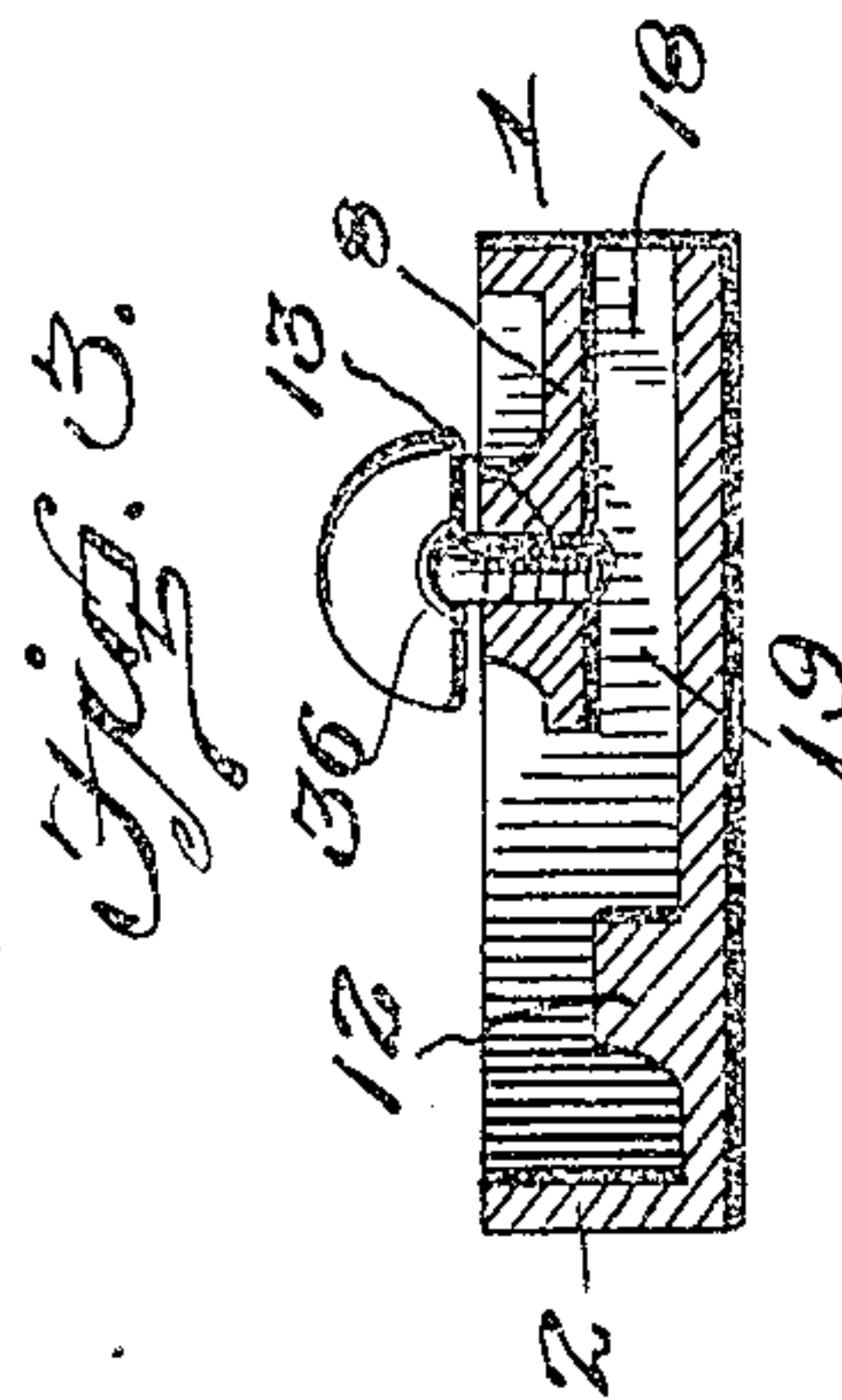
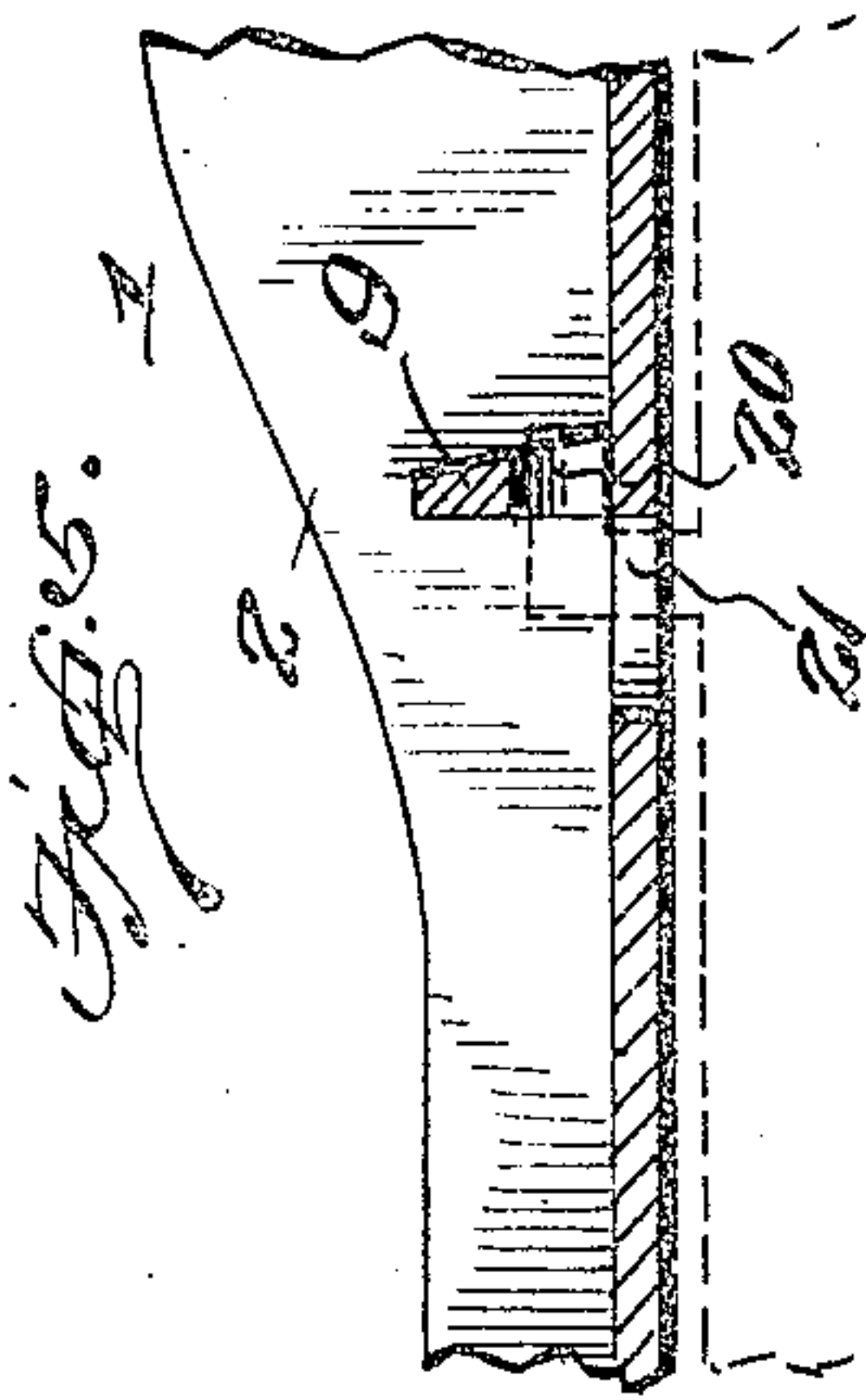
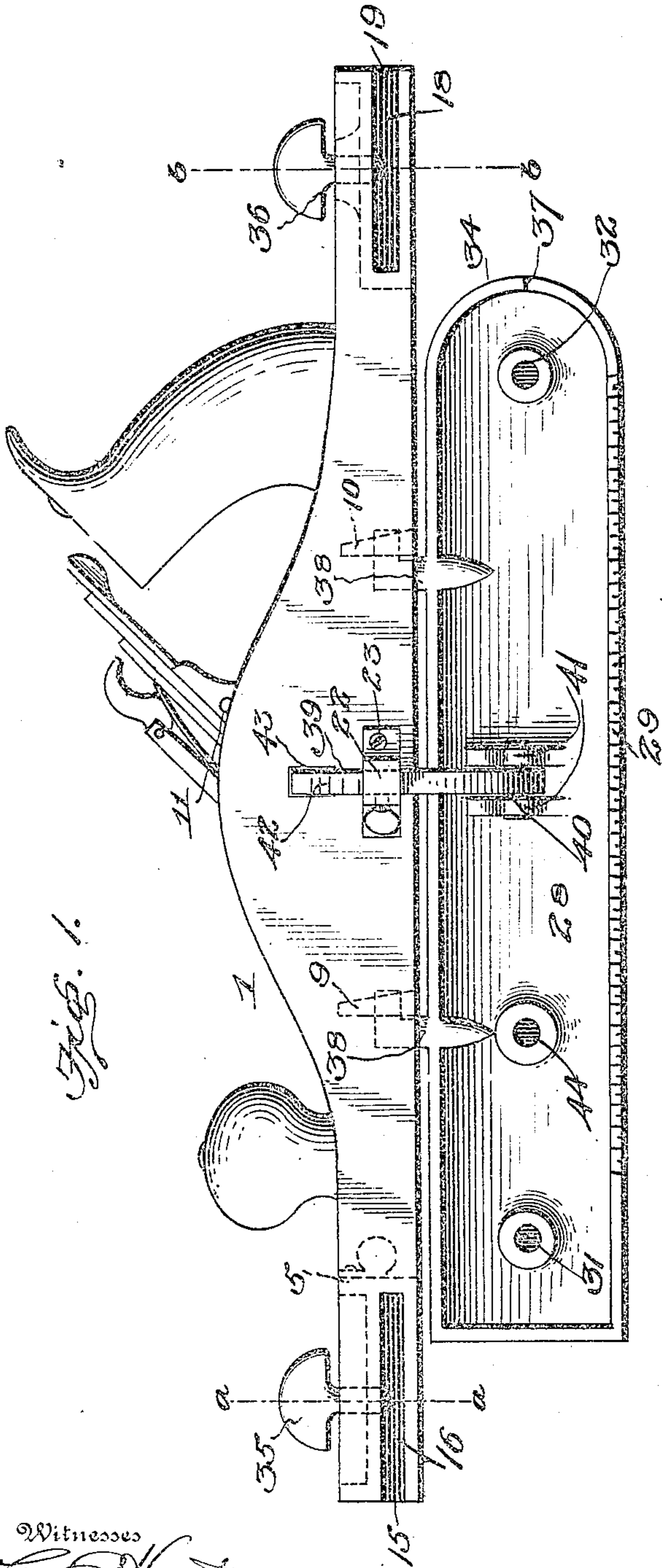


No. 792,480.

PATENTED JUNE 13, 1905.

J. D. WAGES.
COMBINATION TOOL.
APPLICATION FILED APR. 7, 1904.

2 SHEETS—SHEET 1.



Witnesses
C. D. Hunt
L. O. Hilton

Inventor
Joseph D. Wages

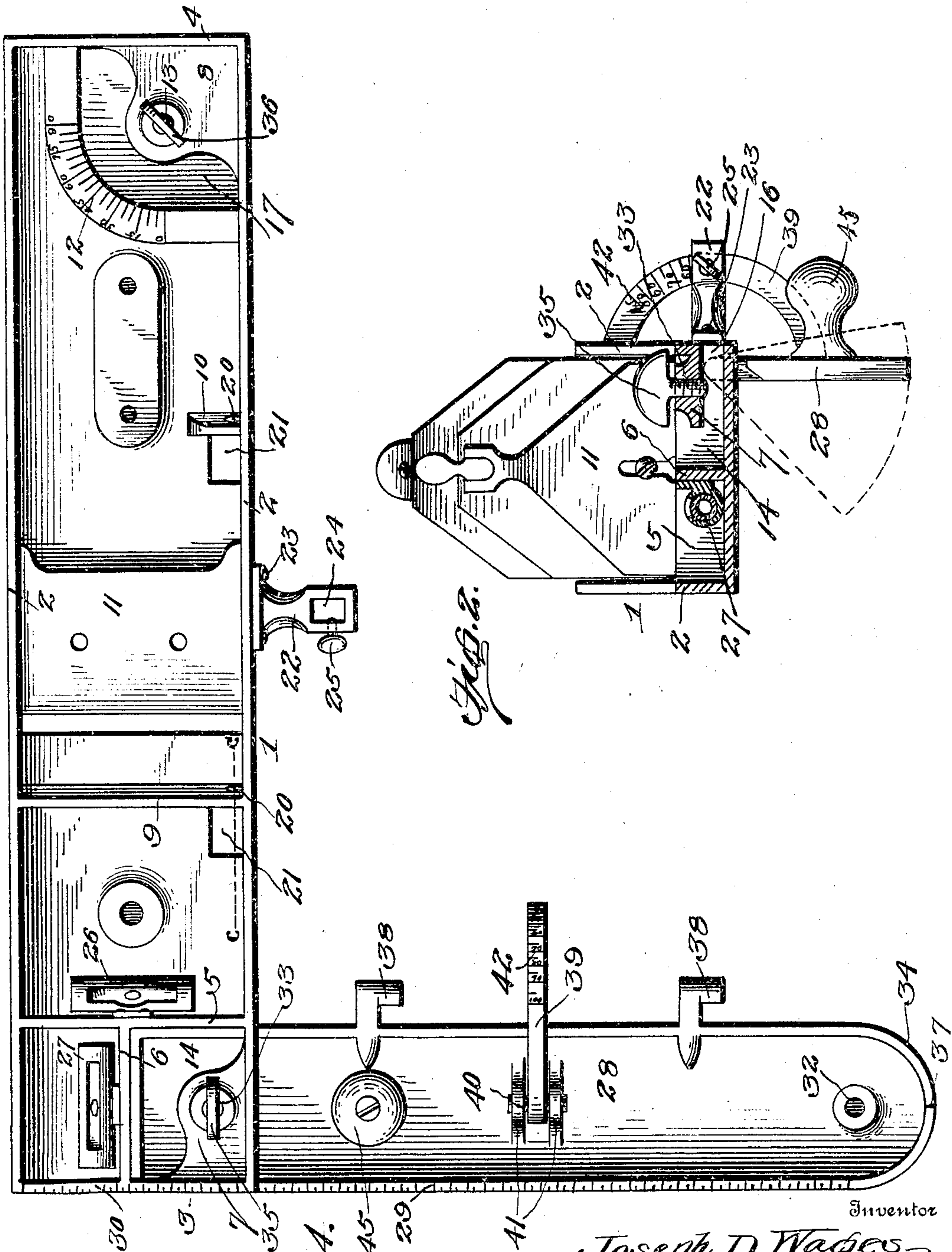
By *H. B. Wilson*
Attorney

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C. C. Hunt,
L. O. Hilton.

J. D. Wages.

Joseph D. Wages,

A. Rivison
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH D. WAGES, OF ATLANTA, GEORGIA, ASSIGNOR OF ONE-HALF TO
CHARLES D. BARKER, OF ATLANTA, GEORGIA.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 792,480, dated June 13, 1905.

Application filed April 7, 1904. Serial No. 202,119.

To all whom it may concern:

Be it known that I, JOSEPH D. WAGES, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Combination-Tools; and I do 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.

My invention is an improved combination-tool adapted for use as an ordinary plane, as a bevel-plane, square, triangle, plumb, or level; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved combination-tool, showing the same disposed for use as a bevel-plane. Fig. 2 is an end elevation of the same, partly in section, on the plane indicated by line *a a*, Fig. 1. Fig. 3 is a detail sectional view taken on the plane indicated by the line *b b* of Fig. 1. Fig. 4 is a top plan view of my improved combination-tool, showing the same arranged for use as a square; and Fig. 5 is a detail sectional view taken on the plane indicated by the line *c c* of Fig. 4, showing the means for connecting the bevel-gage and the plane-stock together.

The stock 1 of the plane is here shown as made of metal. It may in practice be made of wood or other suitable material, and I do not limit myself in this particular, neither do I limit myself to the construction of the plane-stock here shown. The same is provided with side flanges 2, end flanges 3 4 at the front and rear ends of the stock, and a transverse flange 5 at a suitable distance from the front end of the stock, a longitudinal centrally-disposed flange 6, which connects the flanges 3 5, a web 7 in one of the front corners of the stock, which web overhangs and is suitably spaced from the upper surface of the bottom of the stock, and a similar web 8, which is in one of the rear corners of the stock. The latter is further provided with a transverse flange 9 at a suitable distance from the flange 5, a lug 10 at a suitable distance in rear of the usual frog-seat

11, and a protractor 12, which is raised from the upper surface of the bottom of the stock and is concentric with an opening 13 in the web 8. The spaces in the front corner of the stock formed by the flanges 3, 5, and 6 form a seat 14 of rectangular form, openings 15 16 being made in the front flange and in one of the side flanges of the stock to communicate with the said seat. The space formed between the rear flange 4, one of the side flanges, and the protractor 12 forms a seat 17, and the stock is provided with openings 18 19 at one of its rear corners to communicate with said seat. The flange 9 and lug 10 are provided with longitudinal openings 20 near one side of the plane-stock, and in the bottom of the latter, immediately in advance of the said flange and lug, are openings 21. From one side of the plane-stock, at or near the center thereof, projects a keeper-arm 22, which is here shown as detachable therefrom and secured thereto by means of screws 23. The keeper-arm has, near its outer end, a vertical rectangular opening 24 and a set-screw 25. The handle, knob, bit, and means for securing the same in place are not here described, as they are of the usual construction and form no part of my present improvements.

A spirit or other suitable level 26 is disposed transversely with reference to the plane-stock and is here shown as secured to the flange 5. A similar longitudinally-disposed level 27 is here shown as secured to the longitudinal flange 6.

In connection with my improved plane-stock I employ a blade or arm 28, which, in connection with the plane-stock, adapts the latter for use as a bevel-plane, right-angle plane, square, or triangle. This blade or arm is of suitable dimensions, its longitudinal sides are parallel, and its outer straight edge is provided with a measuring-scale 29, which corresponds with a scale 30 on the front end of the plane-stock. At a suitable distance from its end the said blade or arm is provided with threaded openings 31 32, adapted, respectively, to register with a threaded opening 33 in the web 7 and with the opening 13 in the web 8. That end of the blade or arm which is provided with

the opening 32 is semicircular in form, as at 34, and is concentric with the opening 32. In the opening 33 is a clamping-screw 35, and a similar screw 36 is in the opening 13. The
 5 square end of the blade or arm 28 may be placed in or on the seat at one of the front corners of the plane-stock formed between the web 7 and the bottom of the plane-stock. The openings 15 16 adapt the said ends of the
 10 said blade or arm to be placed in the said seat, and said blade or arm may be rigidly and yet detachably secured in place by means of the screw 35, as will be understood. When the said blade or arm is thus arranged, as shown
 15 in Fig. 4, it coacts with the plane-stock to form a square. The levels 26 27 coact with the plane-stock to enable the latter to be used for the purpose of a plumb and level when the curved semicircular end 34 of the blade
 20 or arm 28 is in the seat 17 and pivotally connected to the plane-stock by the screw 36, which also serves to secure the blade or arm at any desired angular adjustment. Said blade or arm coacts with the plane-stock to enable
 25 them to be used for the purposes of a triangle. The protractor 12 enables the said blade or arm to be set at any desired angle, said blade or arm being provided at its semicircular end with a point or notch 37, which coacts with
 30 the protractor, as will be understood. The said blade or arm is illustrated as thus disposed in dotted lines in Fig. 2.

The blade or arm 28 is provided on one side with right-angle pintles 38, adapted to be
 35 passed through the openings 21 of the plane-stock and to engage the openings 20 therein to secure the said blade or arm to the plane-stock, near one side of the latter, for angular movement with reference to the plane-stock,
 40 so that the said blade or arm may be disposed at right angles to the face of the plane-stock or at any other desired angle with reference thereto, said blade or arm when thus disposed, as shown in Figs. 1 and 2, adapting the plane
 45 for use as an angle or bevel plane, the said blade or arm forming a gage, as will be understood. To enable the said blade or arm to be secured at any desired angle, I provide the same with a curved protractor-arm 39,
 50 which is here shown as pivoted thereto at one

end, as at 40, the blade or arm being provided on its outer side with a pair of lugs or ears 41, between which the protractor-arm is pivoted. The protractor-arm has on one side a protractor-scale 42, and the said arm extends
 55 through the opening 24 in the arm 22, its scale coacting with one of the surfaces of said arm. The upper end of the latter may pass through and work freely in an opening 43 in one side of the plane-stock. The screw 25 enables the
 60 protractor-arm, and hence the bevel-gage arm 28, to be secured to the plane-stock at any desired angle. Said arm or blade 28 is provided on its outer side at a suitable distance from its square end with a seat 44 for the at-
 65 tachment of a knob 45 for use when the tool is employed as an angle or bevel plane.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the inven-
 70 tion will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle
 75 or sacrificing any of the advantages of this invention.

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

1. A tool comprising a plane-stock having attaching devices at its ends and at one side, and a blade or arm having attaching devices at its ends and at one side to coact with those
 85 of the stock to secure the blade or arm to the stock at an angle with reference thereto.

2. In combination with a plane-stock having seats at its ends, a blade or arm, means to adjustably, pivotally and detachably connect the latter at one side to one side of the plane-
 90 stock, and means to secure either end of the blade or arm in one of the seats of the stock, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit-
 95 nesses.

JOSEPH D. WAGES.

Witnesses:

H. B. COLLINS,

W. P. MANSFIELD.