

No. 848,192.

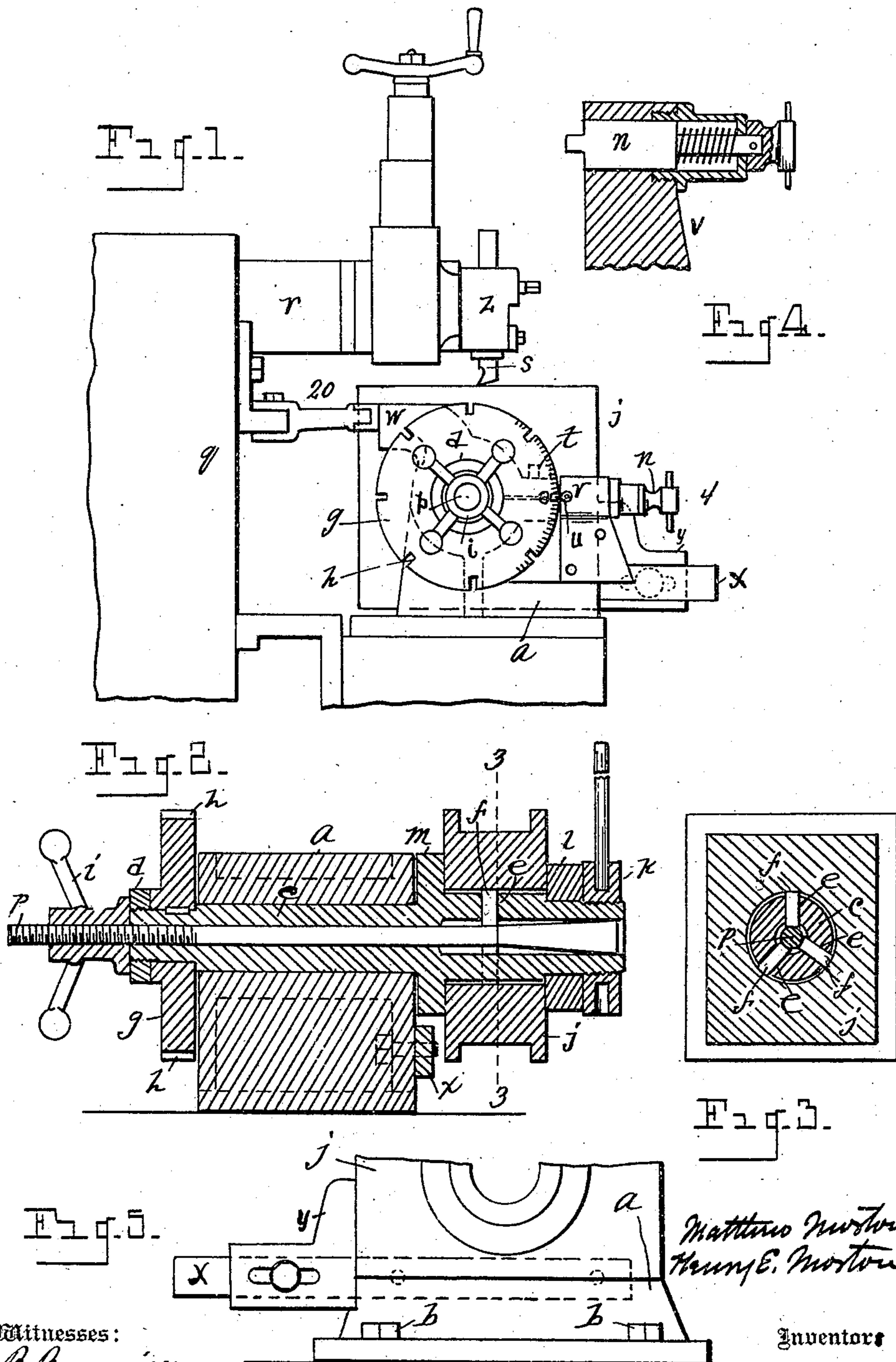
PATENTED MAR. 26, 1907.

M. & H. E. MORTON.

APPARATUS FOR HOLDING CONNECTING ROD BRASSES FOR LOCOMOTIVES, &c.

APPLICATION FILED MAY 15, 1905.

2 SHEETS—SHEET 1.



Witnesses:
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By their Attorney

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Inventors
Matthew Morton
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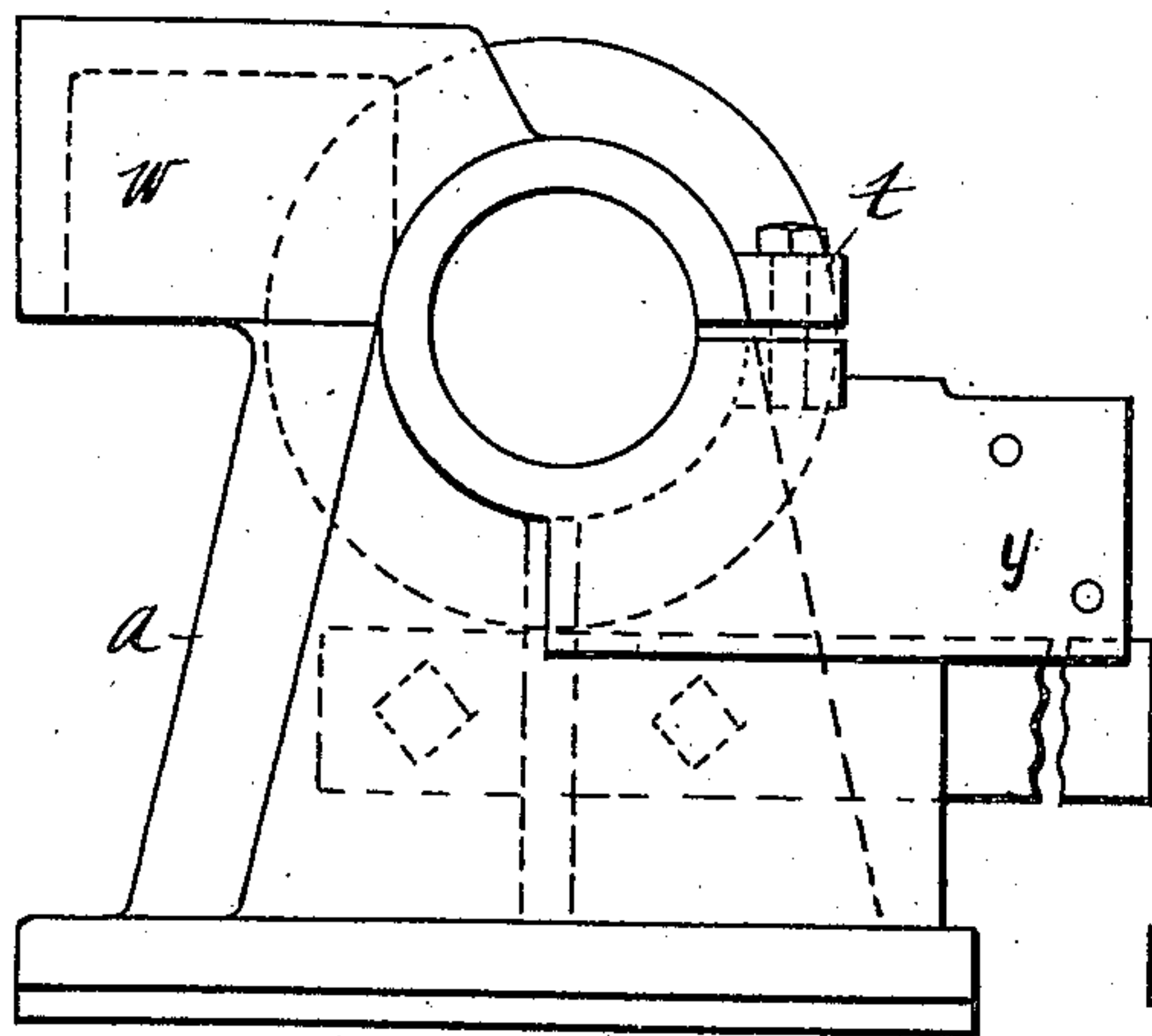


Fig. 6.

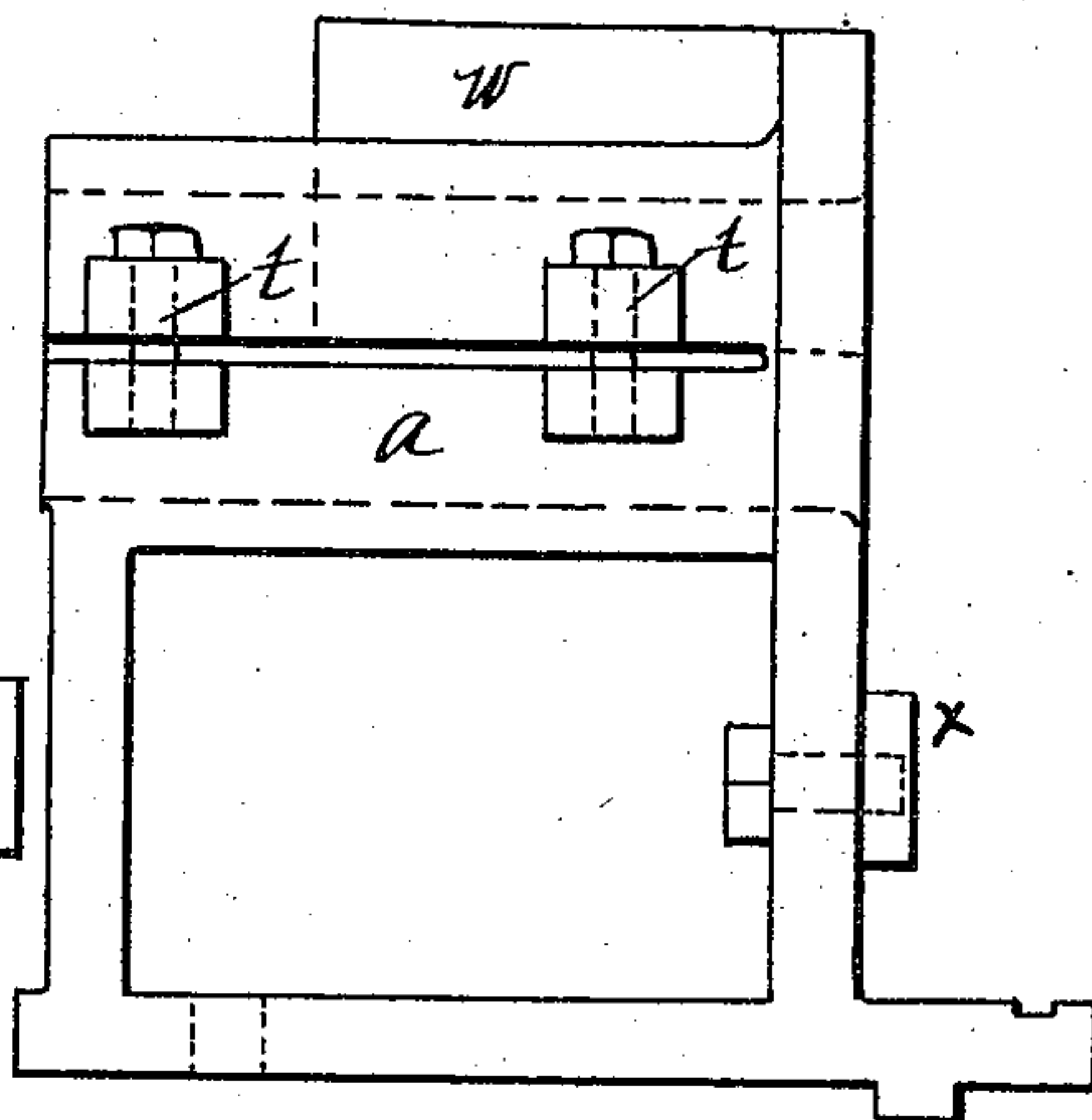


Fig. 7.

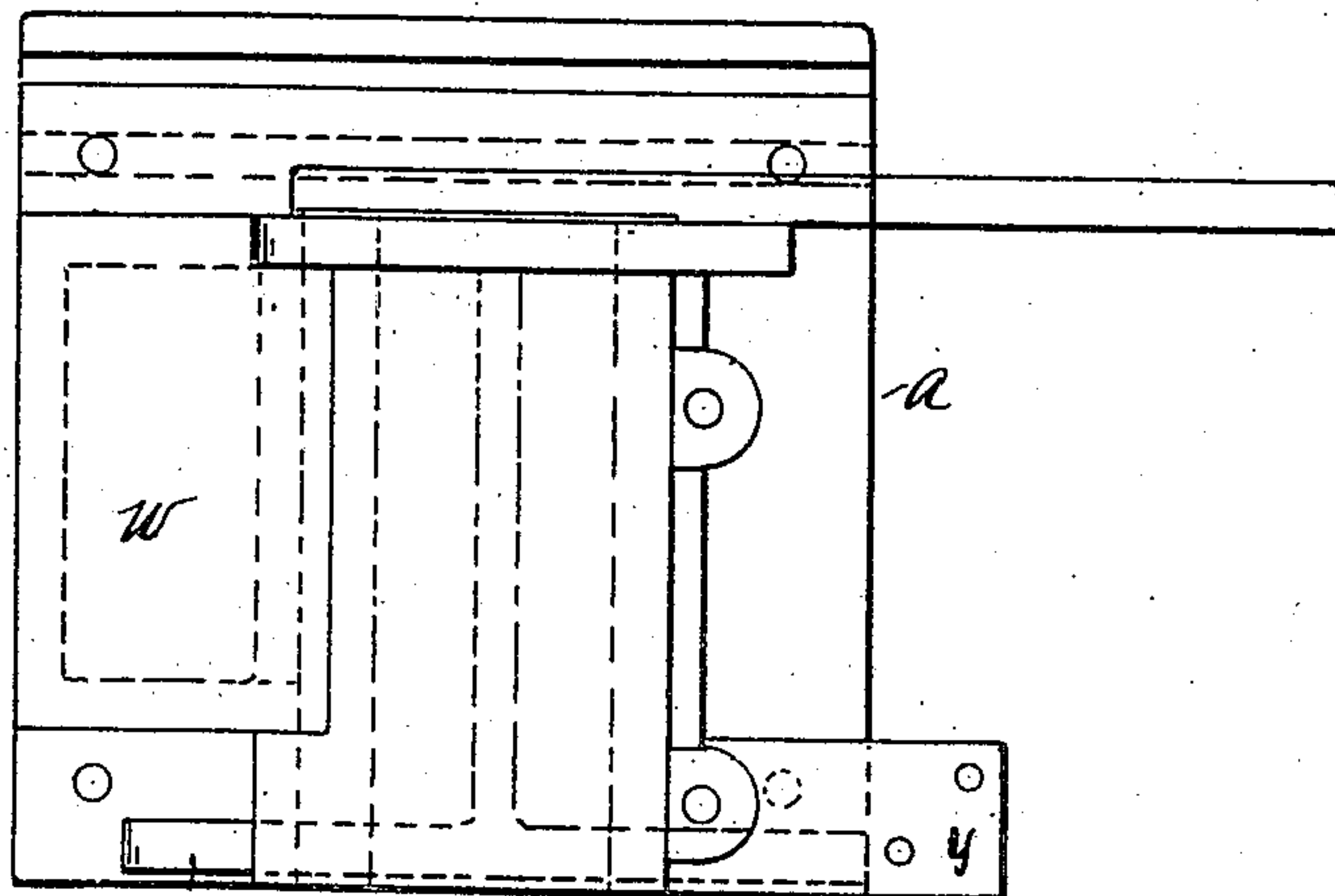


Fig. 8.

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UNITED STATES PATENT OFFICE.

MATTHEW MORTON AND HENRY E. MORTON, OF MUSKEGON, MICHIGAN.

APPARATUS FOR HOLDING CONNECTING-ROD BRASSES FOR LOCOMOTIVES, &c.

No. 848,192.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed May 15, 1905. Serial No. 260,540.

To all whom it may concern:

Be it known that we, MATTHEW MORTON and HENRY E. MORTON, citizens of the United States, residing at Muskegon, county of Muskegon, State of Michigan, have invented a certain new and useful Improvement in Apparatus for Holding Connecting-Rod Brasses for Locomotives and other Work, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

Our invention has for its object to provide improved apparatus for holding work of certain forms while being machined by suitable mechanism, the same being more especially adapted for holding square, hexagonal, or octagonal work.

Our improved mechanism to this end is particularly adapted to be used in connection with a draw-cut shaper—as, for example, a shaper embodied in United States Letters Patent No. 472,061, granted April 5, 1892, to Matthew Morton, and No. 550,004, granted November 19, 1895, to Matthew Morton and Henry E. Morton.

Our improved apparatus is especially designed and adapted for machining connecting-rod brasses for locomotives.

Our invention consists of the construction, combination, and arrangement of devices and appliances hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation illustrating features of our invention. Fig. 2 is a view in longitudinal section. Fig. 3 is a view in section on the line 3 3, Fig. 2. Fig. 4 is a detail view in section. Fig. 5 is a view of portions of the device in elevation from the side opposite that shown in Fig. 1. Fig. 6 is a view showing the bracket-casting in end elevation. Fig. 7 is a view thereof in side elevation. Fig. 8 is a plan view of the same.

In carrying out our invention, *a* denotes a suitable bracket-casting secured to the table or bed of any suitable machine on which the device is to be used in any desired manner, as by bolts *b*. This casting has an accurately-bored orifice through its upper portion. Journaled in said casting is a suitable hollow arbor *c*, properly fitted into the bored orifice of the casting. The outer end of said arbor is threaded to receive a nut *d*. The arbor is also accurately bored to receive an adjusting-bolt *p*, which has a portion of its length turned on a taper, as shown in Fig. 2. The

bore in the arbor *c* is enlarged at one end thereof, as shown, and the arbor is formed with slots *e*, preferably three in number, extending therethrough transversely to the bore thereof to receive adjustable jaws *f*, made tapering where they come in contact with the tapered portion of the adjusting-bolt *p*.

Attached to the opposite end of the arbor is an index-wheel *g*, shown provided with notches *h* accurately cut therein to represent the number of surfaces it is desired to machine on any one piece of work by the use of our improved attachment or device. Thus if four sides of a piece of work only are to be machined four notches are provided. The arbor is preferably provided also with a hand-wheel *i*.

It will be readily seen that by placing the work (represented at *j*) upon the arbor by turning the hand-wheel *i* the jaws *f* will be caused to expand until the work is accurately centered and held in place. Then by forcing the nut *k* and the collar *l* against the work the work will be brought up square against the flange *m* upon the arbor and rigidly held. After squaring the work for the first cut it does not need to be moved upon the arbor for the various remaining settings required to machine the work, inasmuch as the work revolves with the arbor. A suitable index-plug *n* is provided to hold the arbor in given position, by drawing which the arbor may be revolved to the next notch in the index-wheel *g*. It will be readily seen that in this manner a piece of work may be secured upon the arbor and that it does not need to be disturbed in any manner until the required operations are fully completed.

By replacing the jaws *f* with jaws of required size work with diameters of any size of bore up to the rated capacity may be held in place. It is evident that by this improvement attached to a suitable shaper connecting-rod brasses and other analogous work may be machined in much less time and with much less labor than in the customary manner.

In the drawings, *q* indicates in outline a draw-cut shaper provided with a reciprocatory ram or cutter-bar *r*, cutter-head *z*, and cutting-tool *s*.

The bracket-casting *a* is arranged to contact with an adjustable back bearing 20. By the use of this back bearing it is evident the force or thrust of the draw cut is trans-

mitted against the face of the support or column of the shaper, rendering the apparatus more rigid. Our improved apparatus is therefore obviously economical, simple, and
5 of superior efficiency and utility.

The casting *a* is preferably a split casting and provided with grip-bolts *t*, whereby the casting may be securely engaged upon the arbor in any desired position, thereby also re-
10 lieving the strain upon the index-wheel, also preventing vibration.

The jaws *f* may be of any suitable shape and the corresponding slots *e*.

The index-wheel *g* may be provided with
15 graduations by suitable degrees, as shown. A suitable pointer *u* may be carried by the bracket *v*, supporting the plug *n*, to center normally with the degree-point marked "0." If one side of a piece of work has to be planed
20 on a given angle, the angle may readily be located by setting the mechanism in either direction from said point to the number of degrees desired.

The bracket-casting *a* is preferably constructed with an extended portion *w* to come
25 in contact with the adjustable back bearing 20. Attached to the casting *a* is an extension *y*, carrying a bracket *x*, adjustable thereon to bear against the work on the lower
30 portion thereof opposite the column of the machine to hold the work more rigidly in place and to overcome vibration.

The bracket-casting *a* forms, as will be seen, a support for the arbor and other apparatus constituting our improved attachment
35 to a shaper—such, for example, as is embodied in said Letters Patent above referred to.

It will be evident that the index-wheel
40 serves a double purpose, both as an index member and as a flange to hold the arbor in place.

What we claim as our invention is—

1. A work-holding apparatus of the nature
45 described comprising a support, a rotatable arbor upon which the work is to be held, extending through said support and journaled therein, said arbor provided with a laterally-projecting flange abutting against one end of
50 the support to engage against one end of the work, and means upon the arbor to engage against the opposite end of the work to hold

the work from longitudinal movement upon the arbor, and expansible mechanism carried by said arbor to be expanded within the work
55 to center the work and to hold the work from revolving upon the arbor.

2. A work-holding apparatus of the nature described comprising a support, a rotatable arbor upon which the work is to be held, ex-
60 tending through said support and journaled in said support, said arbor provided with a laterally-projecting flange abutting against one end of the support to engage against one end of the work, and means upon the arbor
65 to engage against the opposite end of the work to hold the work from longitudinal movement upon the arbor, expansible jaws radially projecting through said arbor, and a bolt longitudinally movable within said ar-
70 bor constructed with a tapered portion to contact with and to expand said jaws to center the work and to hold the work from revolving upon the arbor, and an index-wheel upon the arbor abutting against the support
75 to hold the arbor in position.

3. A work-holding apparatus of the nature described comprising a support, a rotatable arbor upon one end of which the work is to be held, extending through said support and
80 journaled therein, said arbor provided with a laterally-projecting flange abutting against one end of the support to engage against one end of the work, and means upon the arbor to engage against the opposite end of the
85 work to hold the work from longitudinal movement upon the arbor, expansible mechanism carried by said arbor to be expanded within the work to center the work and to hold the work from revolving upon the arbor,
90 and an index-wheel rigidly engaged upon the opposite end of such arbor to govern the rotation of the arbor, said index-wheel also serving as a flange to hold the arbor in position.
95

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

MATTHEW MORTON.
HENRY E. MORTON.

Witnesses:

GARRET VAN DER STETT,
ALEXANDER VAN ZANTEN.