March 6, 1945. W. KRIEGER 2,370,864

ABRADING AND POLISHING DEVICE

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Fig. 1.

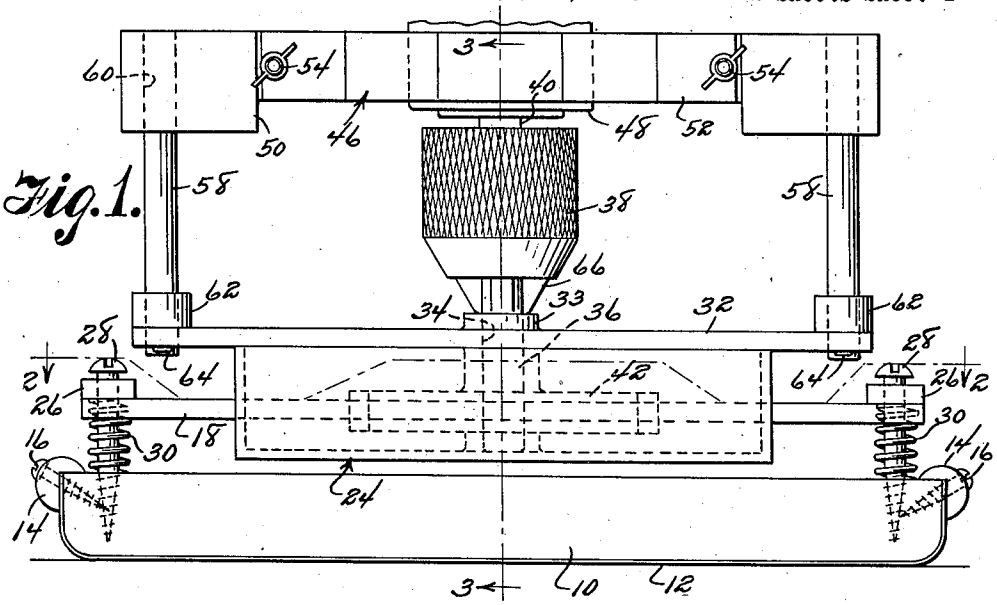
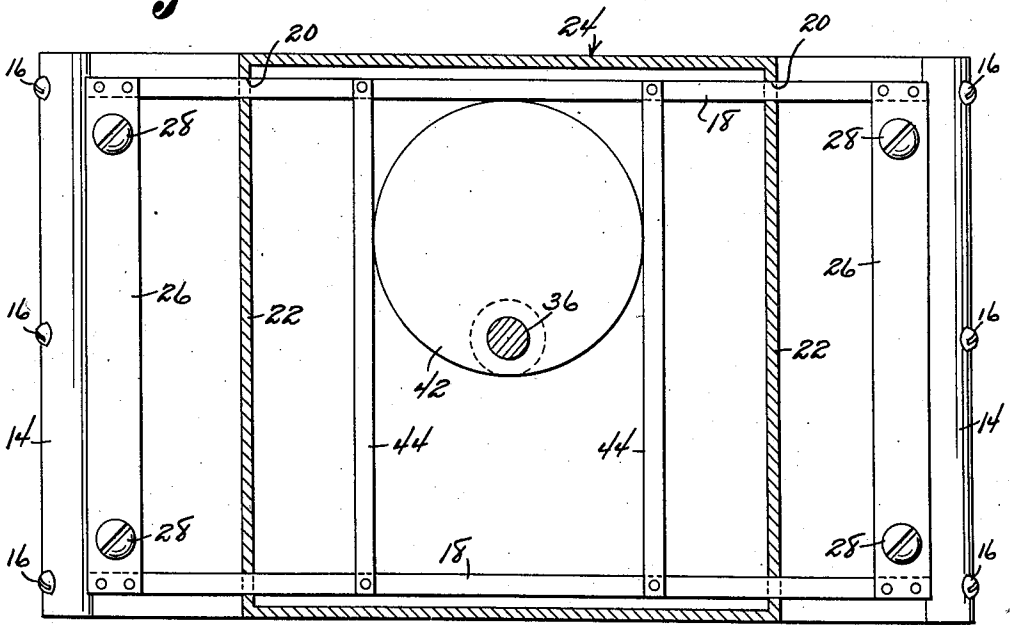


Fig. 2.



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Fig. 3.

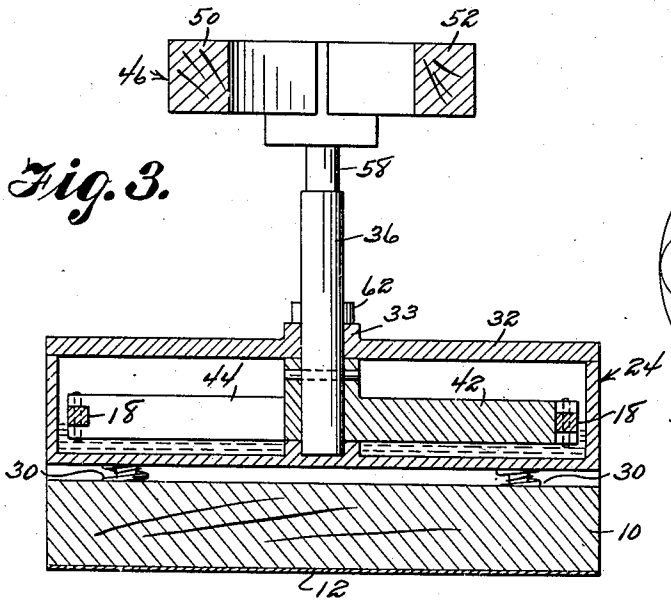


Fig. 6.

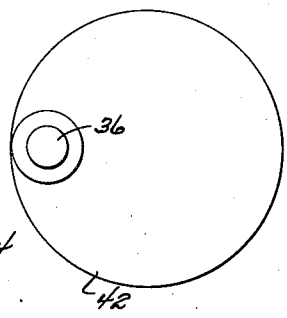


Fig. 4.

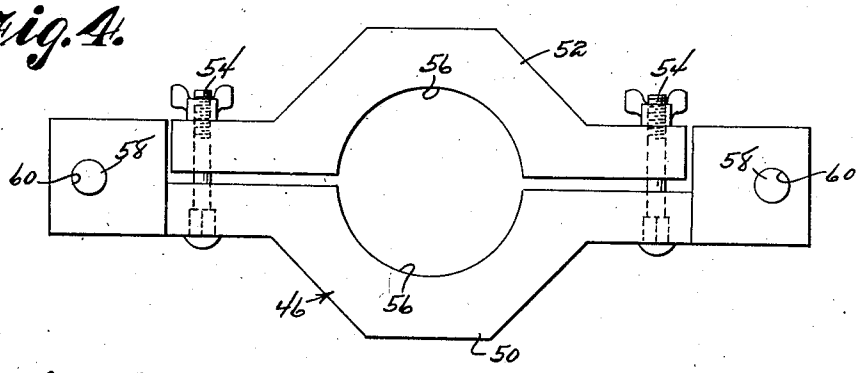
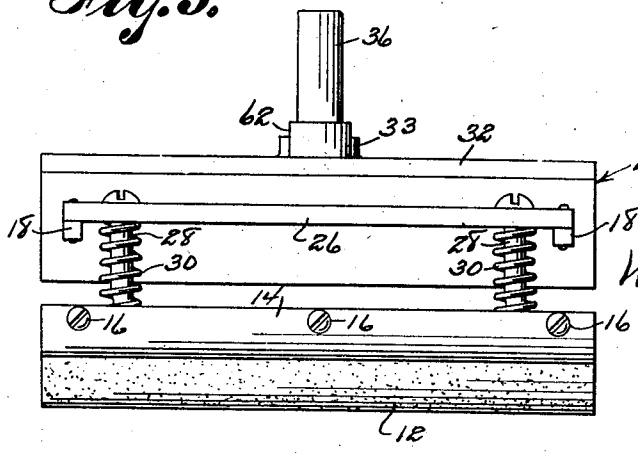


Fig. 5.



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UNITED STATES PATENT OFFICE

2,370,864

ABRADING AND POLISHING DEVICE

William Krieger, Lansing, Mich.

Application January 27, 1943, Serial No. 473,744

2 Claims. (Cl. 51—59)

My invention relates to sanding and polishing devices, and has among its objects and advantages the provision of an improved unit designed for coaction with a drill press or similar tool as a source of power.

In the accompanying drawings:

Figure 1 is a front elevational view of the invention applied to a drill press quill and its chuck.

Figure 2 is a view taken from the position indicated by line 2—2 of Figure 1.

Figure 3 is a sectional view along the line 3—3 of Figure 2.

Figure 4 is a plan view of a clamp for attaching the device to the quill.

Figure 5 is an end view, and

Figure 6 is a face view of a cam.

In the embodiment of the invention selected for illustration, I make use of a block or body 10 to which the abrasive or polishing sheet 12 is attached. This sheet is detachably connected with the block through the medium of clamp bars 14 attached to the block by screws 16. This block is reciprocated through the medium of bars 18 slidably guided in bearings 20 in two walls 22 of a cam box 24.

The bars 18 are arranged in parallelism and are interconnected at their ends by cross bars 26. Two screws 28 extend loosely through openings in each bar 26 and are threaded into the block 10. Upon the screws 28 and between the block 10 and the cross bars 26 are interposed compression springs 30.

A cover 32 is attached to the box 24 and is provided with a boss 33 and a bore 34 for rotatably receiving a shaft 36 which may be secured in a chuck 38 attached to the drill spindle 40. A cam 42 is attached to the shaft 36 and has bearing engagement with bars 44 attached to the two bars 18. Rotation of the cam 42 imparts reciprocatory motion to the block 10.

The block 10 is restrained from rotation through the medium of a clamp 46 secured to the drill press quill 48. In Figure 4, the clamp 46 includes a member 50 and a short member 52 adjustably connected therewith through the medium of bolts 54. Both members 50 and 52 are recessed at 56 for frictional engagement with the quill.

Two upstanding shafts 58 are fixedly secured in openings 60 in the member 50 and extend through bosses 62 on the cover 32. Cotter pins 64 hold the cover in assembly with the two shafts 58.

In operation, the chuck claws 66 bear against the boss 33 so that pressure may be applied to the block 10 through downward movement of the quill. The quill is adjusted to partly compress the springs 30 and made secure in that position. The pressure of the block upon the work may be varied through vertical adjustment of the quill. In most cases, it is desirable that a light pressure be exerted on the work. This attachment operates efficiently for sanding and polishing purposes, is easily and quickly attached to a drill press. The structure is relatively simple and sturdy. A lubricant may be contained in the box 24 for the cam mechanism and the bars 18.

Without further elaboration, the foregoing will so fully explain my invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A sanding attachment for a drill press having a quill and a chuck spindle, comprising a body carrying the sanding element for engagement with the work, a supporting member carried by and adjustable through the medium of the quill and including a clamp about the quill and a cam box carried by the clamp, a cam in the box, a shaft fixed to the cam and engaged by the drill chuck, a frame slidably connected with the box for vertical adjustment by the quill and having parallel bars engaging the cam to reciprocate the frame by rotary movement of the cam, means connecting the body with the frame and having vertically yieldable connections with the frame, and spring means about said means and disposed between the frame and the body for imparting yielding pressure on the body toward the work.

2. A sanding attachment for a drill press having a quill and a chuck spindle, comprising a body carrying the sanding element for engagement with the work, a supporting member carried by and adjustable through the medium of the quill and including a clamp about the quill and vertical shafts fixed to the clamp, and a cam box carried by the shafts formed to retain lubrication, a cam in the box operatively connected with the drill chuck to be rotated thereby, a frame slidably mounted in the cam box and extending outwardly therefrom, and having parallel bars engaging the cam to reciprocate the frame, means connecting the body with the frame including vertical screws fixed on the body and loosely engaging the frame, and springs about the screws and engaging the body and frame to impart yielding pressure on the body toward the work.

WILLIAM KRIEGER.