

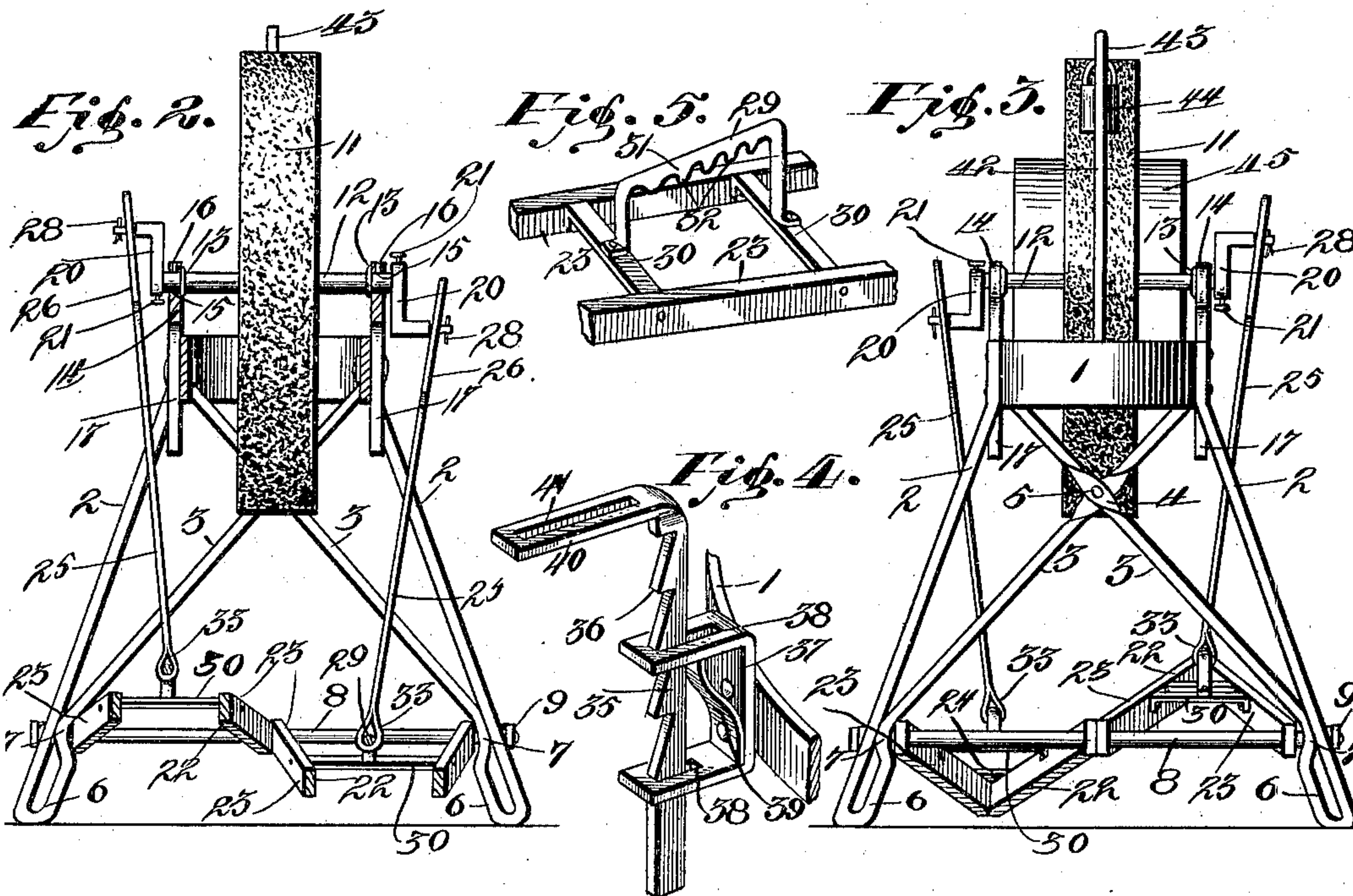
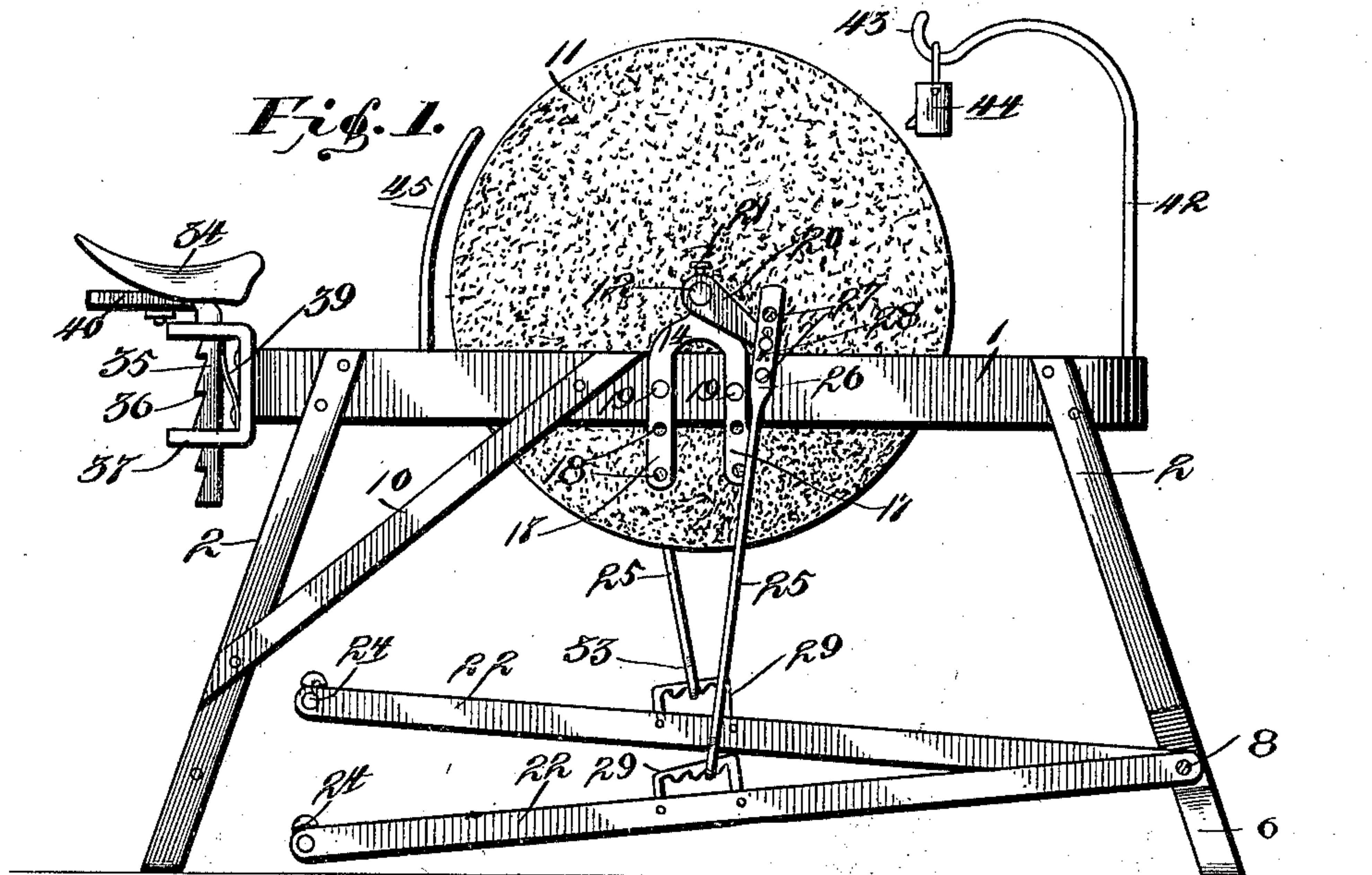
No. 628,715.

Patented July 11, 1899.

G. W. JONES.
GRINDSTONE.

(Application filed Apr. 7, 1899.)

(No Model.)



Witnesses

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By his Attorneys.

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UNITED STATES PATENT OFFICE.

GEORGE W. JONES, OF DUNLAP, IOWA.

GRINDSTONE.

SPECIFICATION forming part of Letters Patent No. 628,715, dated July 11, 1899.

Application filed April 7, 1899. Serial No. 712,080. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. JONES, a citizen of the United States, residing at Dunlap, in the county of Harrison and State of Iowa, have invented a new and useful Grindstone, of which the following is a specification.

This invention relates to grindstones, and has for its object to provide an improved frame for supporting the stone, also means for adjusting the operation of the device, and a convenient seat for the operator.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the device. Fig. 2 is a transverse vertical sectional view taken centrally through the grindstone-shaft. Fig. 3 is an end view of the frame, illustrating the manner of forming and mounting the legs. Fig. 4 is an enlarged detail perspective of the seat-post and its adjustable connection with the frame. Fig. 5 is a detail perspective view of one of the adjustable connections between the operating-rods and the pedals.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates the body of the frame, which is substantially rectangular in form and made of a flat metallic strip. At the four corners of the frame are provided legs 2 and braces 3, which are best illustrated in Fig. 3. The respective legs and braces are formed from a single length of flat metal bent intermediate of its ends to provide the leg 2 and the brace 3. The upper end of each leg is fitted against the outer face of the respective side of the frame, and its brace extends diagonally upward and has its upper end fitted against the inner face of the opposite side of the frame directly opposite the upper end of the other leg, and the legs and braces are bolted or riveted through the sides of the frame, as shown. Near their upper ends at the point of crossing the braces are twisted, so as to bring a portion of their flat faces to-

gether, as at 4, and a rivet or bolt 5 is passed centrally therethrough to connect the braces together at their point of crossing. It will be noted that the bend 6 between the leg and the brace forms the foot of the leg, and the brace portion of the bend is deflected outward toward and against the leg, as at 7. A transverse rod 8 has its opposite ends passing through the portions 7 of the braces and the legs, respectively, and is provided with suitable nuts 9, whereby the legs are held spread apart, and the braces are positively held against the lower ends of the legs immediately above the bend which forms the foot. Each end of the frame is provided with legs in the same manner, and the rear end thereof is further provided with a brace 10, one upon each side and extending diagonally upward from the respective legs 2 to the sides of the frame.

The grindstone 11 is located within the frame and is provided with a shaft 12, having near its opposite projecting end the integral annular collars 13, forming stop-shoulders to hold the stone centrally between the sides of the frame. Bearings 14 are provided for the opposite ends of the shaft, each bearing having an eye or opening 15 provided therein and adapted to receive one end of the shaft. Through the upper wall of the opening is provided an oil-passage 16, as indicated in Fig. 2, whereby the shaft may be lubricated in its bearing. Each bearing is provided with a pair of laterally-spaced downwardly-extending attaching-straps 17, having a plurality of openings 18 formed therethrough, which are adapted to receive suitable fastenings 19, whereby the bearings may be adjusted vertically to raise the stone as it becomes worn. It will be understood by reference to Fig. 2 that the fixed or integral collars 13 on the shaft are adapted to engage the inner faces of the bearings 14, whereby the grindstone is held centrally between the sides of the frame. Removable cranks 20 are fitted to the opposite ends of the shaft 12 and held thereon by suitable set-screws 21.

The means for operating the crank-shaft to turn the grindstone comprises a pair of treadles 22, pivoted or hinged to the transverse bar 8. Each of these treadles comprises opposite longitudinal side bars 23, pivoted

to the bar 8 and convergent therefrom. It will be noted by reference to Fig. 2 that the forward ends of the side bars are spread apart, and the respective inner bars are contiguous at their pivotal ends, so as to prevent lateral movement of the treadles and hold them in place. At the opposite convergent ends of the treadles are provided suitable pedals 24, whereby the treadles may be operated. The crank-shaft is driven from the treadles by means of connecting or drive rods 25. Each of these rods is flattened at its upper end, as at 26, and provided with a plurality of openings 27, adapted to receive the respective end of one of the cranks 20. A suitable spring or split key 28 is adapted to be placed in an opening formed through the crank outside of the connecting-rod to hold the same upon the crank. The connection between the lower ends of the rods 25 and the respective treadles consists of a yoked bracket 29, carried by the treadle. This bracket is substantially of an inverted-V shape and is supported longitudinally between the sides of the treadle upon transverse bars 30, connected to said sides and spanning the space therebetween. One side 31 of the bracket is longer than the other, is inclined forward and upward, and is provided upon its under side with teeth or notches 32. The lower ends of the drive-rods are each provided with a loop or stirrup 33, which is adapted to embrace the long side of the bracket and engage the respective teeth or notches 32, whereby the rods are connected to the treadles and may be adjusted vertically thereon.

It will be understood that as the grindstone becomes worn by use it is desirable to raise the same, so that the stone may be in a convenient position for use, and thus the adjustable bearings have been provided. It is also essential that the throw of the treadles may also be adjusted in relation to the amount of elevation of the crank-shaft, and thus the adjustable connections at opposite ends of the drive-rods have been provided.

In order that the grindstone may be readily operated, a seat 34 is provided upon the rear end of the frame, upon which the operator may sit in convenient reach of the pedals and of the grindstone. The seat is provided with an inverted-L-shaped seat-post 35, having shouldered notches 36 provided therein. Secured to the rear end of the frame 1 is an approximately U-shaped bracket 37, having vertically-alined openings 38 formed there-through. The notched or toothed standard of the seat-post is adapted to be placed in the alined openings of the bracket, having its respective shoulders engaging the upper face of the upper arm only of the bracket, whereby the seat-post may be held as adjusted. The slot or opening 38 in the upper arm of the bracket 37 is long enough to permit of a lateral movement of the seat-post to disengage the same from the bracket, and the

lower slot is just large enough to permit of an easy sliding movement of the seat-post. A suitable leaf-spring 39 is secured to the bracket, between the arms thereof, and adapted to have its free end bear against the smooth side of the seat-post standard and hold the shoulder thereof in engagement with the upper arm of the bracket to prevent accidental displacement of the seat-post. The horizontal heel portion 40 of the seat-post is provided with a longitudinal slot 41, in which the fastening of the seat is adapted to be arranged, and thereby provide for a longitudinal adjustment of the seat.

Projecting upward from the forward end of the frame is an L-shaped arm 42, having a hook 43 situated over the grindstone and adapted to support a water-can 44, whereby the stone may be supplied with water, as is usual.

Secured to the frame and transversely thereof, intermediate of the seat and the grindstone, is a water-shield 45, extending a suitable distance above the frame, to prevent the water from being thrown from the revolving stone upon the operator who may be seated upon the seat 34.

The construction and arrangement of the several parts of the present invention provide a simple and improved manner of mounting and operating a grindstone. The frame and the operating parts are constructed of iron, and therefore insure a strong and durable structure.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed is—

1. In a device of the class described, the combination with a frame and a grindstone having a crank-shaft, of adjustable bearings for the crank-shaft, an operating-treadle, a drive or connecting rod between the crank-shaft and the treadle, and an adjustable connection between the rod and the treadle, substantially as shown and described.

2. In a device of the class described, the combination with a frame and a grindstone having a crank-shaft, of a treadle carried by the frame, a drive or connecting rod between the crank-shaft and the treadle, and an inclined yoked bracket provided upon the treadle, the drive-rod having an adjustable connection with the inclined portion of the bracket, substantially as shown and described.

3. In a device of the class described, the combination with a frame and a grindstone having a crank-shaft, of a treadle carried by the frame, an inclined yoked bracket provided upon the treadle and having the under side of its inclined portion toothed or notched, and a drive or connecting rod between the

crank-shaft and the treadle, and having a stirrup or loop at its lower end, said stirrup or loop being adapted to embrace the inclined portion of the bracket and engage the teeth or notches thereof, whereby the throw of the treadle may be adjusted, substantially as shown and described.

4. In a device of the class described, the combination with a frame, a grindstone and treadles for operating the stone, of a seat having a notched or toothed seat-post, an approximately U-shaped bracket having vertically-alined openings provided in its arms and secured to the frame, the seat-post being arranged in the alined openings of the bracket and the shoulders of the notches or teeth being adapted to engage one of the arms of the bracket and adjustably support the seat-post, and a spring carried by the bracket and adapted to bear against the seat-post and hold the same against accidental disengagement with the bracket, substantially as shown and described.

5. In a device of the class described, the combination with a frame and a grindstone having a crank-shaft, of adjustable bearings therefor, each bearing comprising a body having a bearing eye or opening at its upper end, and spaced downwardly-extending attaching-straps provided with a plurality of openings, and fastenings adapted to engage the respec-

tive openings, whereby the bearings may be adjustably connected to the sides of the frame, substantially as shown and described.

6. In a device of the class described, the combination with a grindstone, of a frame having supporting-legs, each of the latter being formed from a single length of metal bent intermediate of its ends forming a leg-standard, and an upwardly-inclined brace, the upper ends of the leg-standard and the brace therefor being connected to opposite sides of the frame, and the intermediate bend forming a foot, a portion of the brace being deflected against the inner side of the leg-standard immediately above the intermediate bend, and a transverse rod having its opposite ends extending through the deflected portions of adjacent braces and also through opposite leg-standards, treadles hinged or pivoted to said rod intermediate of the adjacent leg-standards, and drive connections between the treadles and the grindstone, substantially as shown and described.

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

GEORGE W. JONES.

Witnesses:

H. M. LANTZ,
MARION MORTON.