L. J. FANNING.

SCREW OPERATING MECHANISM.

APPLICATION FILED APR. 3, 1913.

1,077,465. **Patented Nov. 4, 1913.**

Fig. 1

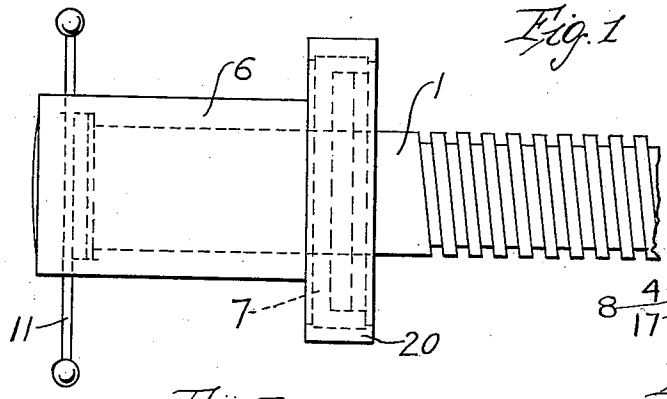


Fig. 5

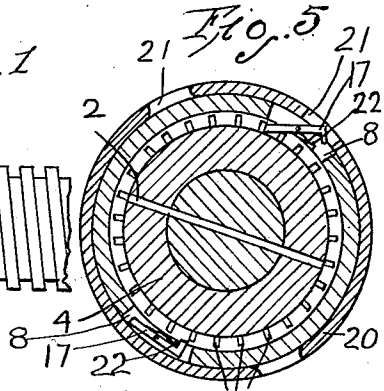


Fig. 2

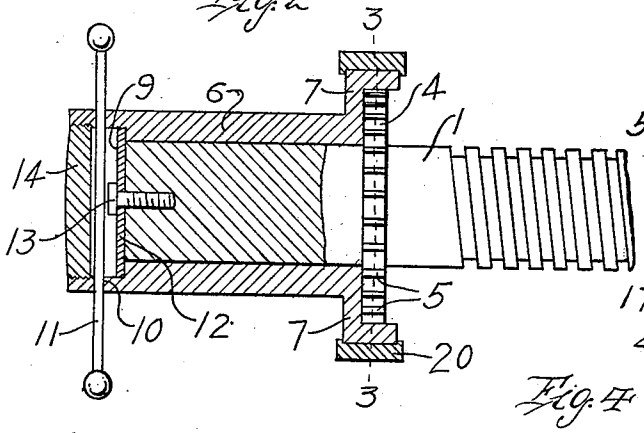


Fig. 3

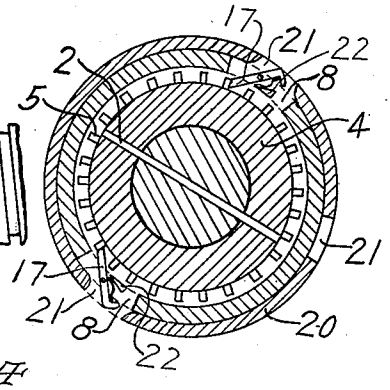
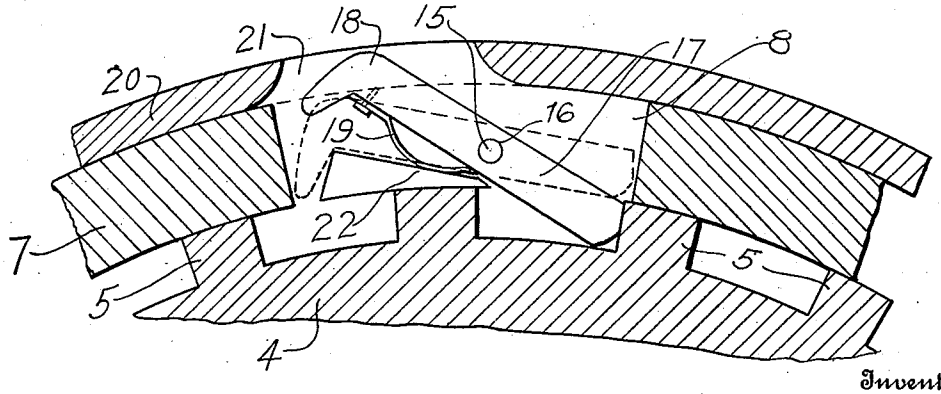


Fig. 4



Inventor

L. J. FANNING.

Witnesses

Robert M. Sutphen

A. I. Hurd.

By Watson E. Coleman

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LUTHER JOSEPH FANNING, OF SEELY CREEK, NEW YORK.

SCREW-OPERATING MECHANISM.

1,077,465. Specification of Letters Patent. Patented Nov. 4, 1913.

Application filed April 3, 1913. Serial No. 758,686.

To all whom it may concern:

Be it known that I, LUTHER J. FANNING, a citizen of the United States, residing at Seely Creek, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Screw-Operating Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

This invention comprehends certain new and useful improvements in vise screws and relates more specifically to operating means for the vise screw.

An object of the invention is to provide simple means upon the outer or free end of the vise screw for rotating the same in either direction, as desired.

Another object is to provide means of this character which will be of extremely simple construction and which may be locked with the screw to rotate the same when turned in one direction only or when turned in either direction, as desired.

Another object is to provide a simple form of screw rotating means of this character and which may be readily and securely mounted upon the free end of the vise screw or removed from the same, as desired.

With these and other objects in view, my invention consists in certain novel constructions, combinations and arrangements of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing, in which—

Figure 1 is an elevational view of my invention; Fig. 2 is a longitudinal section thereof; Fig. 3 is a cross-sectional view on the line 3—3 of Fig. 2; Fig. 4 is an enlarged fragmentary cross-sectional view, showing the construction and operation of one of the dogs. Fig. 5 is a cross-sectional view showing the pawls in other positions.

Referring more specifically to the drawing, 1 designates the outer or free end of a vise screw of ordinary form and having the transverse slot 2 provided therethrough at a spaced distance from its end to receive the key which also extends through the wheel 4 having the spaced apart flat teeth 5 upon its periphery, the purpose of which will presently appear.

The rotatable sleeve 6 is loosely mounted upon the end of the screw 1, outwardly of the wheel 4 and has an offset collar 7 at its inner end and loosely engaged over the wheel 4 and provided with the spaced openings 8, the purpose of which will presently appear.

The longitudinal bore of the sleeve 3 is increased in diameter outwardly of the end of the screw 1 to provide the shoulder 9, it being understood that the end of the sleeve 6 projects beyond the end of the screw 1 and is provided with a registering transverse opening 10 through which the handle 11 is engaged for rotating the sleeve 6. The sleeve 6 is held in position upon the end of the screw 1 by means of the washer 12 which in turn, is held against the end of the screw 1 by means of the cap screw 13, the washer 12 being of such diameter as to be engaged against the shoulder 9, thereby preventing the sleeve 6 from being withdrawn from the end of the screw 1. The end of the sleeve 6, outwardly of the handle 11, is closed by the threaded closure cap or disk 14 threaded in the end of the sleeve 6.

Within each opening 8 of the offset collar 7, is positioned a pin 15 which extends through an opening 16 in a dog 17, it being understood that the pins 15 are positioned transversely in the slots 8 and that the upper ends of the dogs 17 project beyond the outer face of the collar 7 and are bent at an angle, as shown at 18. Each dog 17 has a spring 19 against its main portion within the slot 8 to normally and resiliently retain the dog in operative position with its inner end or point in contact with the teeth 5 of the wheel 4, it being understood that one end of the spring 19 is secured to the dog 17, while the opposite end is loosely engaged against the dog, the central or main portion of the spring being curved or bowed outwardly from the dog and resting upon the seat 22 formed in the lower part of the opening 8.

A ring 20 is movably mounted peripherally on the collar 7 and is provided with spaced openings 21 of elongated form. Any suitable number of openings 21 may be provided in the ring 20, but I prefer to employ three of such openings, as shown in the drawings, two of such openings being diametrically opposite each other, while the third opening is provided between the first mentioned openings. The purpose of arranging the openings in this manner will presently appear. The ring 20 is mounted for rotation on the collar 7 and when the ring is in position upon the collar 7 with the central opening 21 directly opposite one of the openings 8 in said collar 7, the outer

end of the dog 17 in this opening will be forced outwardly by means of its spring 19 until the bent end 18 thereof is within the opening 21 and the point or inner end of the dog is engaged with the teeth 5 of the wheel 4, thereby compelling the screw 1 to rotate with the sleeve 6 when the latter is turned in one direction but leaving said sleeve to rotate in the opposite direction without affecting the screw 1, the inner end or point of the dog riding over the teeth in the latter case, as will be clearly apparent. By a slight rotation of the ring 20 to move the openings 21 thereof away from the openings 8 in the collar 7, the outer or free ends of the dogs 17 will be forced inwardly, causing the inner ends or points thereof to disengage from the teeth 5 of the wheel 4, this movement of the dogs 17 also compressing the springs 19 and leaving the sleeve 7 free to rotate in either direction upon the screw 1, without affecting the latter. By turning the ring 20 until the opposite openings 21 thereof are opposite the openings 8 in the collar 7, the dogs 17 will be automatically thrown into their operative positions with their inner ends or points engaged in the recesses between the teeth 5, while their outer bent ends 18 are forced into the openings 21 of the ring 20, by means of the springs 19, thereby locking the screw 1 for rotation with the sleeve 6 in either direction. It will be readily understood, that the dogs 17 are formed and positioned in such manner that when one dog is in operative position, it will cause rotation of the screw 1 with the sleeve when the latter is turned in one direction, while the other dog, when in operative position, will cause rotation of the screw 1 with the sleeve 6 when said sleeve is rotated in the opposite direction.

From the foregoing it will be apparent that I have provided a mechanism of extremely simple construction and operation for operating the screw of a vise or the like, and it will be evident that owing to the construction of the parts and the manner in which they are connected and coöperate, they may be readily and cheaply manufactured, and should any parts become worn or broken, they may be readily replaced at small cost.

While I have shown the preferred form of my invention, it will be understood that I do not wish to be limited to this specific form, as minor changes may be made within the scope of the appended claims without departing from the spirit of my invention.

What is claimed is:—

1. A device of the class described comprising a rotatable member, a wheel secured to said member and provided with teeth upon its periphery, a sleeve mounted upon said member and having a collar extending over the teeth of the wheel, means for securing the sleeve upon the rotatable member, means for turning the sleeve, means carried by the collar for locking the wheel and rotatable member for rotation with the collar and sleeve, and means for controlling the locking means.

2. A device of the class described comprising a rotatable member, a toothed wheel carried by said member, a sleeve mounted on said member, means for rotating the sleeve, means for locking the wheel and rotatable member for rotation in one direction with the sleeve, means for locking the wheel and rotatable member for rotation in an opposite direction with the sleeve, and means for controlling the locking means.

3. A device of the class described comprising a vise screw, a toothed wheel carried by the vise screw, a wheel rotatably mounted on the vise screw, means for securing the sleeve in position, means for rotating the sleeve, means for locking the wheel and screw for rotation with the sleeve at times, and a ring for throwing the locking means into inoperative position.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

LUTHER JOSEPH FANNING.

Witnesses:
ERWIN J. BALDWIN,
MYRTLE C. FOY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."