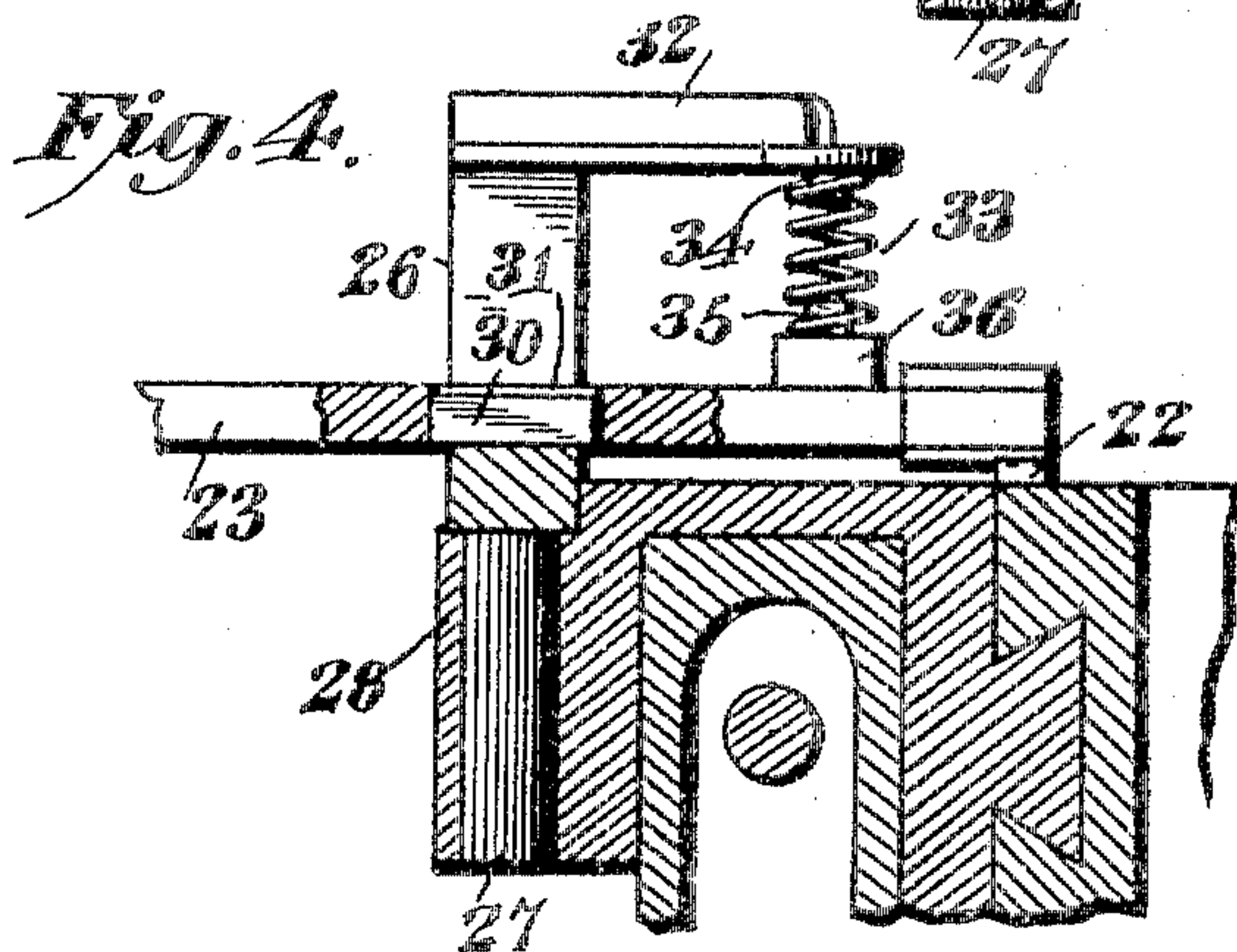
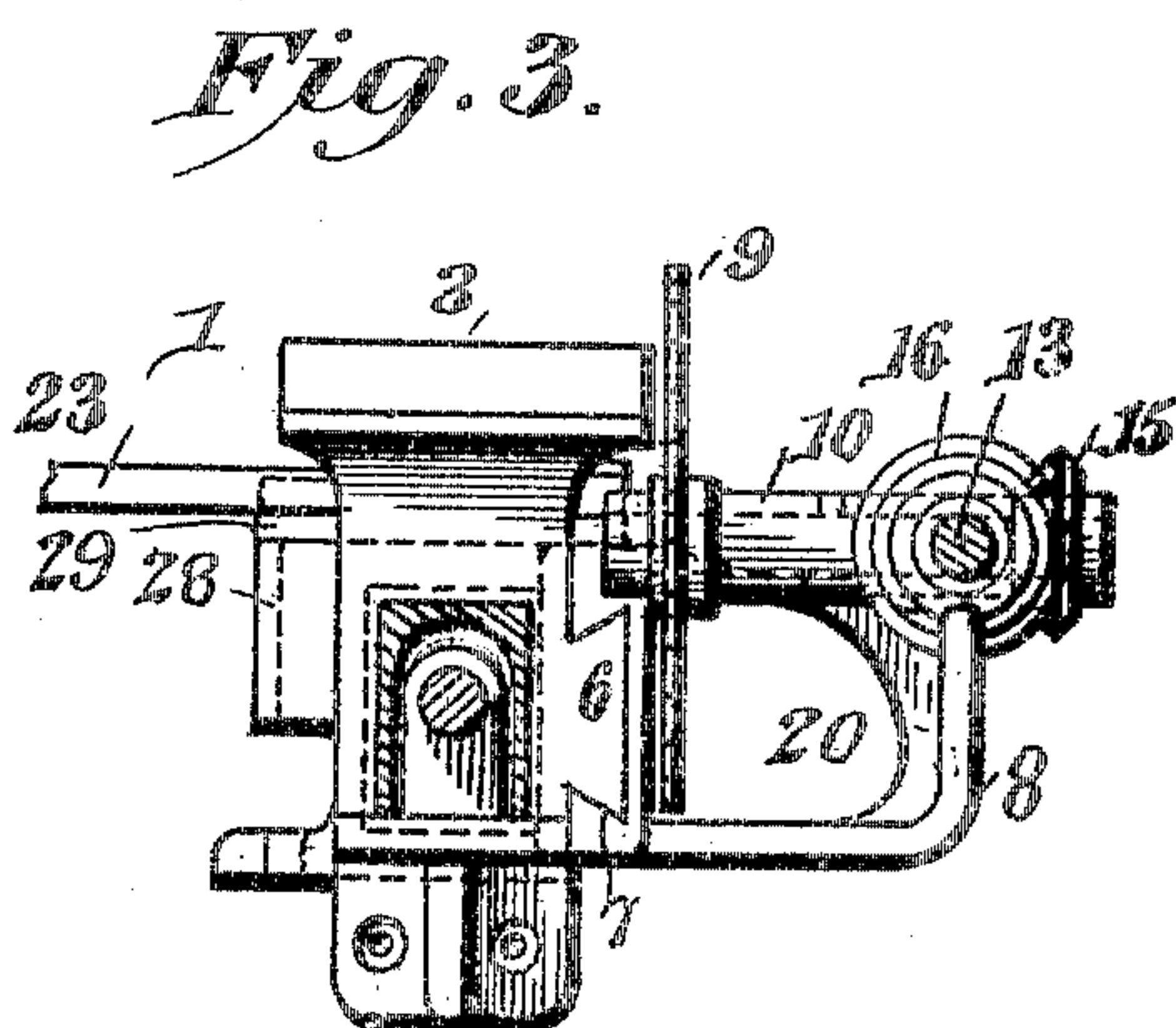
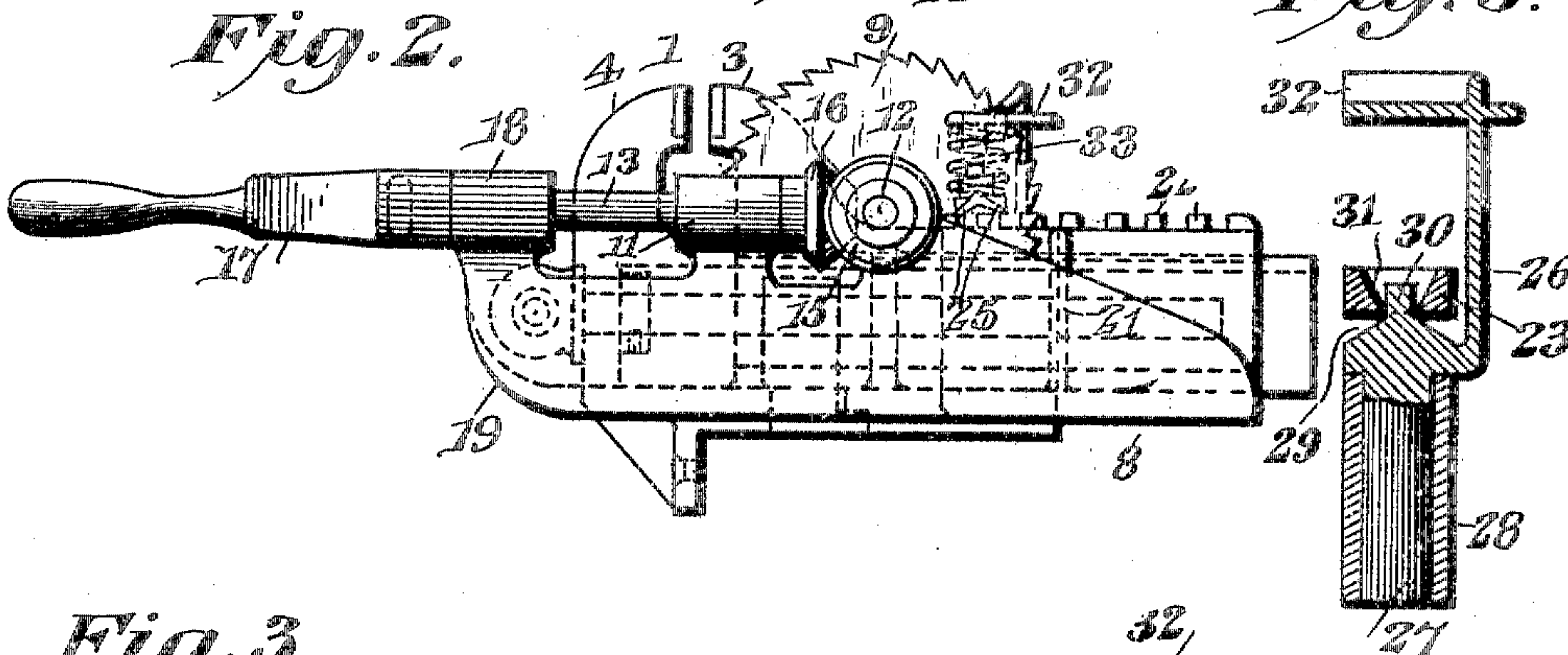
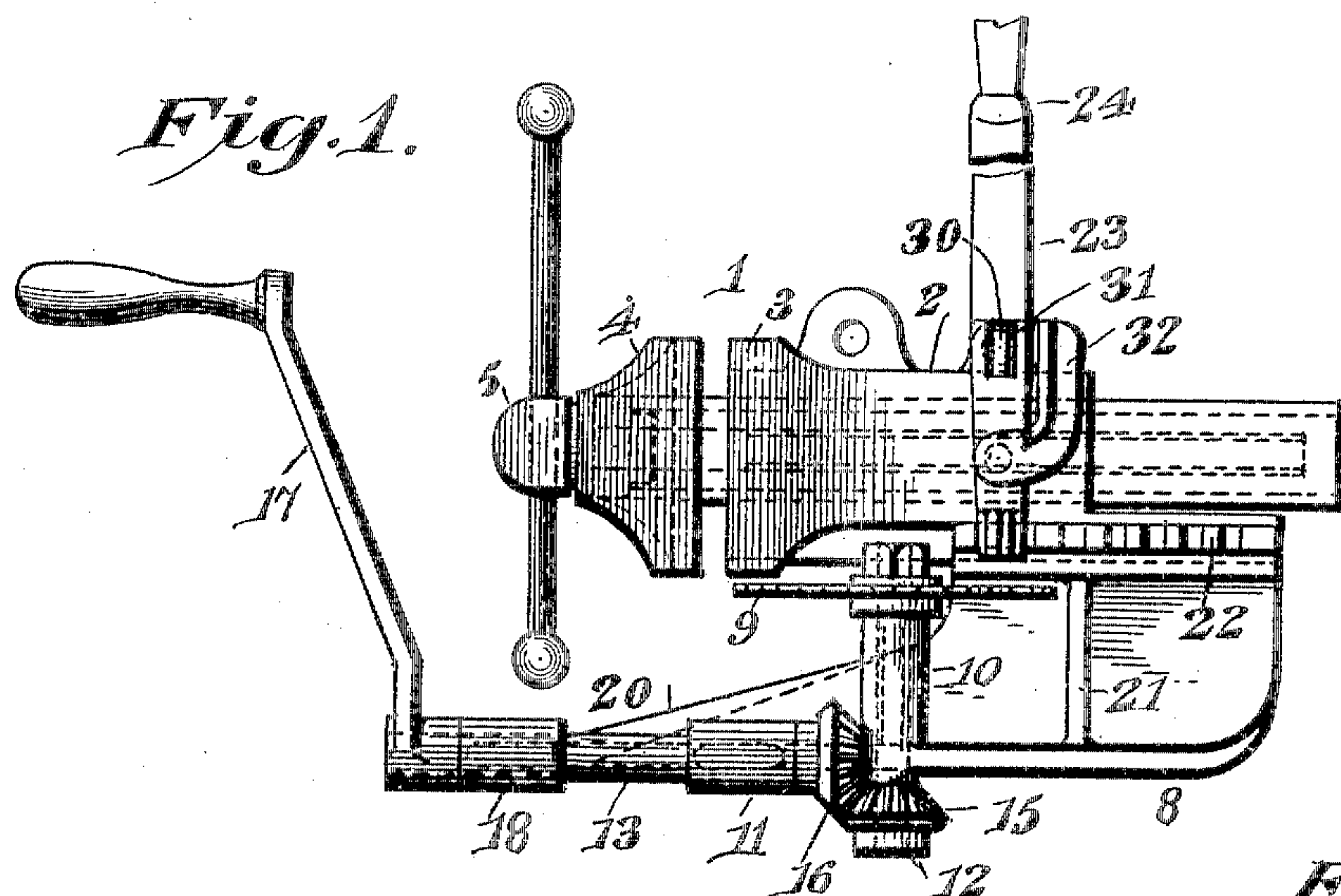


No. 793,796.

PATENTED JULY 4, 1905.

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SAW ATTACHMENT FOR BENCH VISES.

APPLICATION FILED MAY 29, 1903.



*Fig. 6.*

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# UNITED STATES PATENT OFFICE.

ERVIN SAMUEL MUMMERT, OF HANOVER, PENNSYLVANIA.

## SAW ATTACHMENT FOR BENCH-VISES.

SPECIFICATION forming part of Letters Patent No. 793,796, dated July 4, 1905.

Application filed May 29, 1903. Serial No. 159,393.

*To all whom it may concern:*

Be it known that I, ERVIN SAMUEL MUMMERT, a citizen of the United States, residing at Hanover, in the county of York and State of Pennsylvania, have invented a new and useful Saw Attachment for Bench-Vises, of which the following is a specification.

The invention relates to a saw attachment for bench-vises.

The object of the present invention is to improve the construction of sawing attachments for bench-vises and to provide a simple, inexpensive, and efficient metal-sawing device designed to be operated in connection with a bench-vise of the ordinary construction and adapted for cutting all kinds and sizes of material which may be held in a vise.

A further object of the invention is to provide a metal-sawing attachment adapted to be readily applied to a vise and capable of being quickly removed therefrom to permit the vise to be used as an ordinary bench-vise.

The invention also has for its object to provide an attachment having the saw-operating gearing at one side of the vise to be operated with the right hand and provided at the opposite side of the vise with means for actuating the feeding mechanism, whereby the saw may be operated and fed simultaneously by a workman without changing his position in front of the vise.

Furthermore, it is the object of the invention to enable the saw to operate close to one end of the jaws and to permit it to be moved backward beyond the same to enable the vise to be used without removing the attachment therefrom.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a plan view of a metal-sawing attachment constructed in accordance with this invention and shown ap-

plied to a vise. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation, partly in section. Fig. 4 is a transverse sectional view illustrating the construction of the feeding mechanism. Fig. 5 is a detail view illustrating the manner of pivoting the bracket and the means for fulcruming the lever. Fig. 6 is a detail view of the inner end of the lever, illustrating the construction for engaging the rack of the slidable frame.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a bench-vise designed to be mounted on a bench by screws, bolts, or other suitable fastening devices and comprising a stationary frame or member 2, having a stationary jaw 3, and a movable member provided with an adjustable jaw 4, cooperating with the stationary jaw. The adjustable jaw is operated by means of a screw 5, swiveled to the adjustable member and engaging a threaded opening or nut of the stationary member in the usual manner, and as this mechanism is of the ordinary construction and does not constitute a portion of the present invention a detailed description and illustration is unnecessary.

The stationary member of the vise is provided at the right-hand side with a horizontal guide consisting of a dovetailed rib 6, beveled at its upper and lower edges, as clearly illustrated in Fig. 3 of the drawings, and fitting in a dovetailed groove or way 7 of a slidable frame 8, which carries a circular saw 9. The slidable frame 8, which is adapted to be moved backward and forward, as hereinafter explained, is provided at the front with transverse and longitudinal bearings 10 and 11, spaced apart, as shown, and receiving, respectively, a saw-arbor 12 and a drive-shaft 13. The circular saw, which may be made of any desired construction, is secured to the inner end of the saw-arbor, and it extends forwardly therefrom and is arranged adjacent to the right-hand ends of the jaws of the vise. The outer end of the saw-arbor is provided with a bevel-pinion 15, which meshes with a similar bevel-pinion 16 of the inner end of the longitudinal shaft 13, whereby when the latter is rotated motion will be communicated to the



saw-arbor for rotating the circular saw. The outer end of the longitudinal shaft, which is provided with a crank-handle 17, is supported by a bearing 18 of an arm 19, which is formed integral with the front portion of the slidable frame and which extends forwardly and upwardly therefrom, as clearly shown in Fig. 2 of the drawings. The crank-handle is located in advance of the vise and operates in a plane beyond the handle of the vise, which does not interfere with the operation of the mechanism for actuating the circular saw. The frame 8, which may be of any desired construction, is supported by transverse ribs 20 and 21, and it is adapted to be readily removed from the vise by sliding it off the dovetailed rib or guide 6. By this construction the saw attachment may be quickly applied to and removed from the vise.

The slidable frame is provided at its inner side with a longitudinal rack consisting of a series of projecting teeth 22, forming intervening recesses and adapted to be engaged by the inner end of a transverse lever 23, which extends from the left-hand side of the vise and which is provided at that side with a suitable handle or grip 24, adapted to be grasped by the operator for feeding the saw and for moving the same backward, as hereinafter explained. The grip or handle of the operating-lever 23 is located in convenient position to be grasped by the left hand of the operator without interfering with the use of the right hand for operating the crank-handle 17. The crank-handle and the operating-lever are simultaneously grasped by the operator, and the operation of the saw and the feeding thereof are simultaneous, and it is unnecessary to stop one operation in order to effect the other.

The operating-lever 23 is provided at its inner end with oppositely-disposed downwardly-diverging teeth 25, adapted to alternately engage the rack and formed by recessing or cutting away the lower face of the latter and beveling the upper and side faces thereof, as clearly illustrated in Fig. 6 of the drawings. The lever is tilted backwardly or forwardly to engage either of the teeth 25 with the rack of the slidable frame, and it is oscillated horizontally to move the frame backward or forward.

The lever is fulcrumed on the vise by means of a bracket 26, provided with a depending pivot 27, which is removably arranged in a vertical perforation or opening of a lug 28, formed integral with the stationary member of the vise and extending from the left-hand side thereof, as clearly shown in Fig. 3 of the drawings. The bracket is provided directly above the pivot 27 with an oppositely-beveled portion 29, from the apex of which extends a vertical lug or projection 30, which is received within an opening 31 of the lever. The lug is oblong in plan view, and the opening 31, which conforms to the configuration

of the lug at the lower face of the lever, has oppositely-beveled side walls and is flared upwardly to permit the lever to rock or tilt on the oppositely-beveled or upwardly-tapered fulcrum portion 29 of the bracket, whereby either of the teeth 25 may be engaged with the rack. The bracket, which extends upward above the lever, is provided with a horizontal top portion 32, forming an approximately L-shaped arm and extending inwardly over the vise and terminating directly above the lever 23 at a point adjacent to the inner end thereof. A coiled spring 33 is interposed between the extremity of the arm 32 and the inner portion of the lever 23 for holding either of the teeth 25 in engagement with the rack and for retaining the lever in operative position. The arm 32 is provided with a depending projection 34 for engaging the upper end of the spring, and the lever is provided with a similar projection 35, which extends upward from a boss or enlargement 36 and which engages the lower end of the coiled spring. The coiled spring is of sufficient length and strength to maintain the lever in engagement with the rack, and the lever is adapted to be readily rocked to engage either of its teeth with the rack, and it is capable of being oscillated to move the slidable frame backward or forward. By this construction the saw may be fed into the material with the desired rapidity, and it may be quickly withdrawn from the same when desired.

The slidable frame, which is detachably interlocked with the exterior guide, is removable therefrom at the end thereof. The bracket is located at the side of the vise opposite from the guide, and the feeding mechanism, which is mounted on the bracket, has a detachable engagement with the frame, so that it may be disconnected from the said frame to permit the latter to slide forwardly off the guide. When the attachment is in place, the operating crank-handle 17 is at the right-hand side of the vise and the feeding mechanism is at the left-hand side thereof, so that both may be simultaneously operated. The attachment may be quickly removed from the vise to permit the latter to be used for ordinary purposes.

By mounting a light milling-cutter on the saw-arbor the attachment can be effectively used for light milling-work.

What I claim is—

1. The combination of a vise provided at one side with an exteriorly-arranged guide extending transversely of the jaws of the vise, a frame slidably interlocked with the guide and removable at the end thereof, a saw mounted on the frame, means also mounted on the frame for operating the saw, and feeding mechanism located in rear of the jaws and extending transversely of the vise for sliding the frame backward and forward, the feeding mechanism having a detachable engagement



with the sliding frame, substantially as described.

2. The combination of a vise provided at one side with an exteriorly-projecting guide arranged below and extending transversely of the jaws of the vise, a frame slidably interlocked with the guide and removable at the end thereof, a saw carried by the frame, means also mounted on the frame for operating the saw, and feeding mechanism detachably secured to the vise and mounted independently of the slidable frame and constructed to move the latter backward and forward, said feeding mechanism having a detachable engagement with the sliding frame, substantially as described.

3. The combination with a vise having jaws at the front and operating means therefor in front of the jaws, of a guide located at one side of the vise and extending transversely of the jaws, a frame slidably engaged with the guide and removable therefrom, a saw mounted on the slidable frame, means also mounted on the frame for operating the saw, said saw-operating means being also located at the front of the vise adjacent to the vise-jaw-operating means, and feeding mechanism located at the opposite side of the vise from the said guide for moving the slidable frame backward and forward, said feeding device having a detachable engagement with the saw-frame, substantially as described.

4. The combination with a vise, of a frame slidably interlocked with the vise and detachable therefrom, a bracket also detachably mounted on the vise and located at the opposite side from the frame, and feeding mechanism mounted on the bracket for sliding the frame backward and forward, said feeding mechanism being mounted independently of the sliding frame and having a detachable engagement with the same, whereby the frame with the saw and the bracket with the feeding mechanism are each separately removable, substantially as described.

5. The combination with a vise, of a frame slidable thereon at one side thereof and detachable therefrom, a saw carried by the frame, and feeding mechanism for sliding the frame backward and forward, said feeding mechanism being detachably mounted on the vise at the opposite side from the frame and being independent of the latter and having a detachable engagement therewith, substantially as described.

6. The combination with a vise, of a slidable frame mounted on the vise and provided with a rack, a bracket pivotally mounted on the vise, and a lever mounted on the bracket and provided with means for engaging the rack, substantially as described.

7. The combination with a vise, of a slidable frame, a saw carried by the same, a pivoted bracket mounted on the vise, and a lever mounted on the bracket and provided with

means for engaging the frame, substantially as described.

8. The combination with a vise, of a slidable frame, a saw carried by the frame, a pivoted bracket mounted on the vise arranged to swing horizontally, a lever carried by the bracket and capable of rocking thereon, and means for holding the lever normally in engagement with the frame, substantially as described.

9. The combination with a vise, of a frame slidably interlocked with the vise at one side thereof and detachable therefrom, a bracket detachably mounted on the vise at the opposite side thereof, a saw carried by the frame, means for operating the saw, and feed mechanism mounted on the bracket, substantially as described.

10. The combination with a vise, of a frame slidably interlocked with the vise and removable therefrom, a bracket detachably pivoted to the vise, a saw carried by the frame, and a lever mounted on the bracket and engaging the frame, substantially as described.

11. The combination of a slidable frame having a rack, a saw carried by the frame, means for operating the saw, a pivotally-mounted bracket, a rocking lever carried by the bracket and provided with oppositely-disposed engaging portions to interlock with the rack, and means for holding the lever normally in engagement with the rack, substantially as described.

12. The combination of a slidable saw-carrying frame having a rack, a pivoted bracket having a tapered portion and provided thereat with a projection, and a lever mounted on the tapered portion of the bracket and having a flared opening to receive the projection, said lever being also provided with means for engaging the rack, substantially as described.

13. The combination of a slidable frame having a rack, a pivoted bracket, a rocking lever mounted on the pivoted bracket and provided with oppositely-disposed engaging portions to interlock with the rack, and a spring interposed between the bracket and the lever for holding the latter normally in engagement with the rack, substantially as described.

14. The combination of a slidable saw-carrying frame, a pivoted bracket having an arm, a rocking lever mounted on the bracket and provided with oppositely-disposed means for engaging the rack, a coiled spring interposed between the arm and the lever, and means mounted on the arm and on the lever for engaging the ends of the springs, 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.

ERVIN SAMUEL MUMMERT.

Witnesses:

JESSE SELL,

PAUL WERNER.