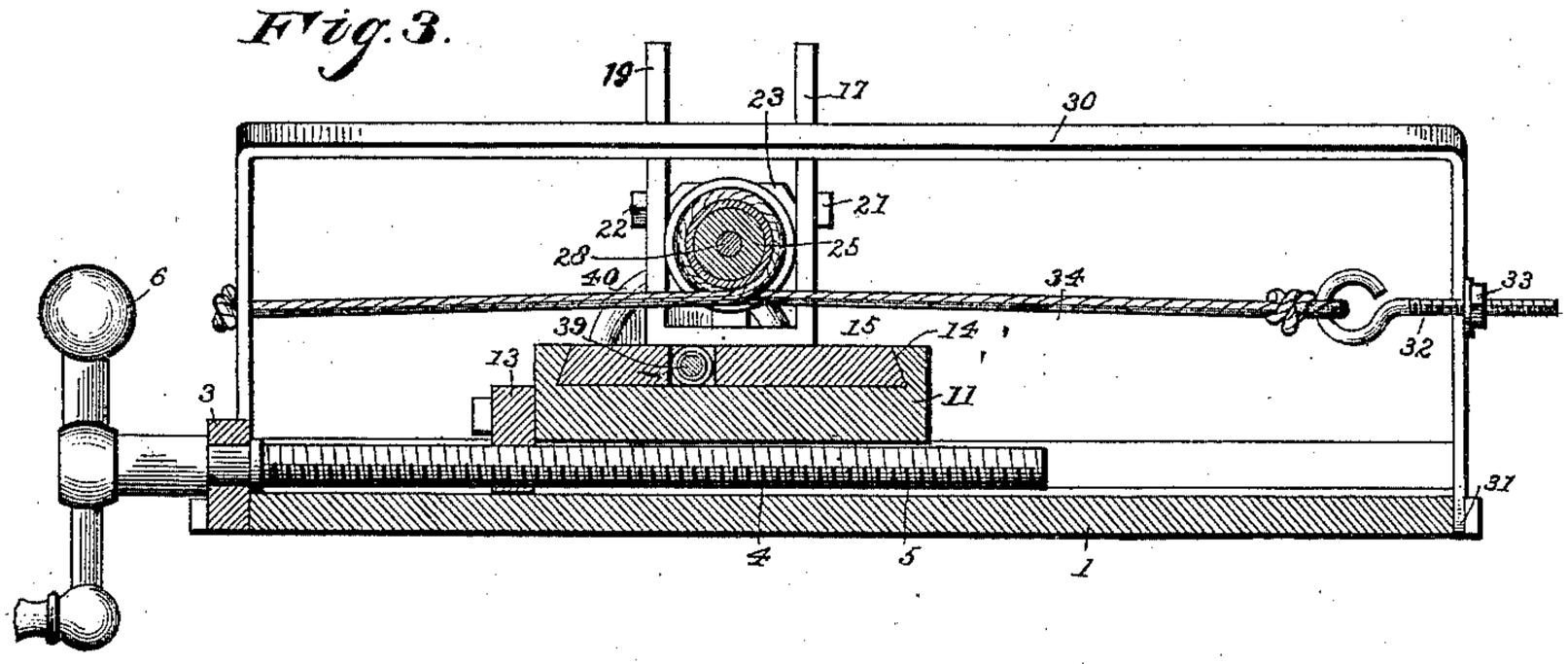


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

J. M. HOUSEL.

GRINDSTONE DRESSER.

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Fig. 4.

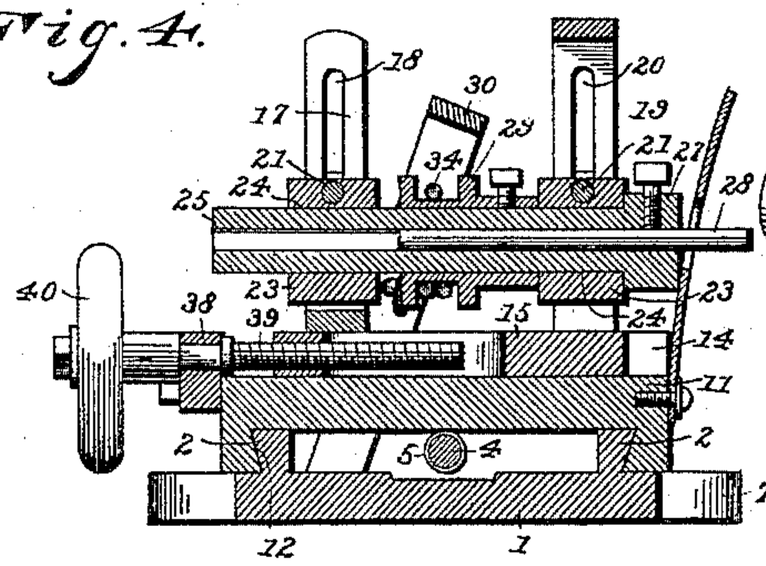


Fig. 7.

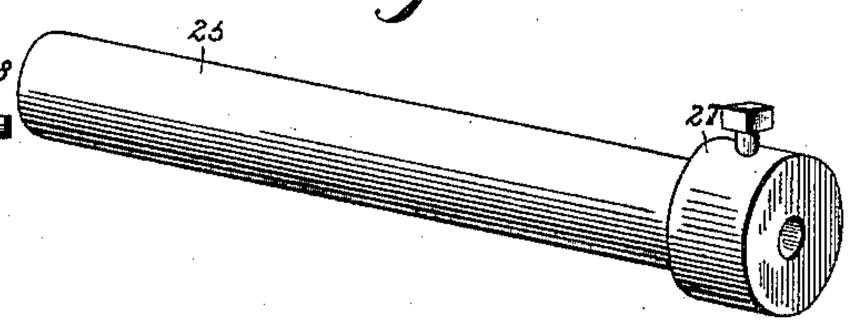


Fig. 5.

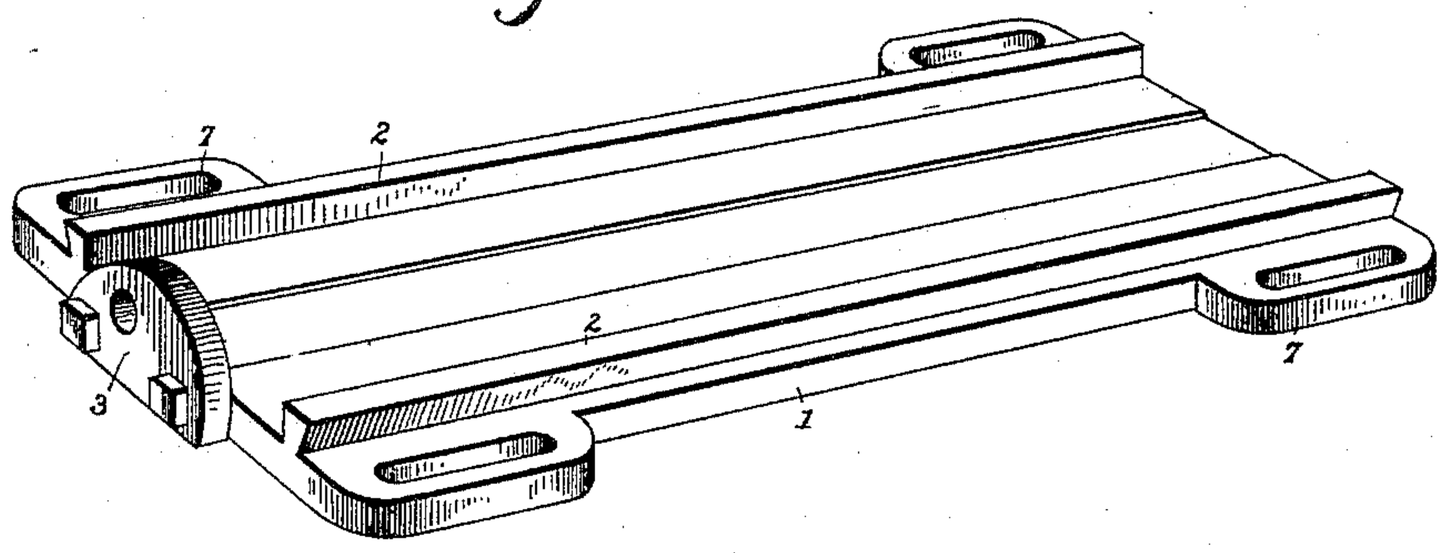
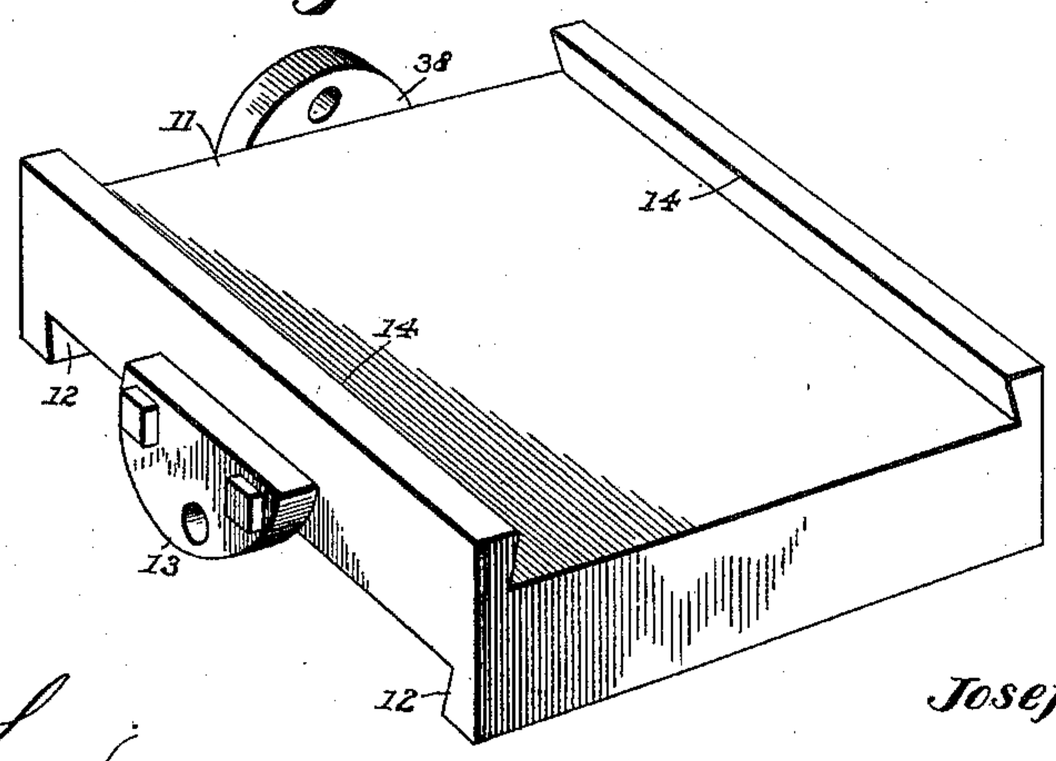


Fig. 6



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH M. HOUSEL, OF MILTON, PENNSYLVANIA.

GRINDSTONE-DRESSER.

SPECIFICATION forming part of Letters Patent No. 456,954, dated August 4, 1891.

Application filed February 26, 1891. Serial No. 382,921. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. HOUSEL, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Grindstone-Dresser, of which the following is a specification.

My invention relates to improvements in devices for trimming, dressing, or truing grindstones and removing therefrom such portions as have become worn by use and liable to injure the stone by remaining.

The objects in view are to produce a cheap and simple machine whereby the above operation may be performed with facility, efficiency, and but little labor.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is an end elevation of my device, the same being in position upon the end of a grindstone-frame. Fig. 2 is a plan in detail of the machine. Fig. 3 is a transverse section. Fig. 4 is a longitudinal section. Fig. 5 is a detail in perspective of the base. Fig. 6 is a similar view of the carriage. Fig. 7 is a similar view of the revolving adjustable chuck.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ a base or bed-plate 1 of substantially oblong shape and provide the same upon its upper side with longitudinally-disposed parallel dovetailed guiding-ribs 2, and at one end of the same, between said ribs, securely bolt a bearing-lug 3, in which I mount for rotation a feed-rod 4, said rod being provided beyond the lug with screw-threads 5. To the outer end of the rod is secured an ordinary handle 6. Beyond the ribs the base 1 is provided with pairs of slotted securing-feet 7, through which adjusting-bolts 8 pass into the frame-work 9 of the grindstone 10, portions of the latter being shown, and by means of the bolt the base, together with the mechanism carried thereby and hereinafter described, may be moved transversely with relation to the stone.

Mounted for reciprocation upon the bed is a carriage 11, provided upon its under side with a groove 12, which embraces the guide-ribs 2 of the base, and the walls of which are dovetailed to conform to the similar shape of the guide-ribs. At one side the carriage is provided with a depending threaded lug 13, securely bolted in position, said lug receiving the threaded rod, whereby the carriage by the rotations of the rod may be fed along upon the guide. The upper side of the carriage is provided with transverse dovetailed ribs 14, and in the same there is mounted for sliding a block 15, the opposite edges of which are beveled to engage with the ribs. Upon the upper side of the block, near the front of the same, there is bolted, as at 16, an inverted-U-shaped bail 17, the opposite sides of which are provided with vertical slots 18. A similar bail 19 is also bolted, as at 20, to the rear upper side of the block, is in alignment with the bail 17, and is likewise provided with vertical slots 20.

In the vertical slots 20 are mounted adjusting-bolts 21, said bolts being regulated at any points along the bails by means of nuts 22, and upon each of the bolts there is loosely hung a yoke 23, having a central bore or bearing 24. A hollow spindle 25 is mounted in the bearings of the yoke, is provided at its front end with a chuck 27, adapted to receive a dressing-tool 28, and between the yoke is provided with a pulley 29, rigid thereon. An inverted-U-shaped frame 30 has its two terminals pivotally connected, as at 31, to the ends of the base 1. An adjustable eyebolt 32 is passed through one of the terminals and may be adjusted by means of a nut 33. A rope 34 is connected to the eyebolt and is passed once around the pulley 29, and has its opposite end connected to the opposite terminals of the frame. This rope is maintained under tension by means of the nut 33 operating upon the screw-eye, which latter, it will be observed, is threaded through an opening 37, formed in the frame 30. The lug 38, having the perforations, is securely bolted to the rear side of the sliding carriage, and a feed-screw 39 passes through the lug and is provided at its outer end with an operating-wheel 40, while its inner end is swiveled in the lug of the carriage.

In operation the drill-tool is set against the

surface of the stone by a manipulation of the above-mentioned wheel 40, and the yokes raised and lowered so as to give the tool a proper pitch, said yokes assuming a relatively-opposite position in accordance with whether or not the machine is employed at the front or rear side of the grindstone. The frame 30, it will be observed, permits of such adjustment and swings in accordance therewith. When this has been accomplished, it simply remains to operate the grindstone and the handle or crank 6 of the dressing-machine, so that the grinding-tool is fed laterally back and forth over the face of the stone, and may be from time to time advanced as the stone is worn away. As the tool is fed across the face of the stone, the rope, passing around the pulley 29, serves to slowly rotate the same, so that the grinding or dressing of the stone is facilitated and the point of contact of the tool is constantly changing and an even wearing of the tool is maintained.

By the employment of a machine thus constructed it will be found that grindstones may readily be rid of any irregularities, flat portions, &c., and thus trued with facility and without much labor.

Having described my invention, what I claim is—

1. In a machine of the class described, the combination, with a base having ways or guides, a rotatable feed-screw, and means for operating the same, of a carriage mounted for movement on the ways and having threads engaging those of the screw and provided with transverse ways disposed at a right angle to those of the base, a block mounted for movement in the ways of the carriage, means for adjusting the same, a spindle rotatably supported upon the block, adapted at its front end to carry a dressing-tool and provided with a fixed pulley, a belt passed around the pulley and having its ends disposed in opposite directions, and devices for securing said ends, substantially as specified.

2. In a machine of the class described, the combination, with the base having the longitudinal ways and a bearing-ear, of a threaded shaft mounted for rotation in the ear and provided with a crank for operating the same, a carriage mounted for reciprocation upon the ways and provided with a depending threaded ear for engaging said shaft and upon its upper side with ways disposed at a right angle to those of the base and at the rear side of the same with a threaded perforated bearing-lug, a block mounted for lateral movement in the ways of the carriage, opposite pairs of standards mounted on the block, a shaft threaded in the bearing-ear of the carriage and swiveled in the rear end of the block thereof, bearing-yokes mounted adjustably between the standards of the blocks, a spindle journaled in the yokes, adapted at its front end to receive a dressing-tool, and also provided with a pulley, a U-shaped frame inverted and pivoted to the opposite sides of the base and provided with opposite perforations, an eyebolt having a set-nut mounted in one of the perforations, a rope connected to the eyebolt, passed around the pulley, and connected at its opposite end to the frame and passed through said perforation therein and knotted, substantially as specified.

3. In a machine of the class described, the combination, with a movable carriage and means for operating the same, of a laterally-movable block, front and rear bails having opposite slots mounted upon the block, transverse bolts adjustably mounted in the slots of the bails, bearing-yokes bored and hung upon the blocks, a spindle passed through the yokes, terminating at its front end in a chuck, and means for rotating the spindle and for feeding the block, substantially as specified.

4. In a machine of the class described, the base, in combination with the carriage sliding longitudinally thereon, a block or head mounted for transverse independent movement on the carriage, a spindle rotatably supported upon the block and provided with a fixed pulley, a cord or belt passed around the pulley and having its ends passed in opposite directions, and a yoke 30, pivoted on the base and having the two ends of the rope or belt attached thereto, substantially as described.

5. In a machine of the class described, the base, in combination with the carriage sliding longitudinally on the base, a block or head mounted for transverse independent movement on the carriage, a spindle rotatably supported upon the block and provided with a fixed pulley, a cord or belt passed around the pulley and having its ends passed in opposite directions, a yoke 30, pivoted on the base and having the two ends of the rope or belt attached thereto, and a tension device at one end of the yoke to receive that end of the rope or belt, substantially as described.

6. In a machine of the class described, the base, in combination with the carriage sliding longitudinally on the base, a block or head mounted for transverse independent movement on the carriage, the two supports 17 and 19, also mounted on the block, the yokes 23, vertically and independently adjustable in each of the supports, the spindle rotatably mounted in the yokes and partaking of the adjustment of the latter, and the chuck 27 on the spindle, adapted to receive a suitable dressing-tool, substantially as described.

7. In a machine of the class described, the base, in combination with the carriage sliding longitudinally on the base, a block or head mounted for transverse independent movement on the carriage, the two supports 17 and 19, also mounted on the block, the yokes 23, vertically and independently adjustable in each of the supports, the spindle rotatably mounted in the yokes and partaking of the adjustment of the latter, the chuck 27 on the spindle adapted to receive a

a suitable dressing-tool, a fixed pulley 29, mounted on the spindle between the supports, a rope or belt wound on the pulley, and a yoke 30, pivoted on the base and having the ends of the rope or belt connected thereto, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOSEPH M. HOUSEL.

Witnesses:
JOS. ANGSTADT,
H. F. BELLMEYER.