

No. 693,593.

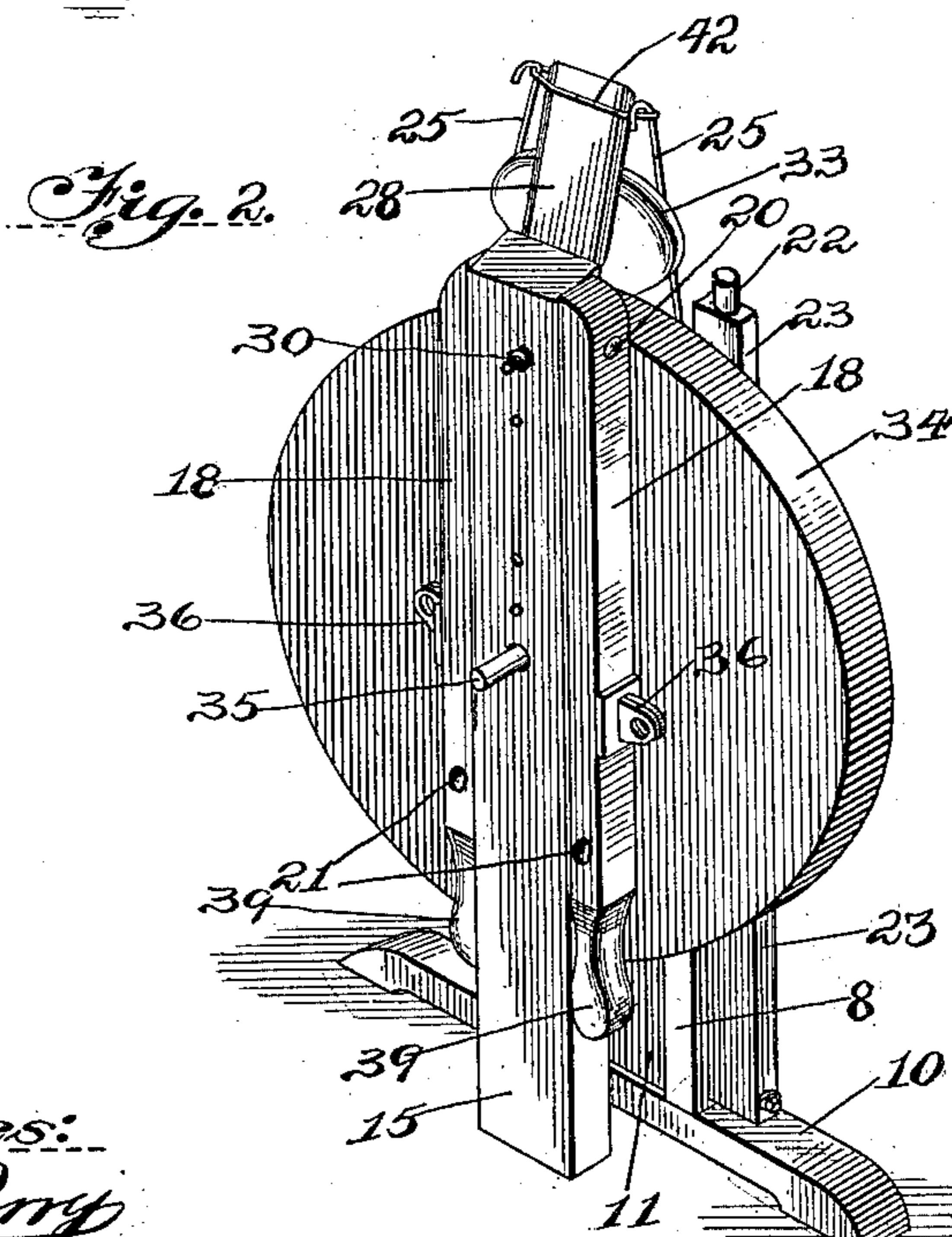
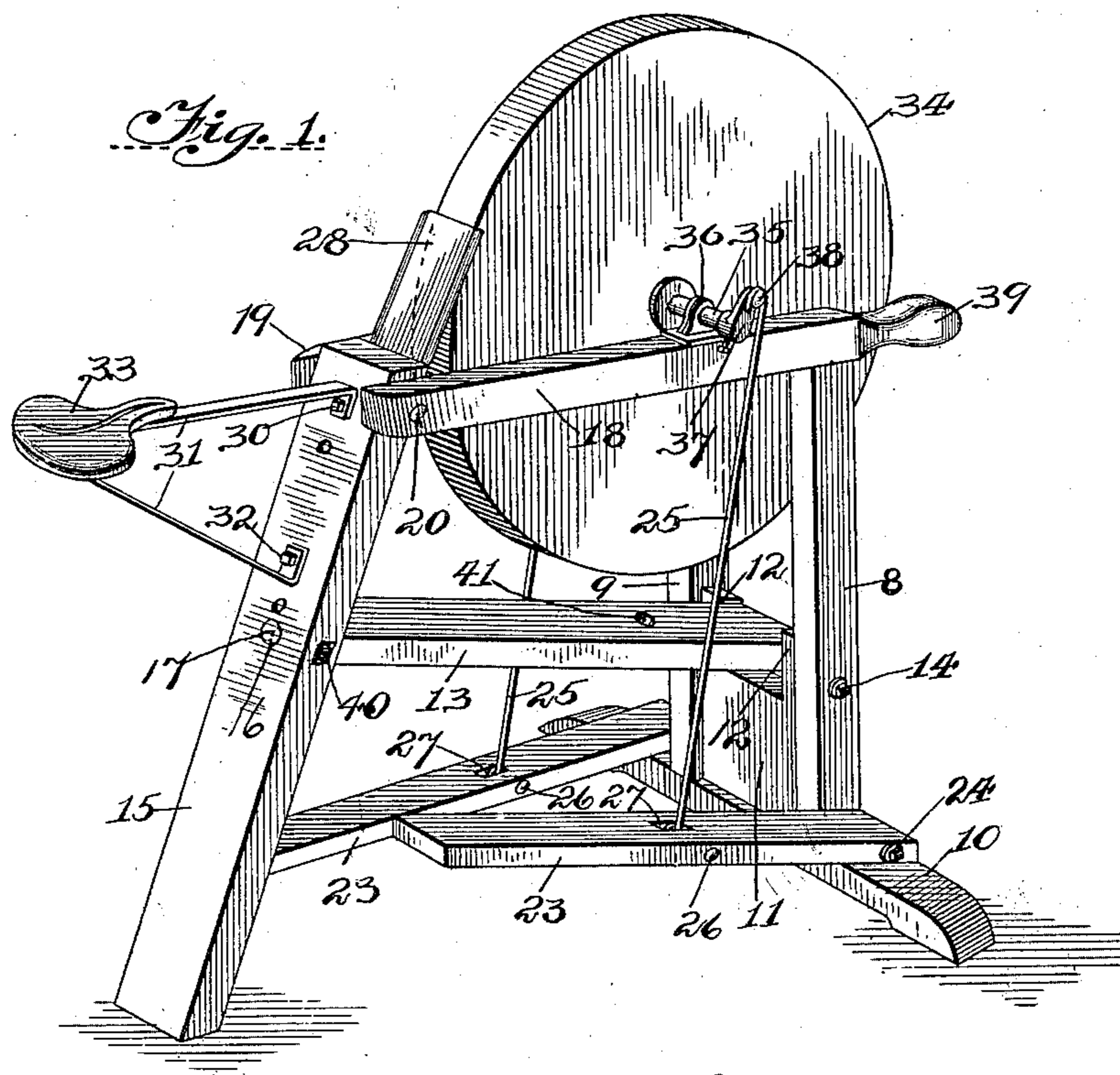
Patented Feb. 18, 1902.

C. H. FERGUSON.  
PORTABLE GRINDSTONE.

(Application filed Oct. 3, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
*Geo D. Perry*  
*J. B. Weir*

Inventor:  
*Charles H. Ferguson*  
*By [Signature] Attorney*

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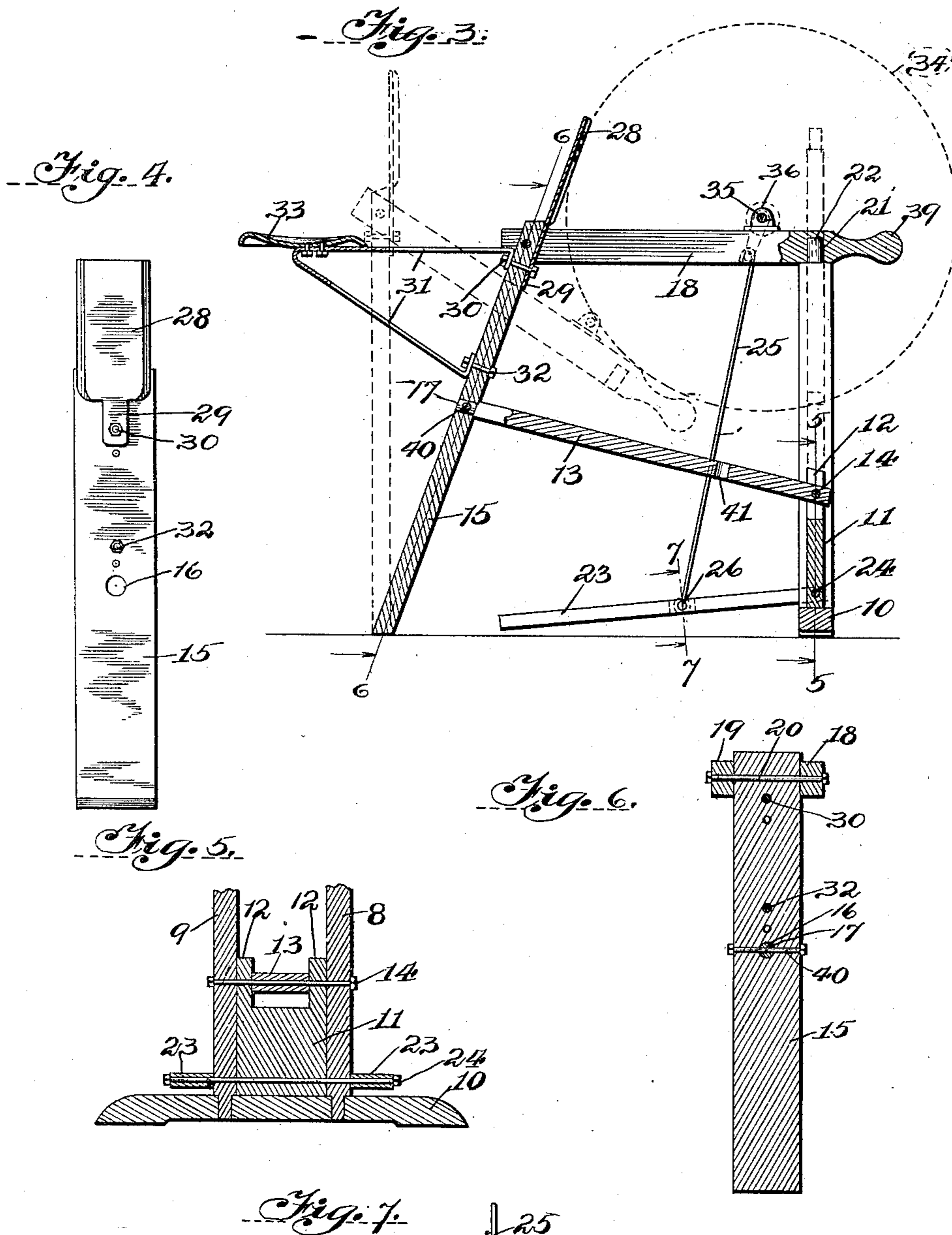
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Witnesses:  
A. D. Perry  
B. Meir

Inventor:  
Charles H. Ferguson.  
By Bond Stuenkel and Jackson  
Attys.

# UNITED STATES PATENT OFFICE.

CHARLES H. FERGUSON, OF CHICAGO, ILLINOIS.

## PORTABLE GRINDSTONE.

SPECIFICATION forming part of Letters Patent No. 693,593, dated February 18, 1902.

Application filed October 3, 1901. Serial No. 77,410. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. FERGUSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Portable Grindstones, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to portable grindstones, and particularly to a new and improved supporting-frame therefor; and it has for its objects to provide a cheap and strong frame from which the grindstone can be readily removed and as readily replaced in position without the necessity of lifting such stone over either one of the side bars of the frame, to provide a construction whereby after the stone has been removed the frame can be quickly  
15 "knocked down" and folded into a compact condition for storage or shipment and when shipped can be used as a crate to inclose and protect the grindstone, and to improve generally the construction and arrangement of  
20 the parts; and to these ends my invention consists in the parts and combinations of parts shown in the drawings and hereinafter specifically described.

That which I regard as new will be set forth  
30 in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved frame with a grindstone in position therein. Fig. 2 is a perspective view of my said frame in a  
35 "knockdown" position and arranged as a crate with the grindstone held therein. Fig. 3 is a longitudinal vertical section through the frame, the position of a grindstone thereon being shown in dotted lines and the parts as  
40 disconnected from each other being also shown in dotted lines. Fig. 4 is a view of the inner face of the rear standard, to the upper end of which the water-guard is attached. Fig. 5 is a vertical section at line 5 5 of Fig. 3. Fig. 6 is a longitudinal section through the rear standard on line 6 6 of Fig. 3, and Fig. 7  
45 is a section on line 7 7 of Fig. 3.

Referring to the several figures of the drawings, 8 9 indicate two supporting-standards at  
50 the front of the machine, said standards being spaced a distance apart and being secured in the form of construction shown at their

lower ends to a transverse base-strip 10. Between the standards 8 9 at their lower ends is a block 11, the lower end of which bears upon  
55 the upper face of the base-strip 10. The central portion of the upper face of the block 11 is cut away, leaving at each side an ear 12, between which ears is pivotally secured one end of a brace 13, the pivot for such brace being  
60 indicated by 14 and consisting of a long bolt passing through the standards 8 9, the ears 12, and the brace 13 and held in place by a nut on one end thereof.

15 indicates a standard at the rear end of  
65 the machine, which, as shown, is preferably inclined to provide a more effective bracing and also to locate the operator, whose seat is attached to this standard, in better position in relation to the operating-treadles and the  
70 stone, so that he may work more effectively. This standard has extending through it an opening 16, into which is adapted to snugly fit a tenon 17 on the rear end of the brace 13. Through the standard 15, from side to side  
75 thereof, passes a bolt 40, which also passes through the tenon 17, thus holding the brace 13 firmly united to the standard 15.

18 19 indicate a pair of side bars, each pivoted at their rear ends by a bolt 20 to one of  
80 the sides of the standard 15, near the upper end thereof. On the under face of each side bar and near its forward end is an opening 21, adapted to receive a tenon 22, formed on the  
85 upper end of each of the front standards 8 9, the said side bars 18 19 lying horizontally when the parts are in position.

23 indicates a pair of treadles, one being pivoted at each side of the machine and in the form of construction shown being secured  
90 in place by a single bolt 24, passing through them and through the standards 8 9 and block 11, and held by a suitable nut.

25 indicates a pair of pitman-rods, each loosely attached to one of the pair of treadles  
95 23 by a bolt 26, passing through the treadles and through an eye in the lower end of the pitman-rod, such lower end projecting into an opening 27, extending through each treadle.

28 indicates a water-guard formed of a piece  
100 of sheet metal and having its sides turned inward slightly toward the front of the frame, the guard having formed with it at the central portion of its lower end a tongue-piece

29, through which and through the rear standard 15 passes a bolt 30, by which the water-guard is secured in place.

39 indicates an angular-shaped bracket adapted to be secured upon the outer face of the rear standard 15 by the bolt 30, already mentioned, and another similar bolt 32, said bracket having adjustably mounted thereon an operator's seat 33.

34 indicates an ordinary grindstone provided with a shaft 35, that is supported in a pair of suitable bearing-blocks 36, said bearing-blocks being adapted to be secured by screws or otherwise to the upper faces of the side bars 18. Each end of the shaft 35 is provided with a crank 37 to a crank-pin 38, on the face of which one of the pitman-rods 25 is adapted to be removably secured by means of a hook formed on the upper end of such rod. As shown, the forward end of each side piece 18 is fashioned into the form of a handle in order to furnish means whereby a person can obtain an effective hold when it is desired to lift the machine.

In use and with the parts assembled as shown in Fig. 1 the operator upon the seat 33 will bear with his feet upon the treadles 23, moving them in the usual manner.

If desired, the rear standard 15 may be provided with a series of holes, so that the seat-bracket 31 may be adjusted vertically, and the seat may also be adjusted horizontally upon the bracket, so as to adapt the machine for use by different persons.

There being no cross-piece between the side bars 18 near their forward ends, as is usually the case in wooden frames for grindstones, it is comparatively easy to place a grindstone in position on such side bars, as it of course is not necessary to raise the stone over one of the side bars.

To adjust the water-guard so as to adapt it for use with stones of different sizes, it is not necessary in the construction shown to loosen any bolt or bolts, as is ordinarily the case; but on account of such guard being made of a single piece of plate or sheet metal it can be bent sufficiently at its small tongue portion above the retaining-bolt 30, so as to bring the body of the guard into the desired position.

To disconnect the parts of the frame sufficiently to utilize them as a shipping-crate for the stone, the pitman-rods 25 are to be unhooked from the crank-pins 38, and the bearings 36 are to be unscrewed from the side bars 18 19, whereupon the stone can be lifted out through the open forward end of the frame. The side bars 18 19 are to be raised out of connection with the front standards 8 9, and upon withdrawing the bolt 40 the brace 13 can be disconnected from said standard 15 by withdrawing the tenon 17 from the opening 16, allowing such brace to be swung on its pivot-bolt 14 parallel with the front standards 8 9. The treadles 23 are also to be turned on their pivot-bolt 24, so as to be par-

allel with the standards 8 9, and the side bars 18 19 turned on their pivot 20, so as to lie parallel with the rear standard 15. The front standards, with their attached parts, are to be placed at one side of the grindstone and the rear standard, with its attached parts, at the other side, the axle 35 at one side of the stone entering the opening 16 in the rear standard 15 and the other end of the axle entering an opening 41, formed in the brace 13, such opening 41 being so located as to come opposite the opening 16 when the frame is used as a crate. Before arranging the stone in this manner the bearings 36 and cranks 37 are to be removed and fastened securely in place to some portion of the frame by wiring or otherwise, or the bearings may be secured in position on the side bars, as illustrated in Fig. 2. When the parts are in the position described for shipment, the pitman-rods 25 will project up above the stone to about opposite the upper end of the inclined water-guard 28 and may be secured in position by a wire or cord 42, passed around such water-guard and the upper hooked ends of said pitman-rods. As the seat and its bracket will project considerably, it is advisable to remove them, which can be readily done, and tie or wire them to the parts, a good location being between the pitman-rods and the water-guard, as shown in Fig. 2.

When the parts are arranged as shown in Fig. 2, they may be easily wired together, and when so wired the stone will be amply protected for shipping purposes and the devices as a whole occupy but comparatively little space and can be readily and quickly put together again, even by inexperienced hands, as will be readily understood.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. A collapsible frame comprising a standard at one end and a pair of standards at the opposite end, a pair of side bars each pivotally secured at one end and removably secured at the other end, said side bars being supported upon said standards, and a brace pivotally secured at one end and detachably secured at its opposite end and extending between the oppositely-located end standards, substantially as specified.

2. A collapsible frame comprising a rear standard, a pair of front standards, a pair of side bars pivoted upon opposite sides of said rear standard and bearing near their other ends upon the upper ends of said front standards and detachably connected to said front standards, and a brace pivotally secured at one end between the pair of standards and removably secured at the other end to the rear standard, substantially as specified.

3. In a collapsible supporting-frame, the combination with a rear standard, of a pair of front standards, a pair of side bars extending from the upper end of said rear standard to the upper ends of the front standards, said side bars being pivotally connected in place

at one end and detachably connected in place at the other end, a block between said pair of standards, and a brace pivotally secured at the upper end of said block and removably secured at its other end to the opposite standard, substantially as specified.

4. In a collapsible supporting-frame, the combination with a rear standard, of a pair of front standards, a pair of side bars extending from the rear standard to the front standards, said side bars being pivotally connected to the rear standard and removably connected to the front standards, a brace pivotally connected at one end between the front standards and removably connected at its other end to the rear standard, a treadle pivoted at the side of one of the forward standards, a pitman connected therewith, and a shaft suitably supported and provided with a crank to which the pitman is adapted to be connected, substantially as specified.

5. In a collapsible supporting-frame for a grindstone, the combination with front and rear standards, of a pair of bars connecting the front and rear standards and adapted to have a grindstone revolvably mounted thereon, and being also adapted to be disconnected from one end of the frame and turned to lie parallel with the opposite end, a brace connecting the front and rear standards and adapted to be disconnected from one end of the frame and turned to lie parallel with the opposite end, and means for supporting a grindstone for shipping or storing purposes between the said front and rear standards and their attached parts when the frame is in a collapsed condition, substantially as specified.

6. In a collapsible supporting-frame for a grindstone, the combination with a pair of front standards and a rear standard, of a pair of side bars pivotally attached to the rear standard and removably connected to the pair of front standards, and a brace pivotally secured in place at one end between the pair of front standards and having its other end provided with a tenon adapted to pass through an opening in the rear standard, and having an opening between its ends adapted to receive one end of a grindstone-shaft, whereby a crate may be formed for a grindstone by placing the said front and rear standards and their attached parts, when the frame is in a

collapsed condition, on opposite sides of a grindstone and the grindstone-shaft supported by passing its ends through the openings in the rear standard and the brace, substantially as specified.

7. A collapsible frame comprising a rear standard, a pair of front standards, means for connecting said standards together at their upper ends, and a brace pivotally secured at one end between the pair of standards and removably secured at its other end to the rear standard, substantially as specified.

8. A collapsible frame comprising a rear standard, a pair of front standards, means for connecting the said standards together at their upper ends, and a brace extending between said standard and pair of standards and pivoted in place at one end between said pair of standards, and provided on its opposite end with a tenon adapted to enter an opening in said rear standard, substantially as specified.

9. In a grindstone-frame, the combination of a water-guard having formed therewith at its lower end a narrow tongue, a support against which the rear face of such tongue is adapted to rest, and a bolt passing through such tongue and into said support, whereby said guard can be adjusted by bending said tongue, substantially as specified.

10. In a collapsible supporting-frame for a grindstone, the combination with front and rear standards, of grindstone-supporting bars connecting said front and rear standards, said bars being removably secured in place, a brace also removably secured in place and extending between and connected to said front and rear standards, said brace provided with an opening, and one of said standards provided with an opening, each of said openings adapted to receive one end of a grindstone-shaft whereby a crate may be formed for the grindstone by placing said standards when the frame is in a collapsed condition on opposite sides of the grindstone and the grindstone-shaft inserted through the said openings, substantially as specified.

CHARLES H. FERGUSON.

Witnesses:

JULIA M. BRISTOL,  
ALVY L. ROMME.