

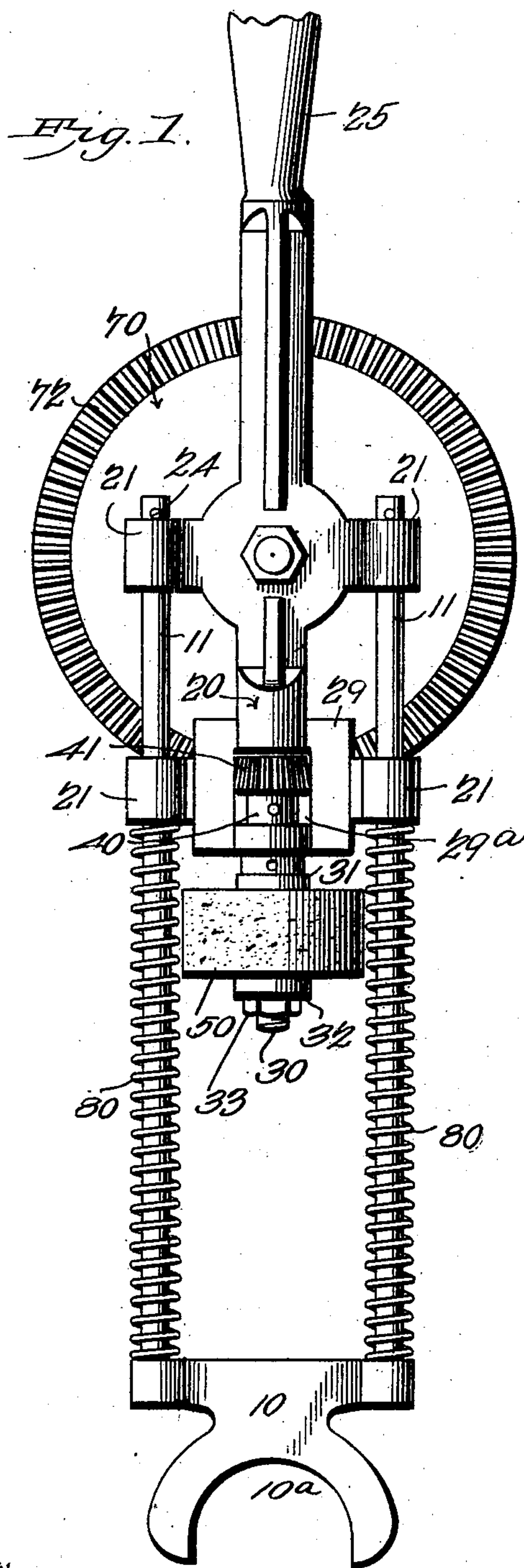
No. 711,865.

Patented Oct. 21, 1902.

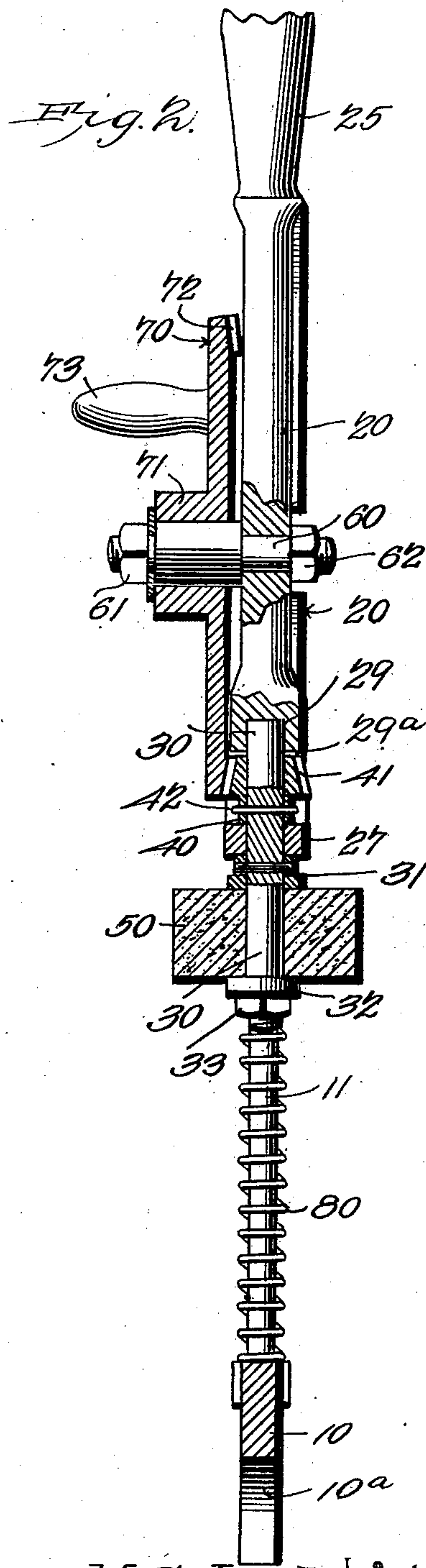
H. C. JACOBS,  
MACHINE FOR SHARPENING BAND CUTTER KNIVES.

(Application filed Jan. 23, 1902.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

HENRY C. JACOBS, OF BURLINGTON, IOWA.

## MACHINE FOR SHARPENING BAND-CUTTER KNIVES.

SPECIFICATION forming part of Letters Patent No. 711,865, dated October 21, 1902.

Application filed January 23, 1902. Serial No. 90,978. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. JACOBS, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented a new and useful Machine for Sharpening Band-Cutter Knives, of which the following is a specification.

My invention is an improved machine for sharpening band-cutter knives and for analogous uses; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

The object of my invention is to provide a simple and efficient machine which is adapted to be operated manually for sharpening the knives of the band-cutters of threshing-machines and for other purposes and in which the revoluble grinding stone or wheel is also axially movable, so that the same may be moved endwise on a blade while being rotated to sharpen the same.

In the accompanying drawings, Figure 1 is a side elevation of a band-cutter-knife sharpener constructed in accordance with my invention. Fig. 2 is a longitudinal central sectional view of the same.

In the embodiment of my invention I provide a bearing-base 10, which is preferably of the form here shown and has a semicircular opening 10<sup>a</sup> on its outer side adapted to be fitted against a shaft or arm that carries a band-cutting knife. A pair of parallel guide-rods 11 are secured to the said bearing-base 10 and are of suitable length. An axially-movable frame 20, which is preferably a single casting, is provided on opposite sides with projecting arms 21, which are bored to receive the guide-rods 11, and on which guide-rods the said axially-movable frame is adapted to be operated. Coiled extensile springs 80 are placed on the said guide-rods and bear between the bearing-base and the axially-movable frame 20. The said springs normally move said axially-movable frame outwardly from the bearing-base 10. Said frame 20 is formed or provided with an outwardly-extending arm, the end of which is formed into or provided with a handle 25, which is adapted to be engaged by the left hand of the operator.

A shaft 30, which is midway between and parallel with the guide-rods 11, has its bearings

in the axially-movable frame 20, as at 27 29. There is an opening 29<sup>a</sup> in the said frame near the inner end thereof, through which the said shaft extends, and on the latter in the said opening is a beveled pinion 41, which is here shown as secured to the shaft 30 by a pin 42, which passes transversely through said shaft and the hub of said pinion. A collar 31 is placed on the shaft and secured thereto by a pin, as here shown, or by any other suitable means, and the said collar bears against the inner side of the axially-movable frame. I designate that side of the axially-movable frame which is nearest the bearing-base 10 as the "inner" side. It will be understood that the pinion 41 and collar 31 prevent independent axial movement of the shaft 30 in the frame 20, but that said shaft is free to revolve in the bearings 27 29, with which said frame is provided.

On the projecting end of the shaft 30 is secured a revoluble grinding-tool 50, which is here shown as a stone or emery-wheel. The same is secured on the projecting end of the shaft by a nut 33 and washer 32, the stone or wheel being clamped between the ring 31 and said washer, and hence caused to rotate with the said shaft.

A stub-shaft 60, which is here shown as a bolt, is secured to the axially-movable frame 20 at a point in line with the axis of the shaft 30 and midway between the outer arms 21 of said axially-movable frame. On the said shaft is journaled the hub 71 of a gear-wheel 70, which gear-wheel is provided with crown-teeth 72, that engage the beveled pinion 41. The said gear-wheel 70 has on its outer side a crank-handle 73, by means of which the operator may rotate said gear-wheel, and hence impart rotary motion to the grinding-wheel or stone.

In the operation of my invention the bearing-base 10 is placed against the shaft or arm that carries the band-cutting knife or other blade to be sharpened, and the machine is so adjusted as to cause the guide-rods 11 to lie parallel with the blade or knife, with the stone or wheel 50 bearing against one side thereof. By means of the crank-handle 73 the gear-wheel 70 is rotated, as hereinbefore described, to rotate the grinding stone or wheel, and at the same time the operator by pressing against



the handle 27 moves the frame 20, which carries the revolving stone or wheel axially, so that the said stone or wheel moves endwise of the blade or knife while grinding the edge thereof. The operator by manual power moves the axially-movable frame 20 in one direction against the tension of the springs 80, which serve to steady the movement of the said frame, and by relaxing his pressure the operator can cause the springs 80 to move the frame 20 outwardly on the guide-bars 11.

It will be understood that by means of my improved grinding-machine band-cutting knives and other blades may be readily sharpened without the necessity of removing the same from the arms or shafts which carry them. The outward movement of the axially-movable frame 20, as will be understood, is limited by stop-pins 24 near the outer ends of the guide-rods.

Having thus described my invention, I claim—

1. A grinding-machine of the class described, comprising a bearing-base having guides extending outwardly therefrom, an axially-movable frame engaged by and movable on said guides, said frame having a handle by means of which it may be moved on the guides, a revoluble grinding-tool carried by said frame, and means to rotate said grinding-tool, substantially as described.

2. A grinding-machine of the class described, comprising a bearing-base, an axially-movable frame carried thereby, a spring to move the said frame in one direction and a handle whereby it may be moved in the reverse direction, against the tension of the spring, a revoluble tool-carrying element, carried by said axially-movable frame, and means to rotate said tool-carrying element, substantially as described.

3. In a grinding-machine of the class described, the combination of a bearing or supporting frame, an axially-movable frame carried thereby and having a handle whereby it may be operated, a revoluble grinding-tool carried by said axially-movable frame and gears to rotate said grinding-tool, said gears being carried by said axially-movable frame, and one of said gears having a crank whereby it may be rotated, substantially as described.

4. In a grinding-machine of the class described, the combination of a bearing-base having guide-bars, an axially-movable frame engaging and movable on said guide-bars, springs to move said frame outwardly from the bearing-base, means whereby said frame may be moved toward said bearing-base, against the tension of said springs, a revoluble grinding-tool carried by said axially-movable frame and means to rotate said grinding-tool, substantially as described.

5. The combination of a bearing-frame, an axially-movable frame carried thereby and having a handle, a revoluble tool-carrying element carried by said axially-movable frame, gears to revolve said tool-carrying element, and means to actuate said gears, substantially as described.

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

HENRY C. JACOBS.

Witnesses:

FRANK D. THOMAS,  
W. PENROSE.