

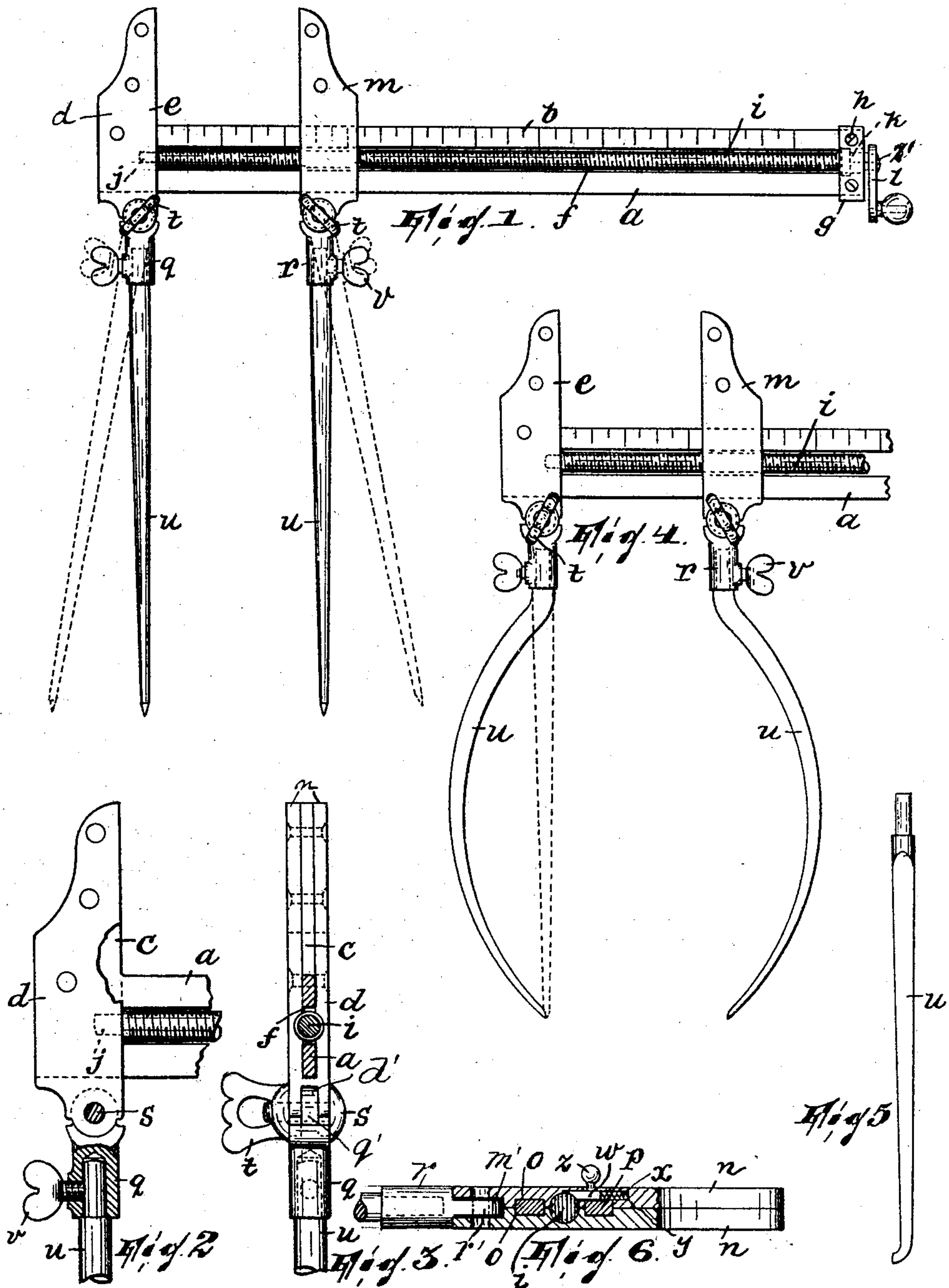
No. 764,937.

PATENTED JULY 12, 1904.

S. FRIEDMAN.
MACHINIST'S COMBINATION TOOL.

APPLICATION FILED FEB. 9, 1904.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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MACHINIST'S COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 764,937, dated July 12, 1904.

Application filed February 9, 1904. Serial No. 192,755. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND FRIEDMAN, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Machinists' Combination-Tools; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a simply-constructed, inexpensive, and durable combination measuring instrument for use by machinists or the like; and it consists in certain features of construction combined and arranged substantially as hereinafter set forth and claimed in such manner as to attain the objects mentioned.

My invention will be found fully illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view thereof. Fig. 2 is a view of the left-hand end portion of the instrument, showing certain parts broken away and others in section. Fig. 3 is a sectional view taken transversely of the instrument between two of the heads or jaws *e*, hereinafter referred to, and looking toward the left-hand one. Fig. 4 is a plan view of the left-hand portion of the instrument as shown in Fig. 1, but provided in this instance with calipers instead of dividers, as in Fig. 1. Fig. 5 shows another form of caliper-leg that may be used; and Fig. 6 is a transverse section through one of the heads or jaws above referred to, showing a modification of the invention.

a is a steel arm in the form of a plate or strip, one of whose edges is divided off, as at *b*, to any desired degree after the manner of a rule and having one end turned off at right angles, as at *c*, Fig. 2. The part *c* is reinforced or thickened up by a bifurcated block *d*, (see Fig. 3,) riveted thereto, so that the whole forms, as at *e* in Fig. 1, the head of a square or one jaw of a sliding caliper. The plate *a* is provided with a lengthwise slot *f*, and the thus divided portions of the plate are

held together at the end remote from the head or jaw by a block *g*, into which said plate projects and which may be secured to said plate by screws *h*. In the slot *f* is arranged a screw *i*, one of whose ends, *j*, is reduced and journaled in the plate *a* between the bifurcated portions of the block *d* and the other, *k*, of which is journaled in the block *g* and squared, receiving at its extremity a crank *l* or other form of handle for rotating the screw. *m* is the part forming the other head or jaw of the sliding caliper. This is in the form of two plates *n*, riveted together and provided with corresponding grooves *o*, each of which receives one of the two members *p* of the plate *a*, formed by dividing the latter lengthwise by the slot *f*. The screw *i* has an internally-threaded engagement with the plates *n* of the jaw or head *m*, so that when the screw is rotated the jaw or head is moved lengthwise of the plate *a*—that is to say, adjusted with reference to the jaw or head *e*. As so far described, the instrument is adapted for use as a sliding caliper.

Hinged to the block *d* on the end thereof remote from the divisions *b* on plate *a* is a holder *q*, and similarly hinged to the head *m* is another holder, *r*. The head or jaw which comprises block *d* is forked at *d'*, at one end receiving a projection *q'* of holder *q*, and the plates *n* are at one end of head or jaw *m* spaced, as at *m'*, receiving a projection *r'* of holder *r*. The pivot between each holder and the corresponding head or jaw is formed in each instance by a screw *s*, which carries a thumb-nut *t*, whereby the holder may be clamped in any position to which it is pivotally adjusted. Each holder forms a socket for the reception of one of two legs *u*, which may be either formed, as in Fig. 1, as the legs of a pair of dividers, or, as in Figs. 4 and 5, as the legs of calipers of different shapes, such leg being held in place in the holder by a set-screw *v*.

As thus far described the instrument is adapted not only as a sliding calipers, but as a dividers or calipers having pivoted legs, adjustment being possible both by turning the screw to adjust the head *m* and by moving either leg *u* on its pivot *s*.

In order to make possible the quick setting

of the head *m* to approximately the point on the plate *a* to which is to be adjusted, the part of the head *m* which immediately engages the threading of the screw may be the form of a
5 disconnective connecting means between said head *m* and the screw.

In Fig. 6, *w* is a sliding block having one end threaded and normally held in engagement with the threading of the screw *i* by a
10 spring *x*, disposed between said block and the end of the recess *y* in the head *m*, in which said block is mounted. *z* is a knob carried by said block, whereby to press it back out of engagement with the screw, so that the head
15 will be free to be slid lengthwise on the plate *a*. Of course in this case it will be understood that the screw *i* has no direct connection with the head *m*, the opening for the screw through the head being in this instance
20 smooth.

In using the instrument as a square it may be found convenient to remove the head *m* from the arm *a*. For this purpose the crank *l* may be secured on the squared portion *k* of
25 the screw *i* by a screw *z'*, so that the crank *l* can be removed, whereupon the screws *h* may be removed, so as to detach the block *g* and permit the head *m* to be slid off the arm.

Having thus fully described my invention,
30 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of an elongated longitudinally-slotted plate provided with divisions and thus forming a scale and also having at
35 one end an integral turned-off portion, a bifurcated block receiving said end of the plate

and the turned-off portion thereof and secured thereto and thus forming a fixed head or jaw, said head or jaw being forked at one end thereof, a holder pivoted in the forked portion of
40 said head or jaw, a sliding head or jaw arranged to move on said plate, a screw arranged in the slot of said plate and journaled in said first-named head or jaw and having its thread engaging the sliding head or jaw, and another
45 holder pivoted in said sliding head or jaw, substantially as described.

2. The combination of an elongated longitudinally-slotted plate provided with divisions and thus forming a scale, a head or jaw fixed
50 to said plate at one end thereof, a holder pivoted in said head or jaw, a movable head or jaw comprising plates secured together on opposite sides of said elongated plate and having
55 opposed slots receiving the portions of said elongated plate which are separated by the slot of the latter, said plates being spaced at one end of said movable head or jaw, another
60 holder pivoted in between the spaced portions of said plates, and a screw journaled in said fixed head and disposed in the slot of the elongated plate and having its thread engaging said movable head or jaw, substantially as described.

In testimony that I claim the foregoing I
65 have hereunto set my hand this 8th day of February, 1904.

SIGMUND FRIEDMAN.

Witnesses:

JOHN W. STEWARD,
ROBERT J. POLLITT.