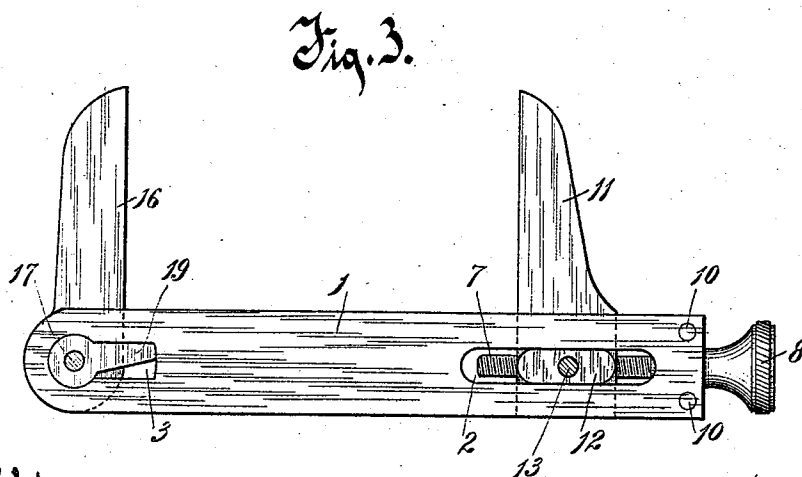
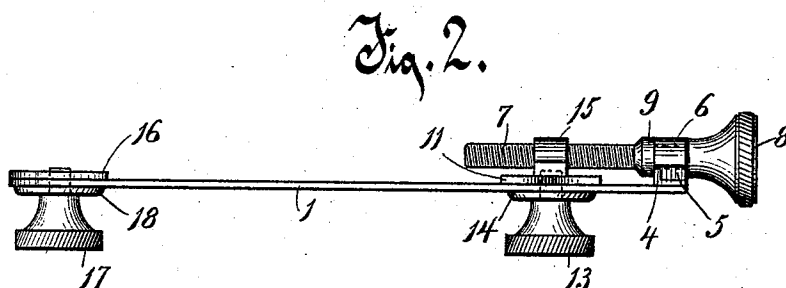
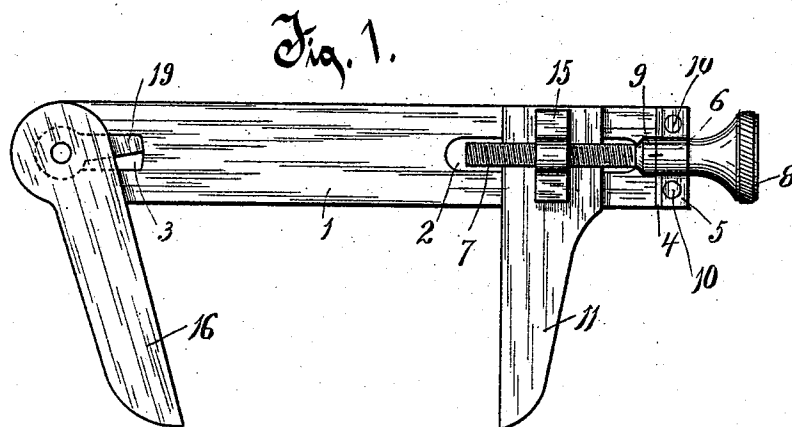


(No Model.)

T. FRANCIS.
GAGE.

No. 529,613.

Patented Nov. 20, 1894.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS FRANCIS, OF STEVENS' POINT, WISCONSIN, ASSIGNOR OF ONE-HALF TO JOHN S. SEELEY, OF CHICAGO, ILLINOIS.

GAGE.

SPECIFICATION forming part of Letters Patent No. 529,613, dated November 20, 1894.

Application filed January 19, 1894. Serial No. 497,378. (No model.)

To all whom it may concern:

Be it known that I, THOMAS FRANCIS, of Stevens' Point, in the county of Portage and State of Wisconsin, have invented a new and useful Improvement in Gages, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in gages.

The dies used in bolt cutting and pipe cutting machinery consist of four chasers or dies inserted in radial recesses in an iron disk or collet, encircled by a heavy wrought iron or steel ring, with adjusting screws. Each chaser or die is beveled in the ring, and screws or levers serve to draw down said ring, and move the chasers or dies simultaneously toward the center to reduce the cutting size of the die. Unvarying and constant exactness in size and threads is secured by the use of special machinery and gages.

It is the object of my invention to provide a simple, efficient and inexpensive gage for the purpose stated, and with this object in view, the invention consists of the devices and parts as hereinafter described or claimed, or their equivalents.

In the accompanying drawings, Figure 1, is an elevation of one side of the device, showing the adjustable foot at an angle. Fig. 2, is an edge view, and Fig. 3, is an elevation of the side of the device opposite to that shown in Fig. 1, the clamping screws being shown in section, and the adjustable foot illustrated at right angles to the bar.

Like numerals of reference denote like parts.

Referring to the drawings the numeral 1 indicates the main bar of the gage, said bar provided near one end with an elongated slot 2, and at the opposite end with a shorter slot 3. At the extremity of that end of the bar where the slot 2 is located is an angular lug 4, into which fits a block 5, said block having a semi-circular raised portion 6.

The numeral 7 indicates a screw, having an integral head 8. Medially on the screw is formed a collar 9, and that portion of the screw between this collar and the head is encircled by the semi-circular raised portion of

the block 5, whereby said screw is held against longitudinal movement. The block is held down to the lug 4 by means of rivets or screws 10, 10. This forms a very convenient structure, inasmuch as, notwithstanding the fact that the screw and its head are in one piece, the screw is readily arranged so as to be held against longitudinal movement. Ordinarily, in order to accomplish this, it is necessary to provide the screw with a detachable head.

The numeral 11 indicates an adjustable cross bar, said bar provided on one side with a guiding lug 12 which fits in the elongated slot 2 of the bar 1. A clamping screw 13 enters this lug, and said screw carries a washer 14, which is clamped against the side of the bar by the head of the screw, when the proper adjustment of the cross bar is secured. The opposite side of the adjustable cross bar is formed or provided with a lug 15, said lug having a screw threaded aperture therein to receive the end of the screw. The face of the bar may, if desired, be graduated to inches, and very minute sub-divisions of inches. If desired, and for convenience, the opposite side may also be similarly graduated. The semi-circular raised portion 6 of the block 5 and the collar 9 of the screw have index marks thereon, as clearly shown in the drawings, said marks normally registering. The screw is made of any desirable pitch, so that one complete revolution of the head of the screw will move the sliding bar a fixed or determined distance.

At the end of the main bar opposite to the end carrying the cross bar is arranged an adjustable foot 16. A clamping screw 17 passes through the slot 3 and engages the adjustable foot on the opposite side of the bar. This clamping screw carries a washer 18, which is adapted to be brought to bear against the side of the bar, and is also provided medially with a limiting finger or stop 19, the head of said stop or finger being of circular form to fit the correspondingly shaped enlargement of the slot, while the remaining portion of the finger fits in the elongated part of the slot, and is of less width than the same. It will be apparent that by loosening this screw the foot 16 may be adjusted to any desired angle. In Fig. 1 it is shown as adjusted to a

certain angle, while in Fig. 3 it projects out at right angles to the bar, and parallel with the adjustable cross bar, for the purpose of taking the measurements of square heeled dies. By providing for the adjustability of the foot, I can arrange the same to fit the heels of chasers or dies, die cases, or die blocks, of any angle within the limit of movement of the finger 19. I do not wish to be understood, however, as limiting myself to an adjustable foot for the gage, inasmuch as in some instances a stationary foot arranged at the proper angle, will answer every purpose, as for instance, in fitting the chasers or dies where only one make or class on a machine is used.

From the construction above explained, it will be seen that I provide a most simple and useful device for manufacturers, machinists, tool makers, and others, to aid in fitting, re-fitting, grinding, adjusting, and readjusting the chasers forming part of the dies used in the manufacture and operation of the various designs and styles of bolt cutting and pipe cutting machinery, the length or "end measurement" of said chasers or dies being thereby capable of ascertainment with great exactness.

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

1. A gage consisting of a main bar provided with an elongated slot, a cross bar having upon one side a lug engaging the slot and guided thereby, and upon its opposite side another lug having a screw threaded aperture therein, a clamping screw engaging the guiding lug, and an adjusting screw held against longitudinal movement, and engaging the threaded aperture of the other lug of the cross bar, substantially as set forth.

2. A gage, consisting of a main bar provided with a slot, a foot piece, and a clamp-

ing screw passing through the slot and engaging the foot piece, said screw provided medially with a stop finger or lug fitting loosely in the slot of the main bar, said finger or lug adapted to limit the degree of adjustment of the foot, substantially as set forth.

3. A gage, consisting of a main bar provided with a slot, said slot having a circular enlargement at one end, a foot piece, a clamping screw passing through the slot and engaging the foot piece, said screw carrying medially a stop finger or lug, one end of said finger or lug being of circular form to fit and register with the circular enlargement of the slot, and the straight portion of said finger being of less width than the corresponding portion of the slot, a cross bar, and means for adjusting said cross bar on the main bar, substantially as set forth.

4. A gage consisting of a main bar provided with slots at opposite ends, one of said slots having a circular enlargement, a cross bar provided with a lug fitting in and guided by one of the slots, a clamping screw engaging the lug, an adjusting screw held against longitudinal movement, and engaging a threaded opening of the cross bar, a foot piece, and a clamping screw passing through the other slot and engaging the foot piece, said screw carrying medially a stop finger or lug, one end of said finger or lug being of circular form to fit and register with the circular enlargement of the slot, and the straight portion of said finger or lug being of less width than the corresponding portion of the slot, substantially as set forth.

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

THOMAS FRANCIS.

Witnesses:

G. W. CATE,
D. LLOYD JONES.