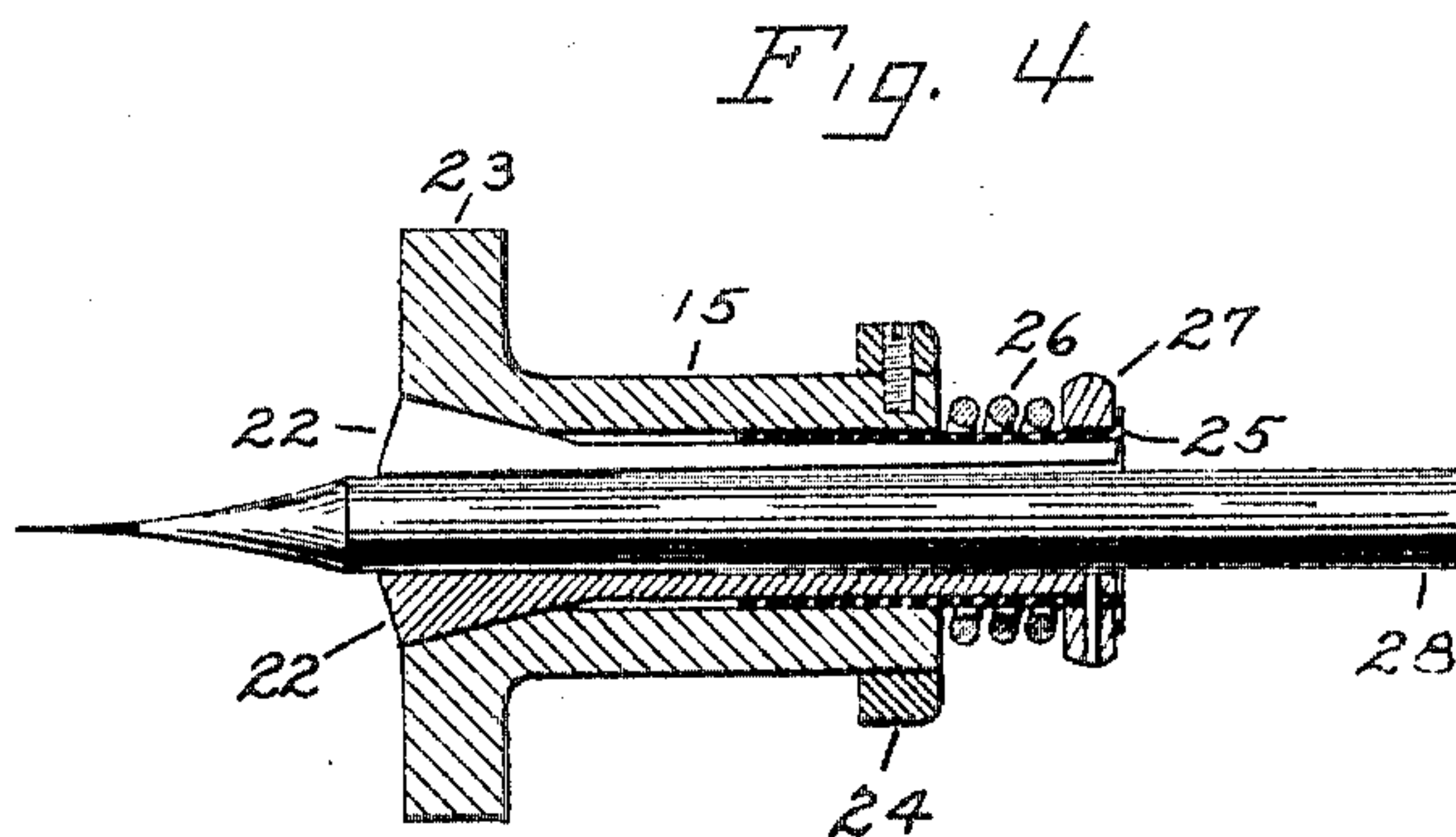
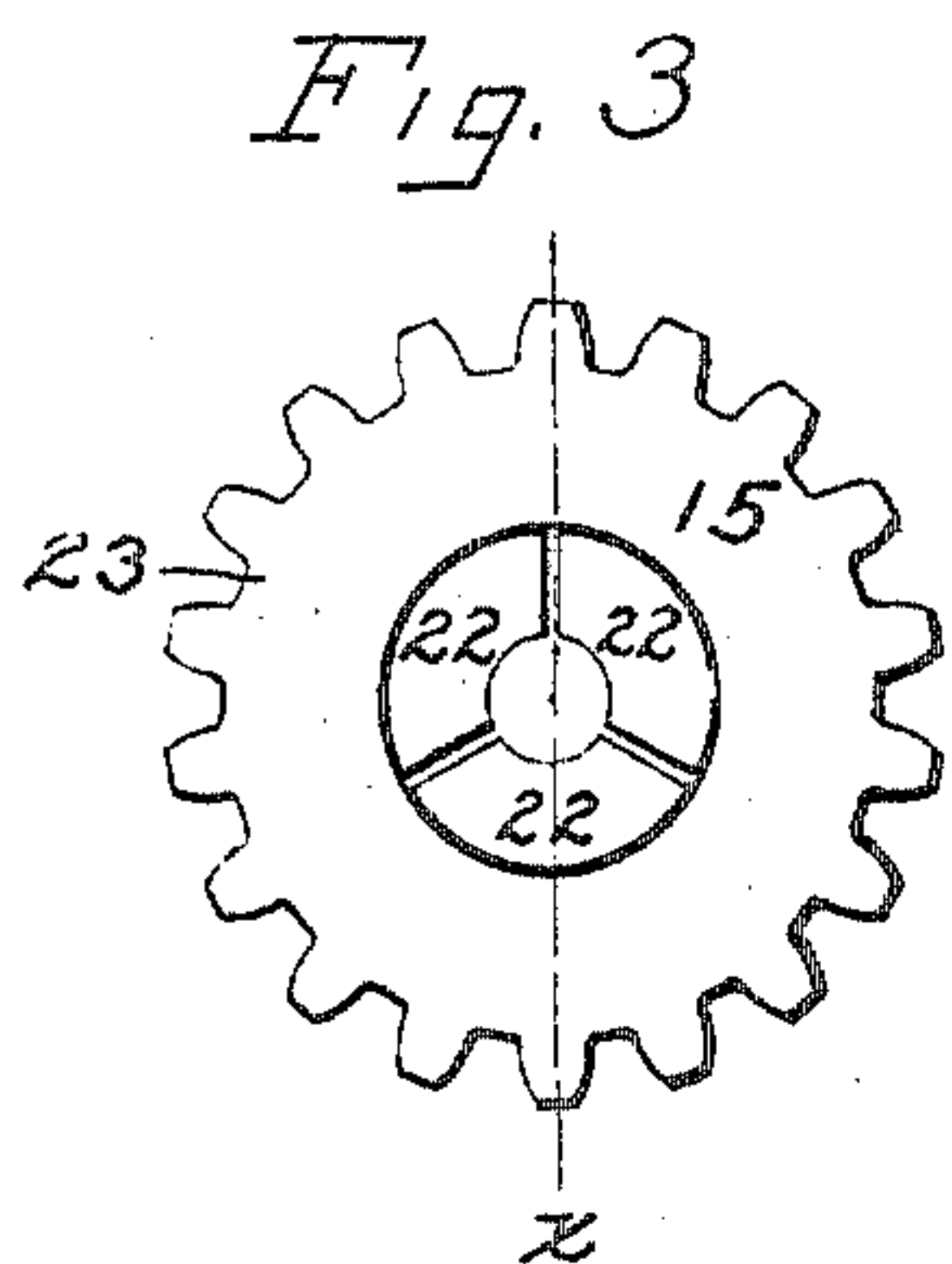
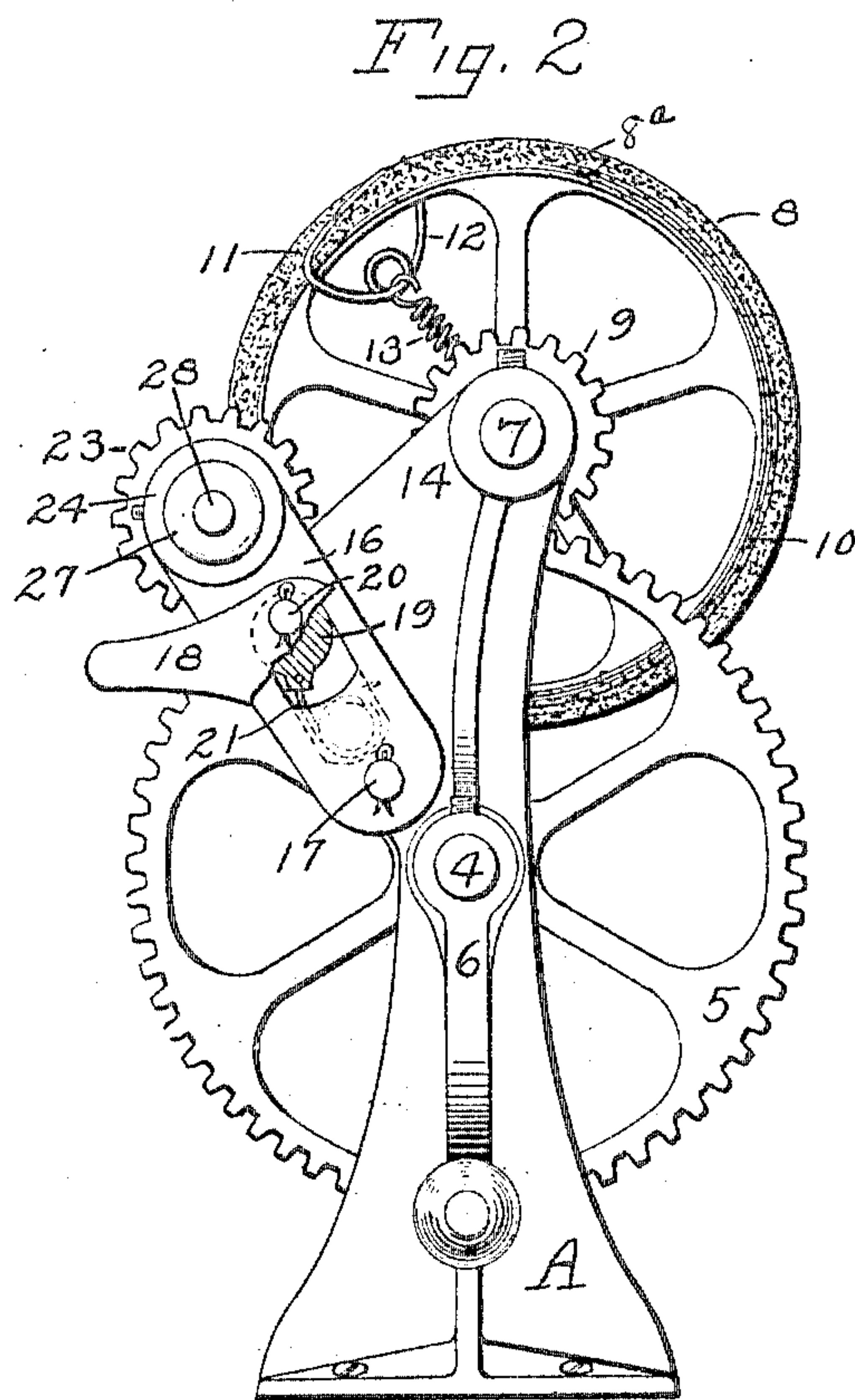
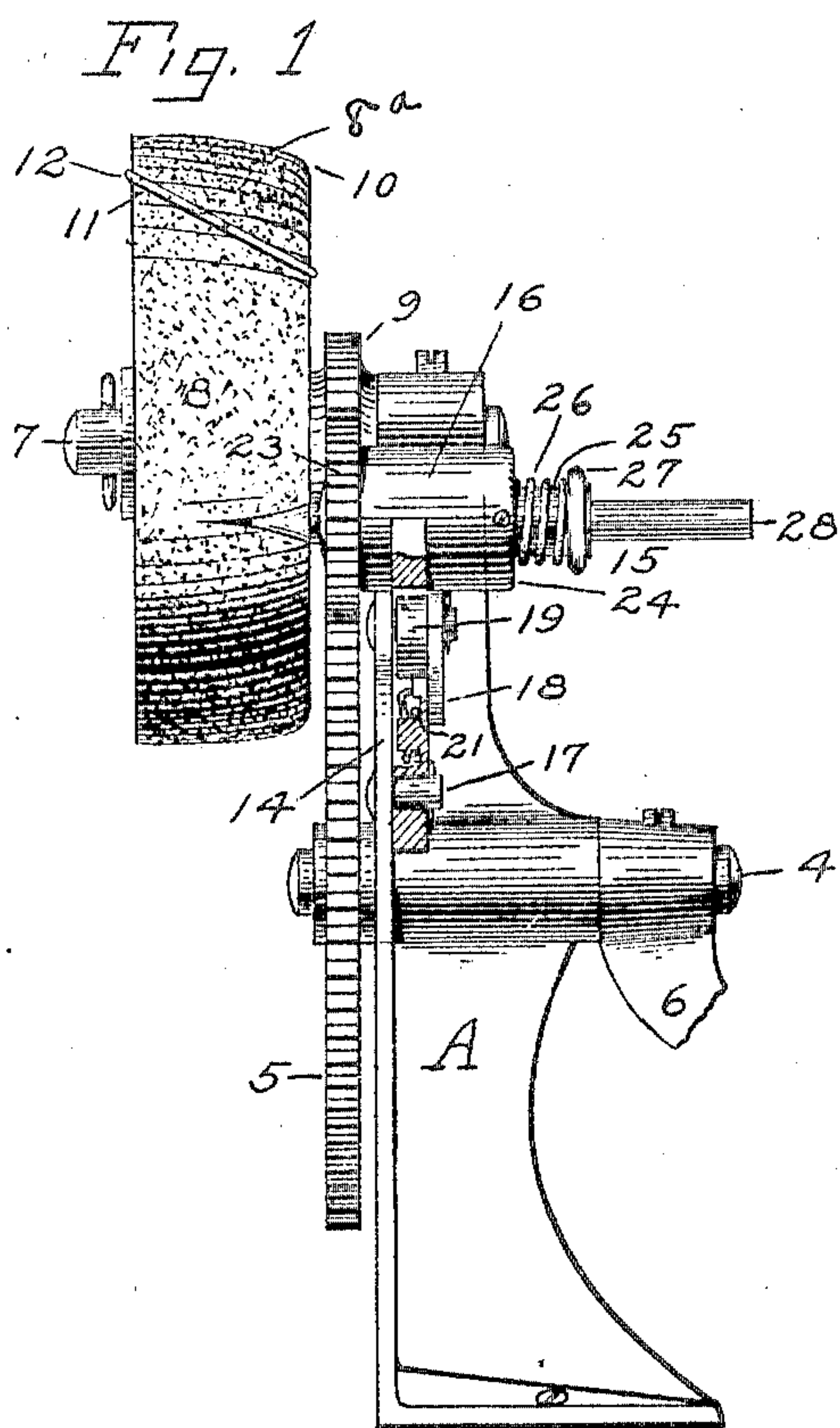


No. 804,513.

PATENTED NOV. 14, 1905.

G. W. WRIGHT.
PENCIL SHARPENING MACHINE.
APPLICATION FILED FEB. 13, 1905.



Witnesses.
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UNITED STATES PATENT OFFICE.

GRANVILLE W. WRIGHT, OF NEW BRITAIN, CONNECTICUT.

PENCIL-SHARPENING MACHINE.

No. 804,513.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed February 13, 1905. Serial No. 245,358.

To all whom it may concern:

Be it known that I, GRANVILLE W. WRIGHT, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Pencil-Sharpening Machines, of which the following is a specification.

My invention relates to improvements in machines for sharpening pencils; and the objects of my improvement are simplicity and economy in construction and convenience and efficiency in operation.

In the accompanying drawings, Figure 1 is a front elevation of my pencil-sharpening machine with a portion thereof in section and with the crank broken off. Fig. 2 is a side elevation thereof, partly in broken-out section. Fig. 3 is an enlarged end view of the pencil-holder. Fig. 4 is a longitudinal section of the same on the line *x* of Fig. 3, together with a sharpened pencil.

A designates the frame, which may be of any ordinary construction and upon which is mounted the driving-shaft 4, driving-wheel 5, and crank 6, together with the wheel-shaft 7, wheel 8, and pinion 9. The driving-wheel and pinion are or may be ordinary gear-wheels engaging each other or connected in any ordinary manner, so that the driving-wheel drives the pinion and its shaft to rotate the wheel.

The wheel 8 is for supporting and carrying an abrading-surface of some kind; but the particular construction of such surface or the manner of applying it to the wheel is not essential to my invention; neither is the form of the wheel, although I prefer the form herein shown and described. I also prefer to apply the abrading-surface in the form of sand paper or cloth held on the periphery of the wheel, in which case the wheel 8 of itself has no abrading-surface. I have, however, for convenience of description referred to the said wheel as an "abrading-wheel," meaning thereby that it is the wheel that is designed to support and carry the abrading-surface. Instead of making its periphery of the ordinary flat form I shape the same with a rounded face and rounded inner corner 10 for the purpose of giving the desired taper to the pencil-point by the shape of the wheel when the pencil is held in a position parallel to the axis of the abrading-wheel in contradistinction to shaping the point by holding the pencil at an angle to the axis of the abrading-wheel. The

pencil is concavely pointed by forming the wheel with a rounded face. The abrading material or surface 8^a may be applied to the wheel in any ordinary manner; but I prefer to employ strips of sandpaper or the like, that are clamped one at a time on the periphery of the wheel, so that the surface can be readily renewed from time to time. I form transversely to the rim of the wheel a shallow groove or recess 11, that preferably extends obliquely across the rim. In connection with this grooved rim I form a clamp 12, of wire or other suitable material, which clamp, as shown, is in the form of a flattened ring. It is drawn firmly down into the said groove and held therein by means of a spring 13, one end of which spring is connected to the said clamp and the other end to the hub or some other fixed point of the abrading-wheel inside of the rim. The groove should be a little deeper than the diameter of the wire of which the clamp is formed, so that the clamp will not project beyond the general surface of the sandpaper, which it clamps to the wheel. The sandpaper is cut into strips wide enough and long enough to cover the rim of the abrading-wheel and let the two ends of the strip lap one over the other. If the groove extends obliquely across the wheel, the ends of the strips should be slanted accordingly. The strips are arranged on the wheel with the lapped ends meeting each other at the groove, where they are held by the spring-clamp. The clamp may readily be pulled up out of the groove to pass the ends of the strip under it, and the tension of the spring will draw the clamp down, force the ends of the paper into the bottom of the groove, and hold them there without leaving any objectionable projection on the face of the wheel. The strips readily conform to the shape of the periphery of the wheel 8. The efficiency of this device for holding the abrading-strips has been demonstrated by practical use.

The frame A is provided with a bracket 14 upon which to mount the pencil-holder 15 and its operating devices. This holder is journaled in the outer end of a carrier in the form of a swinging arm 16, that is pivoted on the pin 17 at a point inside of the rim of the driving-wheel and near the center thereof. An operating-lever 18, having a cam 19, is pivoted by the stud 20 to the bracket 14, whereby a movement of the said lever causes the swinging arm to swing slightly on the pivot-pin 17, the said cam 19 being fitted to an opening in

the said swinging arm, as shown in Figs. 1 and 2. A spring 21 returns the parts to the position shown in Fig. 2.

The pencil-holder 15 has a body portion in the form of a sleeve for the jaws 22. One end of the holder 15 has formed thereon or attached thereto the pinion 23, that is engaged with and driven by the driving-wheel 5. The other end is provided with a collar 24 for retaining the pencil-holder in the swinging arm. The jaws, preferably three in number, are connected at their tail or non-grasping ends in any proper manner—as, for example, by a tube 25, that projects beyond the collar 24 and around which tube and tail end of the jaws is a spring 26, with one end abutting against the body of the pencil-holder and its other end abutting against a ring or shoulder 27, whereby the said spring exerts a pressure on the jaws to move them longitudinally and draw their heads into the body of the pencil-holder. The end of the body of the pencil-holder is provided with a conical bore, and the heads of the jaws are correspondingly tapered in the well-known manner of fitting the jaws of various holders to their sleeve or head. Some provision must be made for the jaws to open and close, and this may be done, if desired, by the resiliency of the material of which the jaws are formed. For example, the jaws may be made of wood and have their tails rigidly fixed within the tube 25, in which case the resiliency of the wood in the thinner portions of the jaws may be sufficient to permit the heads of the jaws to move out and in, so as to open and close upon a pencil to receive and hold it. I also prefer to employ wood for the jaws, as it takes a better hold than metal on the pencil.

In order to put the pencil into the holder, the pencil 28 is inserted into the holder through the tails of the jaws and pushed forwardly until the end to be sharpened projects the desired distance. As the forward end of the pencil engages with the inner faces of the partially-closed jaws near their outer end the said jaws will be carried longitudinally with the pencil against the force of the spring 26 until the jaws may be forced open sufficiently to let the pencil pass through them. As soon as the longitudinal pressure on the pencil is released the spring 26 acts to draw the tapered heads of the jaws into the body of the pencil-holder, thereby forcing the jaws firmly upon the pencil to hold it and make it rotate with the said holder. The jaws may be opened to release the pencil by compressing the spring 28 by hand.

The swinging arm is pivoted so nearly to the center of the driving-wheel that the slight movement of the pencil-holder to and from the abrading-wheel does not materially change the relation of the pinion 23 to the driving-wheel 5.

I am aware that prior patents disclose

pencil-sharpening machines having rotating abrading-wheels and rotating pencil-holders mounted to move bodily to and from the abrading-wheel, and I hereby disclaim the same. By the employment of a positively-acting mechanism, as the cam-lever, for forcing the pencil-holder toward the abrading-wheel the pencil-holder is very firmly and steadily carried to its work. This mechanism reduces the motion of the hand on the lever when said motion is transmitted to the holder, so that the latter moves slower and more evenly than it could possibly be moved by a direct push of the operator's hand, whereby all vibration or chattering is avoided as the pencil and holder are forced toward the wheel.

I claim as my invention—

1. In a machine for sharpening pencils, the combination of an abrading-wheel with means for driving the said wheel, a pencil-holder, means for rotating the said holder, a carrier for mounting the said holder to move it bodily in the transverse direction of its axis to and from the said abrading-wheel, and mechanism for positively forcing the carrier and pencil-holder in the said transverse direction steadily toward the said wheel.

2. In a machine for sharpening pencils, the combination of an abrading-wheel with a swinging-arm, a pencil-holder mounted on the outer end of the said swinging arm to swing bodily to and from the said wheel, an operating-lever, and a cam connected with the said lever and acting on the said swinging arm to steadily force the pencil in the holder toward the periphery of the said wheel.

3. In a machine for sharpening pencils, the combination of an abrading-wheel with means for driving the said wheel, a pencil-holder, a carrier for mounting the said holder to move bodily to and from the said abrading-wheel, a spring for forcing the said carrier and pencil-holder away from the said abrading-wheel, a separately-moving operating-lever for modifying the movement of the operator's hand on the lever as transmitted to the said carrier and pencil-holder.

4. In a machine for sharpening pencils, the combination of an abrading-wheel having a rounded periphery, with a pencil-holder, means for rotating the said holder, a carrier for mounting the said pencil-holder to move bodily transversely to its axis to and from the said rounded periphery, and positively-acting mechanism for moving the said carrier and pencil-holder transversely to the axis of the said holder steadily toward the said rounded periphery.

5. In a machine for sharpening pencils, the combination of an abrading-wheel for supporting and carrying a strip of abrading material, and having in its periphery a shallow groove extending transversely across the same, a clamp fitted to the said periphery for lying in the said groove, and a spring for

drawing the said clamp down into the groove and pressing the strip of abrading material at its lapped ends against the bottom of the said groove.

extending transversely to the said periphery for entering the said groove, and a spring for 10 drawing the said clamp down into the said groove.

5 6. In a machine for sharpening pencils, the combination of an abrading-wheel having in its periphery a shallow groove extending transversely across the same, with a clamp

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