

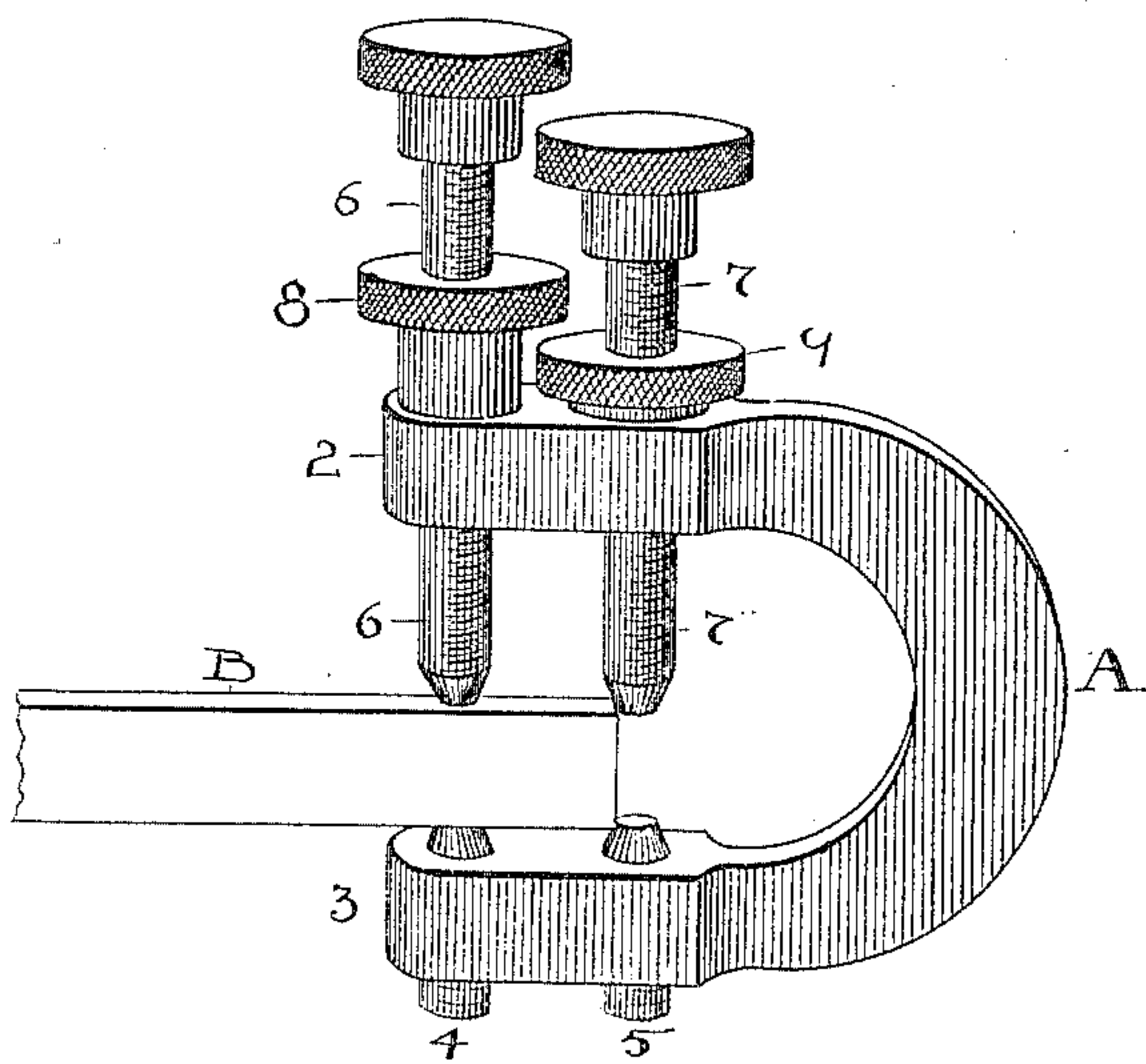
No. 640,448.

Patented Jan. 2, 1900.

J. D. COX, JR.
ADJUSTABLE LIMIT GAGE.

(Application filed Apr. 5, 1899.)

(No Model.)



ATTEST

W. B. Moser
H. E. Medra

INVENTOR.

JACOB D. COX, JR.

BY

W. F. Fisher

ATTY

UNITED STATES PATENT OFFICE.

JACOB D. COX, JR., OF CLEVELAND, OHIO.

ADJUSTABLE LIMIT-GAGE.

SPECIFICATION forming part of Letters Patent No. 640,448, dated January 2, 1900.

Application filed April 5, 1899. Serial No. 711,833. (No model.)

To all whom it may concern:

Be it known that I, JACOB D. COX, Jr., a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Adjustable Limit-Gages; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in what may be termed "adjustable" limit-gages; and the object of my invention is to provide a gage or tool which is adapted to make at least two different measurements or tests of a piece of work in practically the same movement and without change of the tool or the work therein and in which the immediate gaging mechanism or points are adaptable to a wide range of sizes and kinds of work, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawing the invention is illustrated in a single figure, which represents a perspective elevation of my new and improved gage or so-called "tool."

A is the body of the gage or tool, having by preference a substantially U shape and fashioned with two arms or sides having their outer portions 2 and 3 parallel to each other. The gage mechanism is set in these arms and comprises two threaded or fixed plugs 4 and 5 side by side successively in the arm 3 and two oppositely-arranged adjustable screws 6 and 7, provided with milled heads, to be easily rotated by hand, and having jam-nuts 8 and 9, respectively, to lock them firmly in any adjusted position.

I am of course aware that a great variety of gages of widely different constructions and designed for a large variety of uses have long since been known and that differential gages or gages with a plurality of determining-points in themselves are not, broadly, new; but I am not aware that any one has ever before known or used a gage which has the novel features and advantages of the present invention. For example, I am acquainted with a gaging-tool which has a set of fixed jaws at each end resembling an old-fashioned cast-iron wrench having two or more pairs of jaws

for different sizes of nuts. In the said gaging-tool the jaws at one end are accurately graduated to a given size and the jaws at the other end are graduated to a less or a larger size, and the two sizes differ; but the jaws at both ends are fixed, and in use the tool has to be reversed or turned end for end to apply it to the work.

Of course in tools of the kind to which my invention relates it is known to be essential that at least two measurements should be made, not so much that either alone shall accomplish the whole result, but that by means of the two together a complete and satisfactory result may be arrived at. This occurs by having one screw—say the first—adjusted to determine the maximum size of the article being gaged, whatever it may be. Then having passed this test and entered in past screw and its companion part or plug the fact that the article is sufficiently reduced in size is evident, or otherwise it would have been stopped by the gage-points 4 and 6; but whether it is not too small remains yet to be determined. This requires another measurement wherein the gage-points next to be tried are set correspondingly closer than in the first instance, and the differences between the two sets of points may be exceedingly fine, if desired. In the present case the difference is great enough to be discernible by the eye, especially by the aid of the object or article B, which is intercepted by the screw 7. In making this second measurement the stock or article B projects through between plug 4 and screw 6, and they are thus utilized as guides and helps in taking the further measurement, and this might be succeeded by still another, if desired—that is, a third set of gage-points could be introduced in the same tool or instrument, and by "set" I mean one of the screws and its companion plug or part below. It will be noticed, therefore, that all the measurements are taken by adjustable means and that when the tool is applied to the stock or the stock to the tool for making one measurement it is carried along without removal to the next succeeding test or tests, one or more.

Instead of separate points 4 and 5 there might be a continuous piece laid in or fixed to that arm and serve the same purpose in

connection with the two screws; but the separate formation is deemed altogether preferable.

In lieu of screws 6 and 7 I might use any equivalent thereof, such as an unthreaded stem or pin inserted in the same place and relation of the screws and held adjustably therein by means of clamps or other equivalent means adapted to lock the pins in any adjusted position. One way of clamping would be to split the arm on the line of the pins and bolt through transversely to tighten them up. The same might also be done in the other arm carrying the points 4 and 5. Hence the invention comprises, broadly, a plurality of adjustable gage-points in a tool of this kind adapted to effect successive gaging from one depth to another without reversing or removing the tool.

What I claim is—

1. As a new article of manufacture, an adjustable limit-gage having a body and two opposite arms formed in a single piece, a plurality of independently-adjustable gaging-

points projecting through one arm and matching points in the opposite arm, said points in both arms being set successively one behind the other from the ends of the arms, whereby in using the gage one set of opposed points is passed before the other adjustable set is reached, substantially as described.

2. A tool substantially as described consisting of a rigid double-armed body and a plurality of separately-adjustable gaging-points in successive pairs from the ends of the arms, and means to adjustably fix the distance between each set of points independently of the other set, whereby one pair of points can be made to serve one purpose and the next succeeding pair another purpose, substantially as described.

Witness my hand to the foregoing specification this 28th day of March, 1899.

JACOB D. COX, JR.

Witnesses:

H. T. FISHER,
R. B. MOSER.