

No. 832,050.

PATENTED OCT. 2, 1906.

W. H. FERN & S. D. ROBERTS.

PENCIL SHARPENER.

APPLICATION FILED OCT. 11, 1905.

2 SHEETS—SHEET 1.

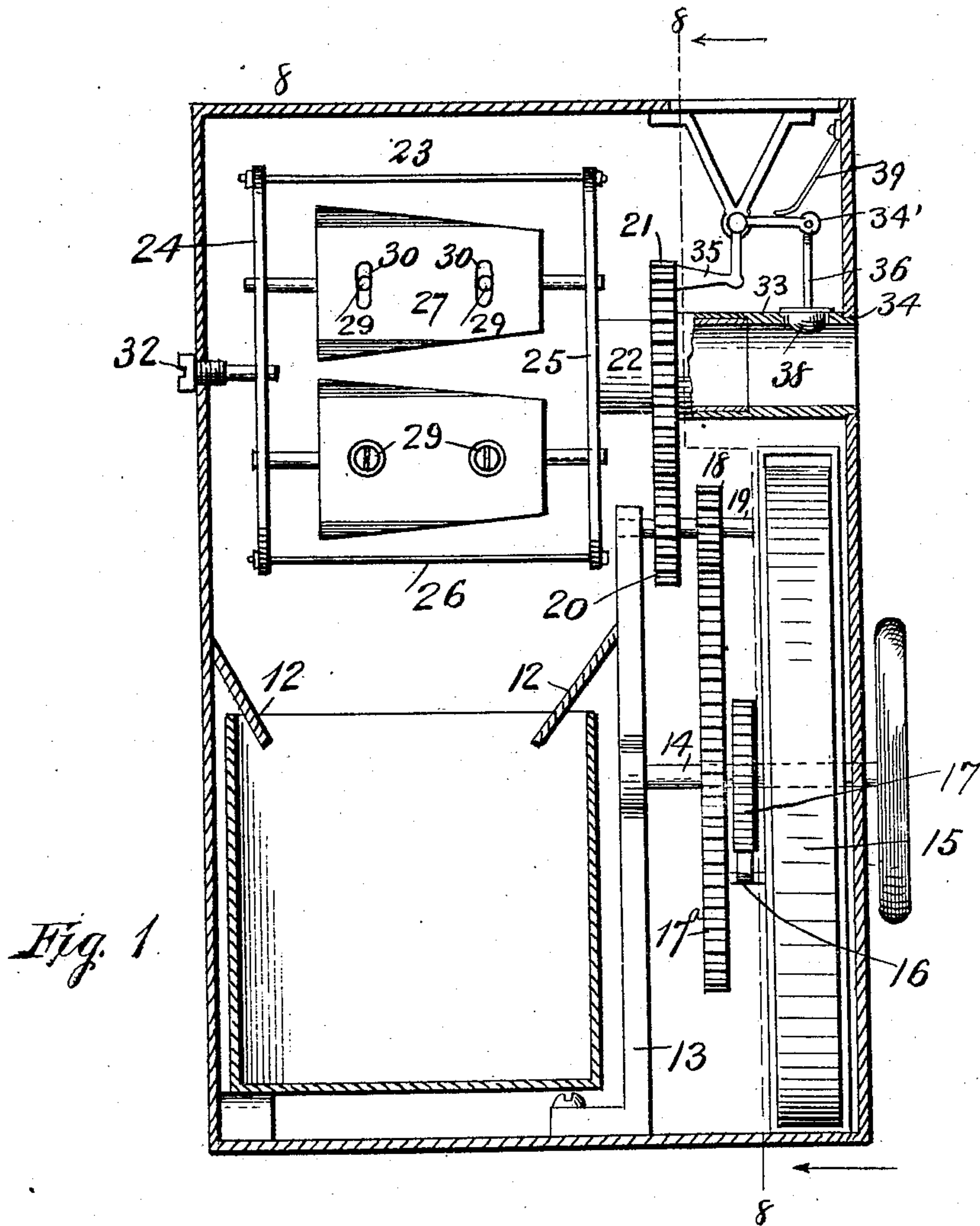


Fig. 1.

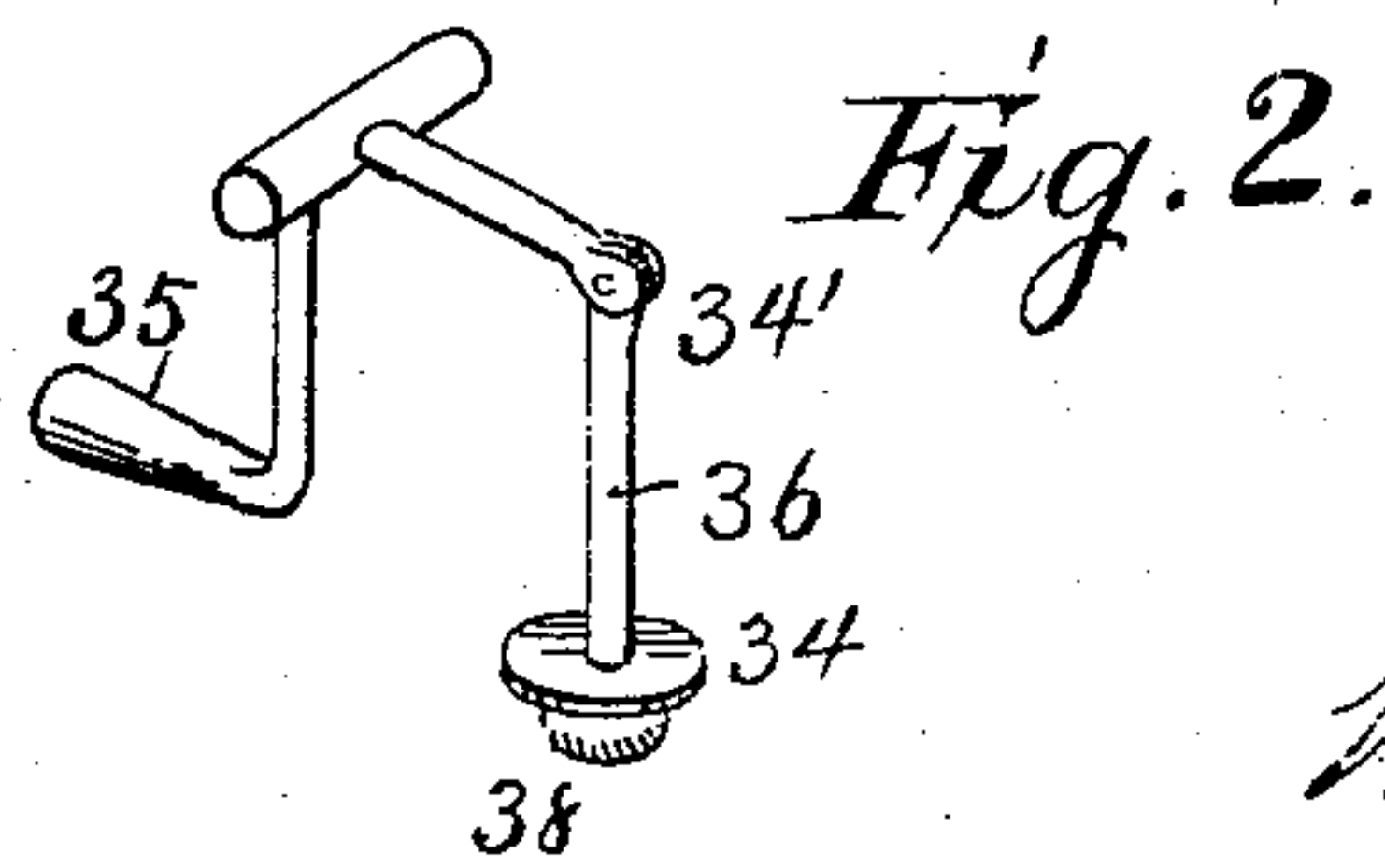


Fig. 2.

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PENCIL-SHARPENER.

No. 832,050.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed October 11, 1905. Serial No. 282,316.

To all-whom it may concern:

Be it known that we, WILLIAM H. FERN and SAMUEL D. ROBERTS, citizens of the United States of America, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a specification.

This invention relates to new and useful improvements in pencil-sharpeners, and has for its object to present a device of this kind that will work automatically by the insertion of a pencil to be sharpened.

It is also an object of the invention to present a novel device of this kind which is operated by a suitable motor, the action of which is controlled by a friction-brake, said brake being released by the pencil to be sharpened.

The invention also has for an object to present a novel device of this kind wherein the pencil to be sharpened is held stationary while suitable knives or cutters revolve around the pencil.

A still further object of this invention is to provide in a device of this kind a novel brake for controlling the operation of the device, the brake being provided with means for holding the pencil being sharpened from rotation.

Finally, an object of this invention is to produce a device of the character noted possessing advantages in points of simplicity, efficiency, and durability, proving at the same time comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, in which—

Figure 1 is a sectional view of the device. Fig. 2 is a view in perspective of the brake employed in the invention, said brake being shown detached. Figs. 3, 4, 5, 6, and 7 are views of details of the invention. Fig. 8 is a view taken on the line 8 8 of Fig. 1.

In the drawings, 8 indicates the housing provided with an opening 10, through which

slides a drawer or receptacle 11, adapted to receive the shavings or refuse of the sharpening operation. To insure the deposit of all the refuse within the receptacle, suitable deflectors 12 are arranged within the housing, as plainly shown in Fig. 1 of the drawings.

Within the housing is a standard 13, and supported by the standard and a wall of the housing is a shaft 14, which carries a coil-spring 15, the purpose of which is to rotate the shaft 14 in one direction. A pawl 16 and ratchet 17 are employed as in all ordinary arrangements of this character, the purpose of which is thought clearly apparent. Carried by the shaft 14 is a toothed wheel 17^a, which meshes with a smaller toothed wheel 18, mounted on a shaft 19, suitably supported within the housing. Also carried by the shaft 19 is a second toothed wheel 20, which meshes with a toothed wheel 21, arranged around a tubular extension 22, carried by a knife or cutter frame 23. The cutter-frame 23 comprises two head-pieces 24 25, connected by the side pieces 26. Secured within the frame 23 and to the heads 24 25 thereof are the parallel cylinders 27, to which are secured the cutters or knives 28. The knives 28 are secured to the cylinders 27 by means of screws 29 passing through the elongated openings 30 of the cylinders 27. The ends of the screws are threaded into holes 31 of the knives or cutters. The elongated openings 30 permit of an adjustment of the cutters or to vary the angle of cut or the depth of cut. The head-piece 24 is rotatably mounted on a stud 32, threaded through a side of the housing, while the head-piece 25 is provided with a tubular extension 22, which fits within a sleeve 33, carried by the opposite side of the housing. The sleeve 33 registers with an opening 34 in the housing.

The pencil to be sharpened is inserted through the opening 34 of the housing, through the sleeve 33, extension 22, and between the cutters or knives 27. The knives are caused to revolve around the pencil by means of the spring 15 and the chain of gearing operated thereby. It is to be stated that the cutters have their edges so arranged as to give the proper incline to the pencil-point. The shaft 14 on the exterior of the housing is provided with a suitable knob or handle, whereby the spring 15 may be wound or rewound. To hold the mechanism normally inoperative, a

friction-brake 35 is arranged within the housing. This brake bears against the wheel 21 on the extension 22 and is carried by one end of a bell-lever 34', which is suitably mounted within the housing. To the opposite end of the bell-lever 34' is secured a depending rod 36, which passes through an opening 37 in the sleeve 33 and is provided with a cam end 38, extending within the bore of the sleeve. By this means when a pencil is inserted within the sleeve 33 it will contact with the cam 38, force up the rod 36, operate the bell-lever 34', and release the brake from the wheel 21, and thereby allow the cutter-frame 23 to revolve until the pencil is removed. The cam 38 also binds against the pencil being sharpened and holds the same against rotation, an arrangement which has been found most essential in operation. To return the brake to its normal position, a spring 39 is secured to the housing and bears against the bell-lever 34'. It has been found in practice that the operation of the device is greatly facilitated by providing the cutter-frame 23 with a fly-wheel 40, as shown in Fig. 3 of the drawings.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination, a housing, a frame rotatably mounted within the housing, knives carried by the frame, a sleeve having an opening carried by the housing, an extension on the frame engaging the sleeve, a friction-brake for holding the frame against motion and a rod on the brake passing through the opening of the sleeve.

2. In combination, a housing, a frame rotatably mounted within the housing, knives carried by the frame, a sleeve having an

opening carried by the housing, an extension 40 on the frame engaging the sleeve, a bell-lever mounted within the housing, a brake-shoe carried by one end of the lever to hold the frame against rotation and a rod connected to the opposite end of the lever, said rod extending through the opening of the sleeve.

3. In combination, a housing, a frame rotatably mounted within the housing, knives carried by the frame, a sleeve having an opening carried by the housing, an extension 50 on the frame engaging the sleeve, a bell-lever mounted within the housing, a brake-shoe carried by one end of the lever to hold the frame against rotation and a rod connected to the opposite end of the lever, said rod extending through the opening of the sleeve, and a cam carried by the free end of the rod.

4. In combination, a housing, a frame rotatably mounted within the housing, cutters carried by the frame, an extension on the 60 frame, a toothed wheel on the extension, means meshing with the toothed wheel for rotating the frame, a sleeve on the frame engaged by the extension of the frame, said sleeve having an opening, a friction-brake 65 adapted to contact with the toothed wheel of the extension on the frame to hold said frame against rotation and an operating means for the brake extending through the opening of the sleeve.

In testimony whereof we affix our signatures, in the presence of two witnesses, this 9th day of October, 1905.

WILLIAM H. FERN.
SAMUEL D. ROBERTS.

Witnesses:

JOHN H. JONES,
GEORGE GANNON.