

No. 787,328.

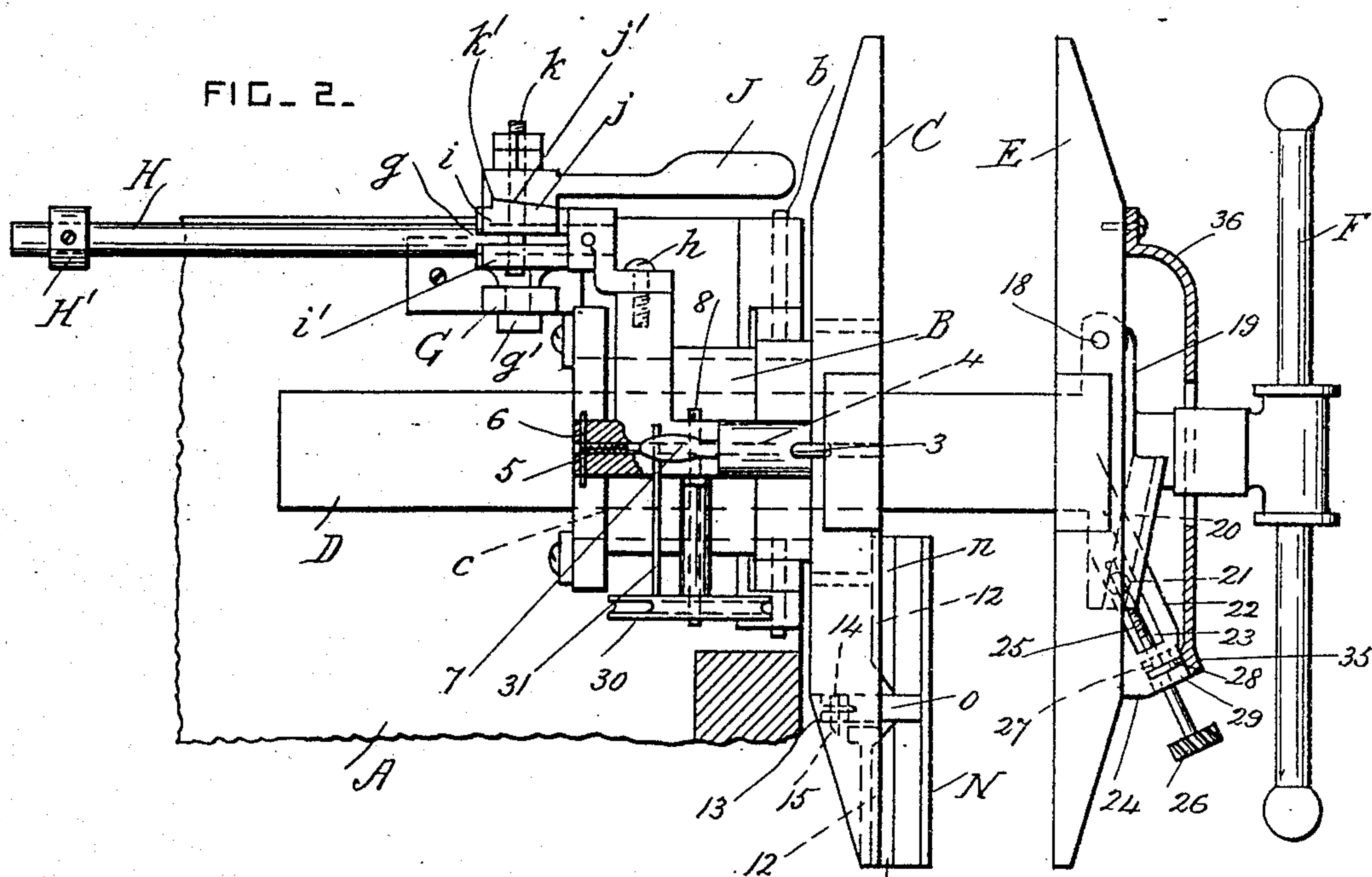
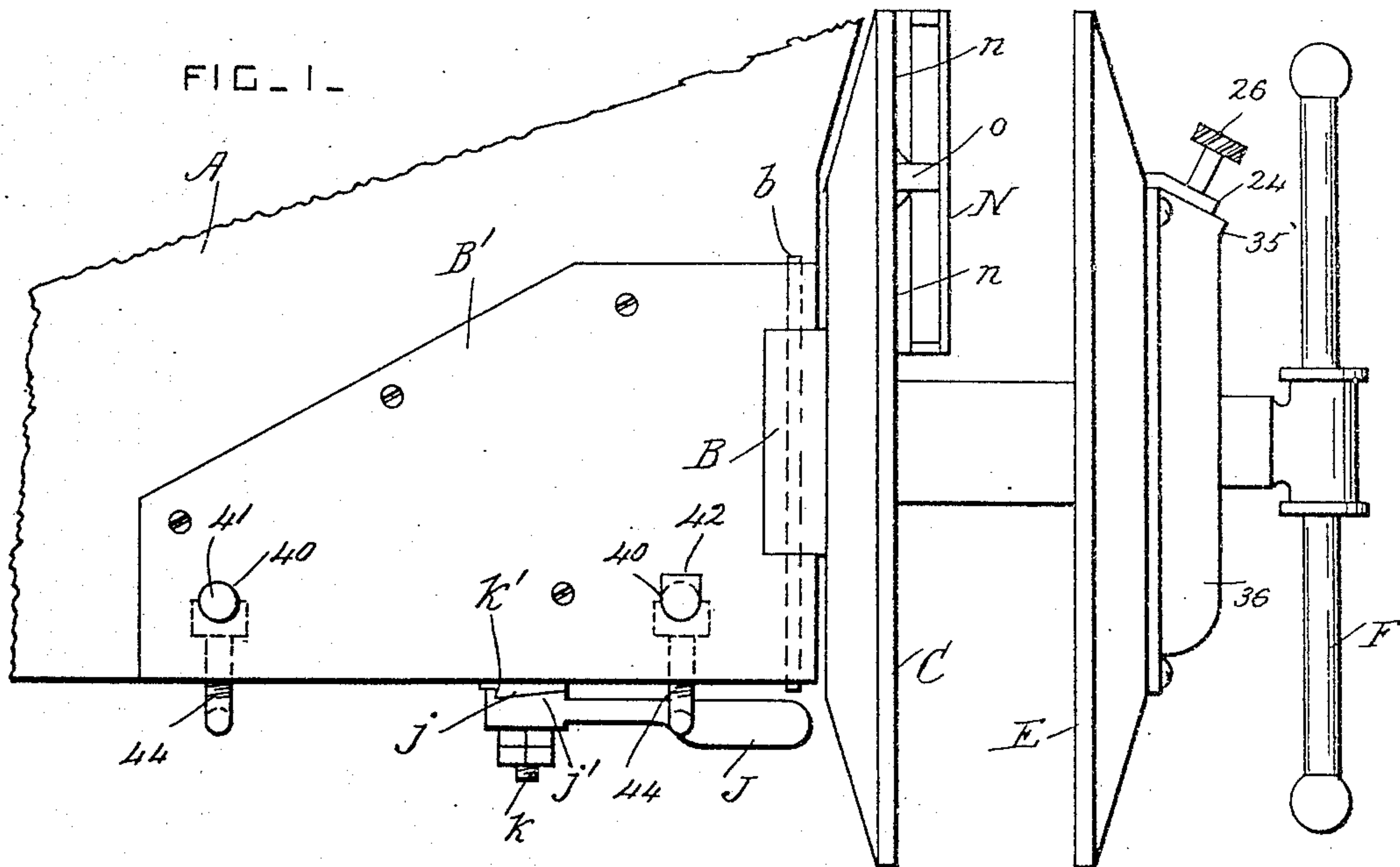
PATENTED APR. 11, 1905.

BEST-AVAILABLE COPY

J. F. EMMERT.
VISE.

APPLICATION FILED JUNE 1, 1904.

2 SHEETS—SHEET 1.



WITNESSES

James J. Sampson
Walter Allen

INVENTOR

Joseph F. Emmert.
by Herbert W. Jenner.
Attorney

BEST AVAILABLE COPY

No. 787,328.

PATENTED APR. 11, 1905.

J. F. EMMERT.

WISE.

APPLICATION FILED JUNE 1, 1904.

2 SHEETS—SHEET 2.

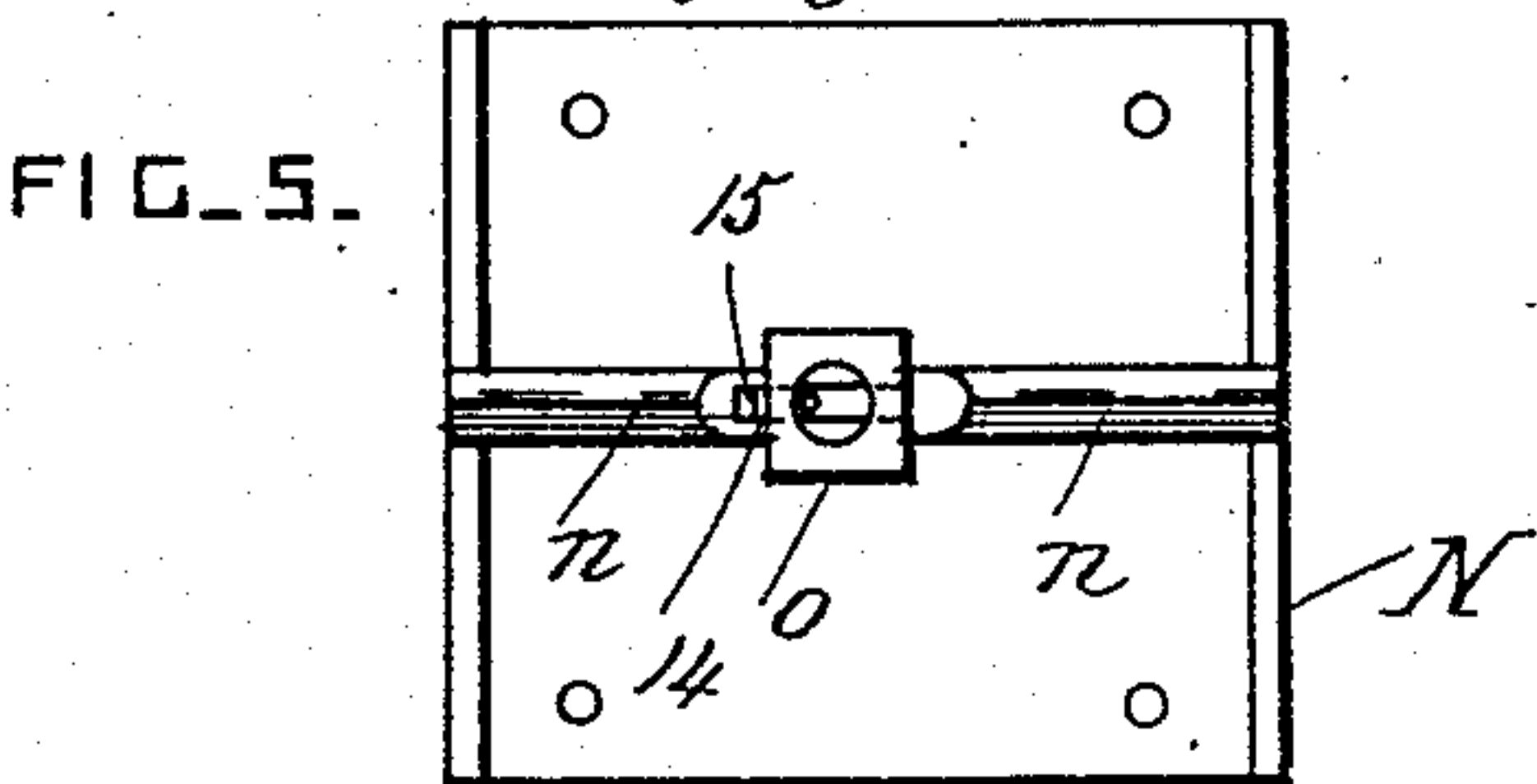
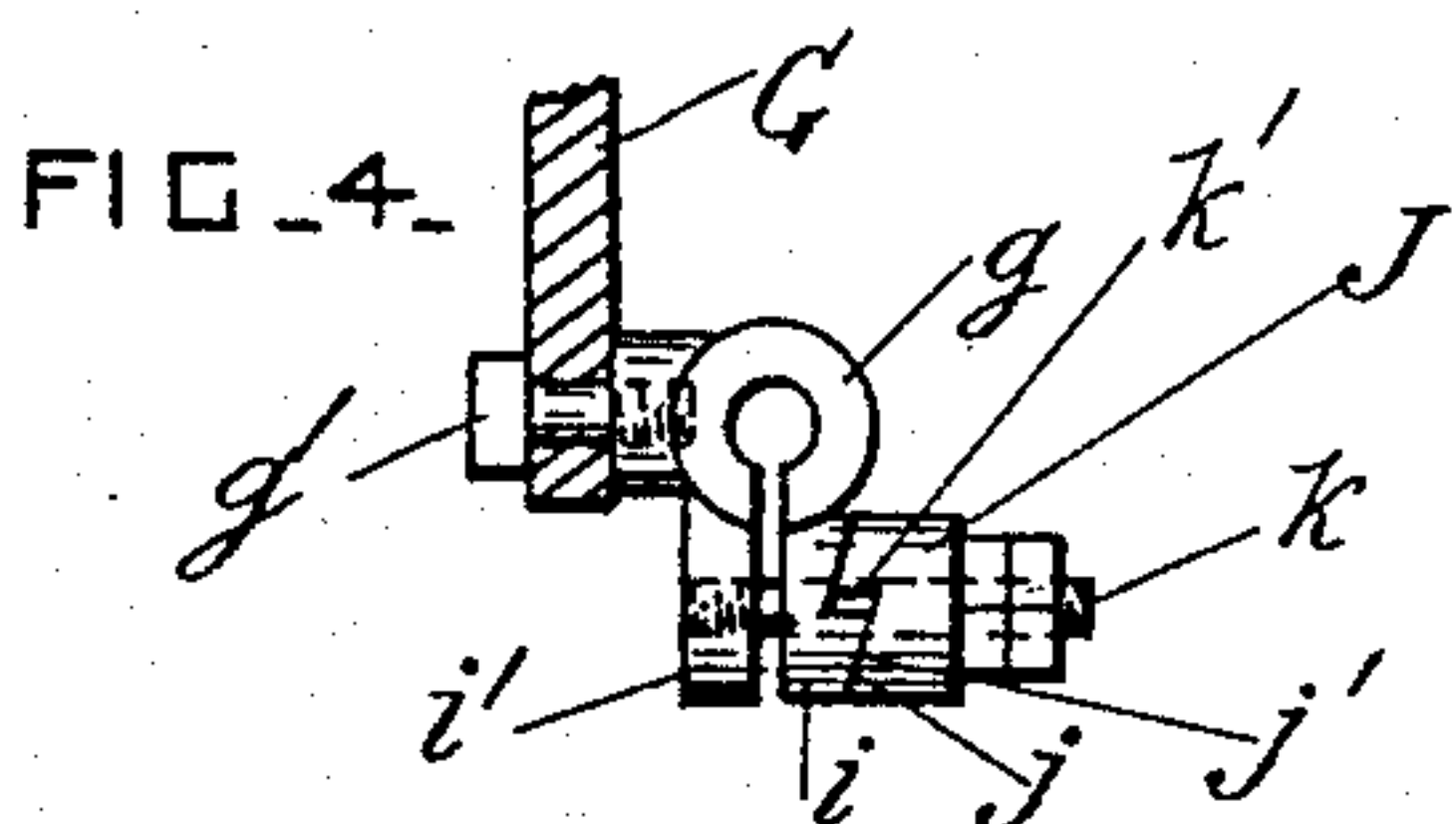
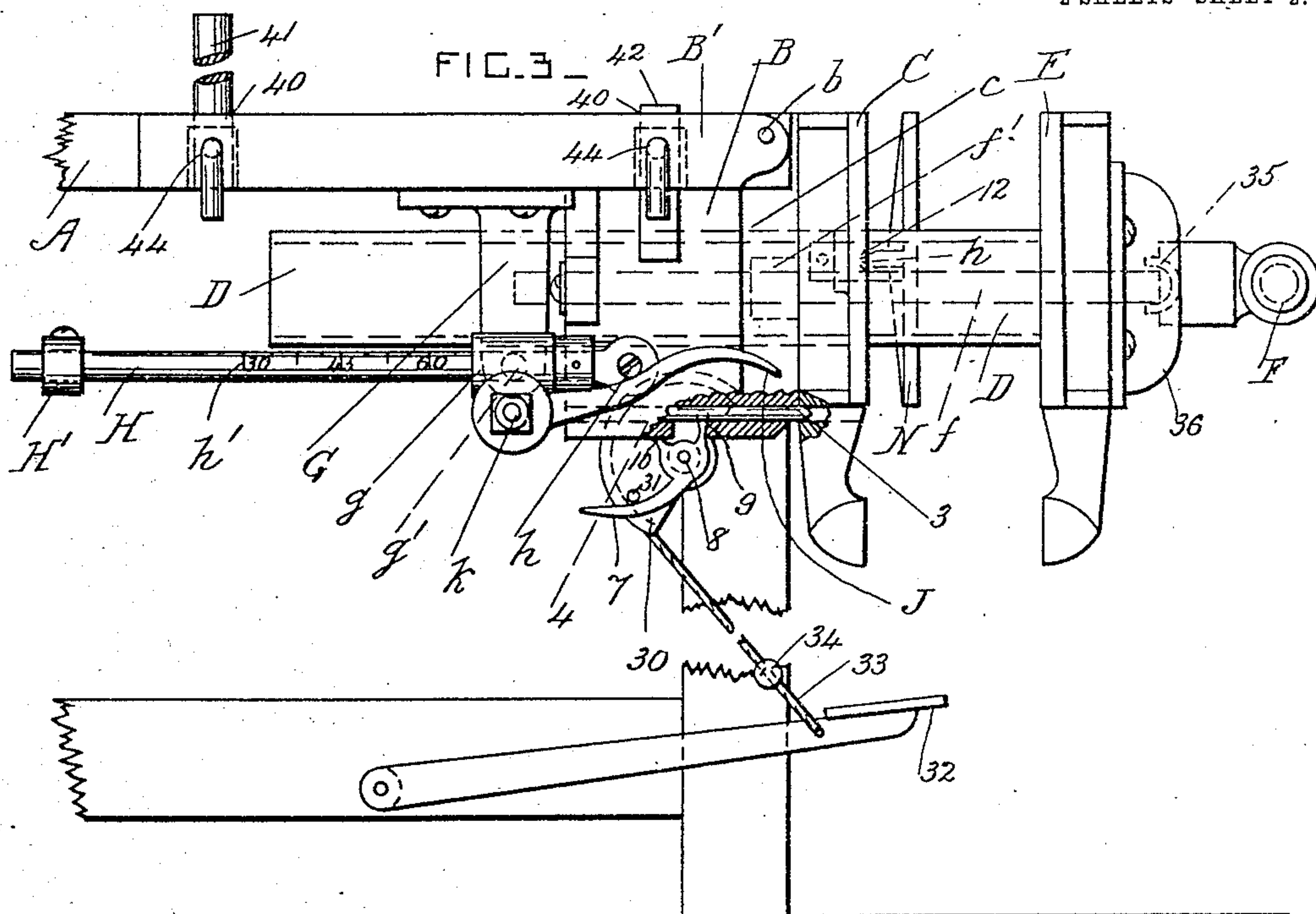
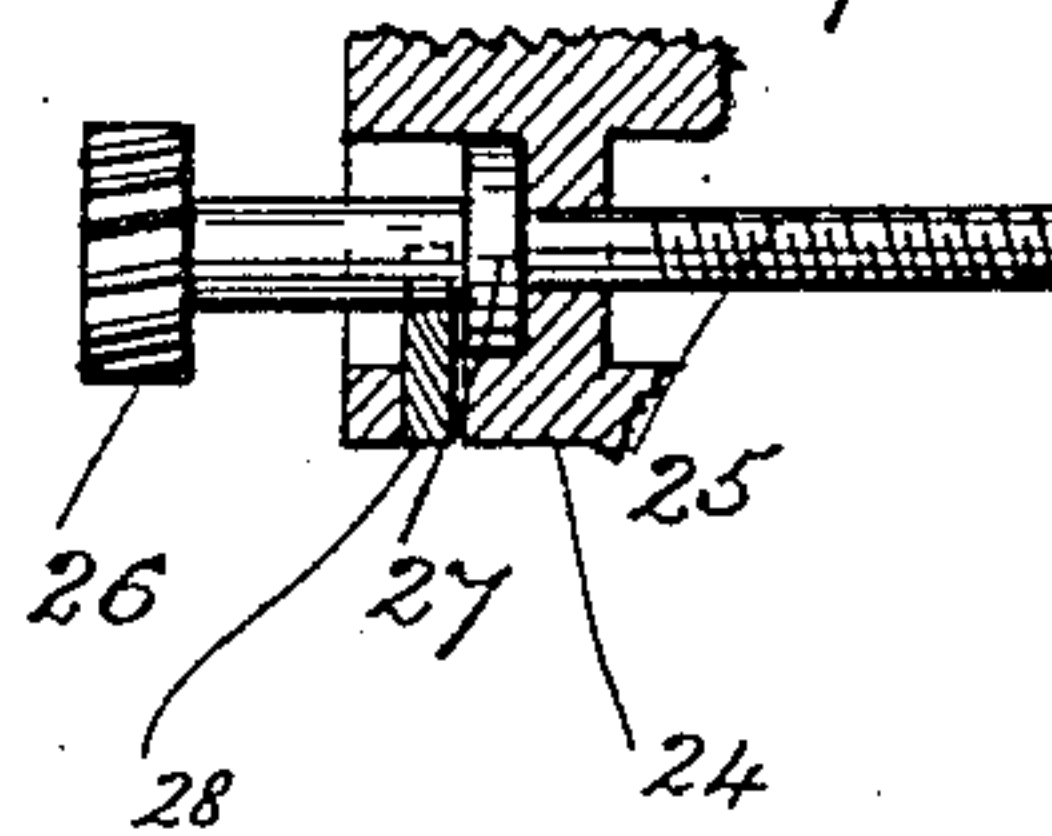


FIG. 6.



FIG. 7.



WITNESSES

James J. Sampson
Walter Allen

INVENTOR

Joseph F. Emmert.
by Robert W. Jenner.
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH F. EMMERT, OF WAYNESBORO, PENNSYLVANIA.

WISE.

SPECIFICATION forming part of Letters Patent No. 787,328, dated April 11, 1905.

Application filed June 1, 1904. Serial No. 210,665.

To all whom it may concern:

Be it known that I, JOSEPH F. EMMERT, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Vises; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vises of the kind shown and described in the Patent No. 457,710, issued to me on August 11, 1891; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the vise from above. Fig. 2 is a plan view of the vise from below and partly in section. Fig. 3 is a side view of the vise, partly in section. Fig. 4 is a detail end view of the spring-clip and its locking-cam. Fig. 5 is a plan view of the auxiliary vise-jaw. Fig. 6 is a detail view of the washer-segment. Fig. 7 is a detail view of the adjusting-screw.

A is a portion of a stationary support, such as a bench or work-table. B is a socket which is hinged to a plate B', secured to the bench in any approved manner, b being the pivot-pin of the hinge. C is the inner and non-slidable vise-jaw, which is provided with a sleeve c, which is journaled in the socket B. D is a hollow rectangular bar which slides longitudinally in the socket B and which supports the outer and slidable vise-jaw E. F is a handle for turning the vise-screw f, which works inside the hollow bar D in the usual manner and which engages with a nut f', carried by the sleeve c. These parts do not differ materially from those shown and described in the hereinbefore-mentioned patent.

The supporting hinge-plate B' is provided with two sockets 40 near the end of the bench for receiving a pillar 41 and a stop-pin 42, these parts being interchangeable in the sockets. Clamping-screws 44 are provided for securing the pillar and pin in the sockets, and the pillar is used as a support for a drill-

ing attachment, (not shown,) which is supported by it over the vise-jaws.

In order to secure the vise at different angles, a bracket G is secured to the under side of the bench A, and a spring-clip g is pivoted to this bracket by a pin g'.

H is a rod which is slidable longitudinally in the spring-clip and which has an angle-bracket at one end which is pivoted by a pin h to a boss on the lower and rear part of the socket B. Graduation-marks h' are formed on the rod H to indicate the angle of the vise. A check-collar H' is secured to the free end portion of the rod H. The spring-clip g has two opposed lugs i i', and one of these lugs, i, has an inclined cam-surface j.

J is a handle which is pivoted on a pin k, which is secured to the stationary lug i', and this handle has an inclined cam-surface j', which works against the cam-surface j. Stop-shoulders k' are formed at the ends of the inclined cam-surfaces to prevent the handle from being moved too far in one direction. The vise is set to any angle by turning it by hand on its pivot or hinge, and it can then be clamped by pressing the handle J downward, so as to cause the rod to be gripped by the spring-clip, which is actuated by the said cam-surfaces. The cam-surfaces do not wear out rapidly and slip the same as the threads of a screw, as heretofore used, and as the spring-clip has a large bearing-surface in contact with the rod H the said rod is held securely with very little pressure when the spring-clip is contracted by the cam-surfaces.

The sleeve c is revoluble in the socket B, so that the vise-jaws can be turned around, and in order to lock the sleeve to the socket in various positions a longitudinally-slidable locking-bolt 3 is provided. This bolt slides in a hole 4 in a lug on the under side of the socket B, and the end portion of it engages with holes formed in the inner vise-jaw at various points. A spiral spring 5 is arranged in the hole 4 behind the end of the bolt 3 and is held in position by a cross-pin 6. A trigger 7 is pivoted on a pin 8 in a slot in the side of the socket B, and this trigger is provided with a nose 9 for engaging with the bolt 3

and a stop 10 to bear against the socket and prevent the trigger from being moved too far back. When the bolt is retracted by means of the trigger, the vise-jaws may be
5 revolved on their axis.

A grooved quadrant or arm 30 is secured on the trigger-pin 8 and is provided with a projecting pin 31 for actuating the trigger. A treadle 32 is pivoted to the work-bench
10 and is connected with the quadrant by a flexible connection 33, having a take-up 34. In this manner the bolt 3 may be operated by hand or by foot, as convenient.

The face of the inner and non-slidable vise-jaw C is provided with angular grooves 12
15 and a rectangular hole 13.

N is an auxiliary vise-jaw having knife-edges *n* on its back, which engage pivotally with the grooves 12. This jaw also has a
20 rectangular stem *o* for engaging loosely with the hole 13. The end portion of the stem *o* has a spring-actuated latch 14, provided with a beveled end 15. This latch slides in a cross-hole in the stem and is pushed back
25 when the stem is placed in the hole. As soon as the end portion of the stem projects at the rear of the main vise-jaw the latch springs forward and holds the auxiliary vise-jaw in position, but permits it to rock on its
30 knife-edges and adjust itself to the angle of any irregular piece of work.

The outer vise-jaw E is pivoted by a pin 18 to a forked head 19 on the bar D, and the head 19 has radial slots 20, in which a nut 21
35 is slidable. The vise-jaw E has a central lug 22 on its back, which works in the fork of the head 19 and which has an inclined slot 23, which also engages with the nut 21. The vise-jaw E has also a boss 24 at the end of the
40 lug 22, and 25 is an adjusting-screw having a milled head 26 and a collar 27. These parts are similar to the corresponding parts described and claimed in the hereinbefore-men-
45 tioned patent, No. 457,710, and their function is to enable the vise-jaw E to be set at various angles with the vise-jaw C. When the screw 25 is revolved in one direction, the jaw E is inclined in one direction, and when the motion of the screw is reversed the said
50 jaw is moved in the reverse direction. The collar 27 is journaled in a recess in the boss 24, and 28 is a washer-segment, which is slipped into a cross-slot 29 in the boss 24 after the screw 25 has been placed in position. The
55 washer-segment engages with the collar 27, so that the screw cannot slide longitudinally. The washer-segment is held in position by a bridge-piece 35, formed on a cap 36, which is secured to the back of the vise-jaw E. This
60 cap protects the working parts from dirt, and its bridge-piece straddles the boss 24 and bears against the washer-segment, so that it cannot slide out of position. When constructed in this manner, the washer 28 pre-

vents the end play of the screw instead of a
65 projection on the cap, as in the hereinbefore-mentioned patent, No. 457,710, and the parts can be fitted together to work more accu-
rately and with less labor and expense.

What I claim is—

1. The combination, with a stationary sup-
70 port, a socket hinged thereto, and vise-jaws carried by the said socket; of a bracket se-
cured to the said support, a spring-clip piv-
75 oted to the said bracket, a rod pivoted to the said socket and slidable longitudinally in the said clip, and a handle pivoted to the said clip and provided with an inclined cam-surface for contracting the said clip upon the rod, substantially as set forth. 80

2. The combination, with a stationary sup-
85 port, a socket hinged thereto, and vise-jaws carried by the said socket; of a bracket se-
cured to the said support, a spring-clip piv-
80 oted to the said bracket, a rod pivoted to the said socket and slidable longitudinally in the said clip, and a handle pivoted to the said clip and provided with an inclined cam-sur-
90 face for contracting the said clip upon the rod, said clip and handle being also provided with interlocking stops which limit the movement of the handle in one direction, substantially as set forth.

3. The combination, with a supporting-
95 socket provided on one side with a hole and a slot, a slidable outer vise-jaw provided with clamping mechanism, and a vise-jaw pro-
vided with a sleeve which is journaled in the said socket; of a locking-bolt slidable in the said hole and engaging with the said vise-jaw, 100
a trigger pivoted on a pin in the said slot and engaging with the said bolt, an arm secured on the said pin and provided with a projec-
105 tion for engaging with the said trigger, a treadle, and a connection between the said treadle and arm, substantially as set forth.

4. The combination, with a supporting-
110 socket provided on one side with a hole and a slot, a slidable outer vise-jaw provided with clamping mechanism, and a vise-jaw pro-
vided with a sleeve which is journaled in the said socket; of a locking-bolt slidable longi-
115 tudinally in the hole in the said socket and engaging with the said vise-jaw, a spring se-
cured in the said hole behind the said bolt, and a trigger pivoted in the said slot and pro-
vided with a nose for operating the said bolt and a stop for limiting its motion in one di-
rection, substantially as set forth.

5. The combination, with a pair of vise-
120 jaws, and clamping mechanism, one of the said jaws having a guide-hole formed trans-
versely through its face; of an auxiliary vise-jaw having a knife-edge on its back and a
125 stem which also projects from its back and in advance of the said knife-edge and which is slidable loosely in the said guide-hole, so that the said auxiliary vise-jaw may tilt with its

said knife-edge in contact with the face of the vise-jaw which supports it.

6. The combination, with a pair of vise-jaws, and clamping mechanism, one of the said jaws having a guide-hole and two grooves in its face, arranged one on each side of the said guide-hole; of an auxiliary vise-jaw having a projecting stem at the middle part of its back which stem is slidable loosely in the said

guide-hole and having also two knife-edges 10 which engage pivotally with the said grooves.

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

JOSEPH F. EMMERT.

Witnesses:

ALF. N. RUSSELL,
CHARLES RIDER.