

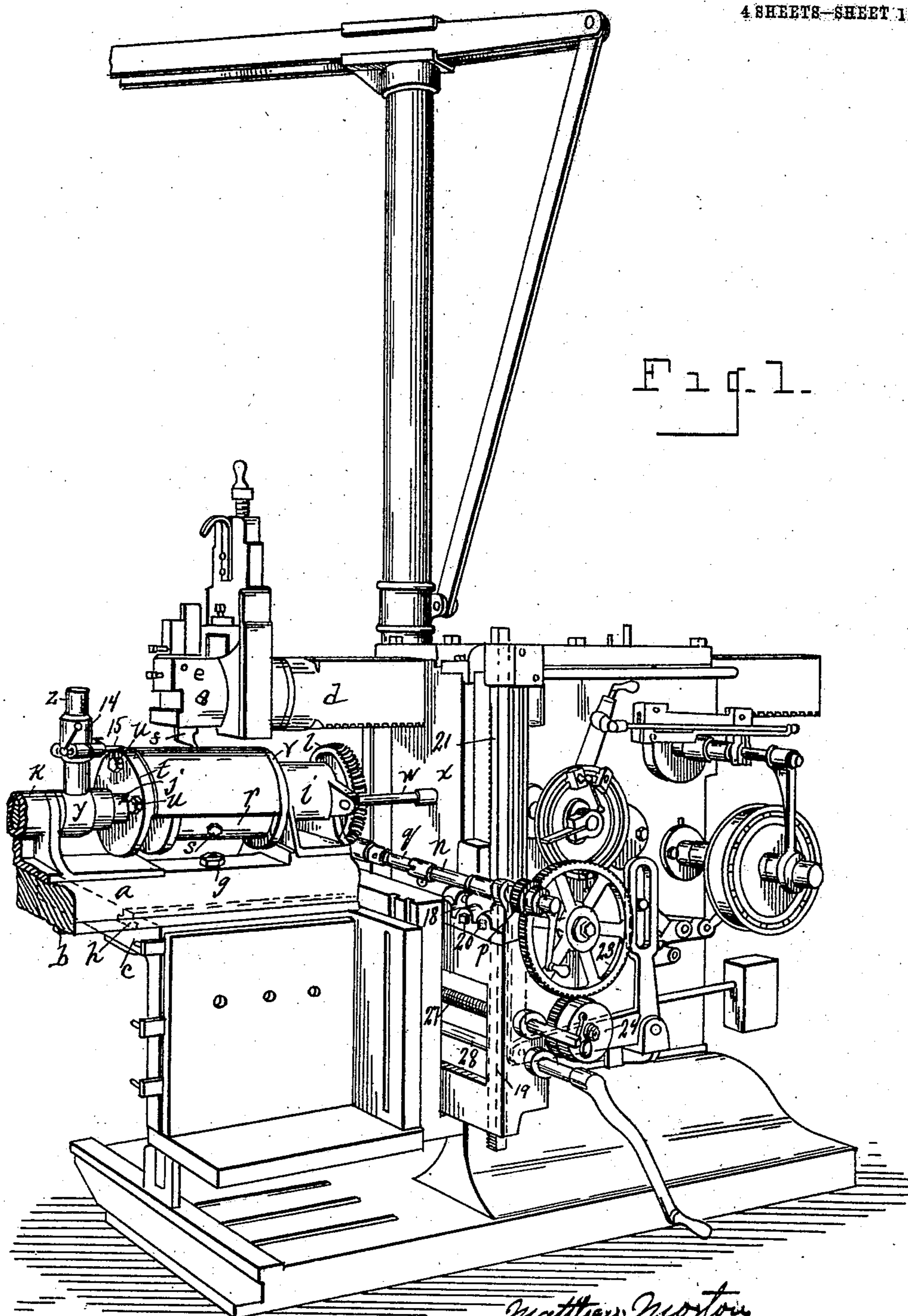
No. 848,191.

PATENTED MAR. 26, 1907.

M. & H. E. MORTON.
ATTACHMENT FOR DRAW CUT SHAPERS.

APPLICATION FILED MAY 15, 1905.

4 SHEETS—SHEET 1.



Witnesses:
O. B. Baenziger
M. S. Allen

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Inventors
By their Attorney
Newell S. Wright.

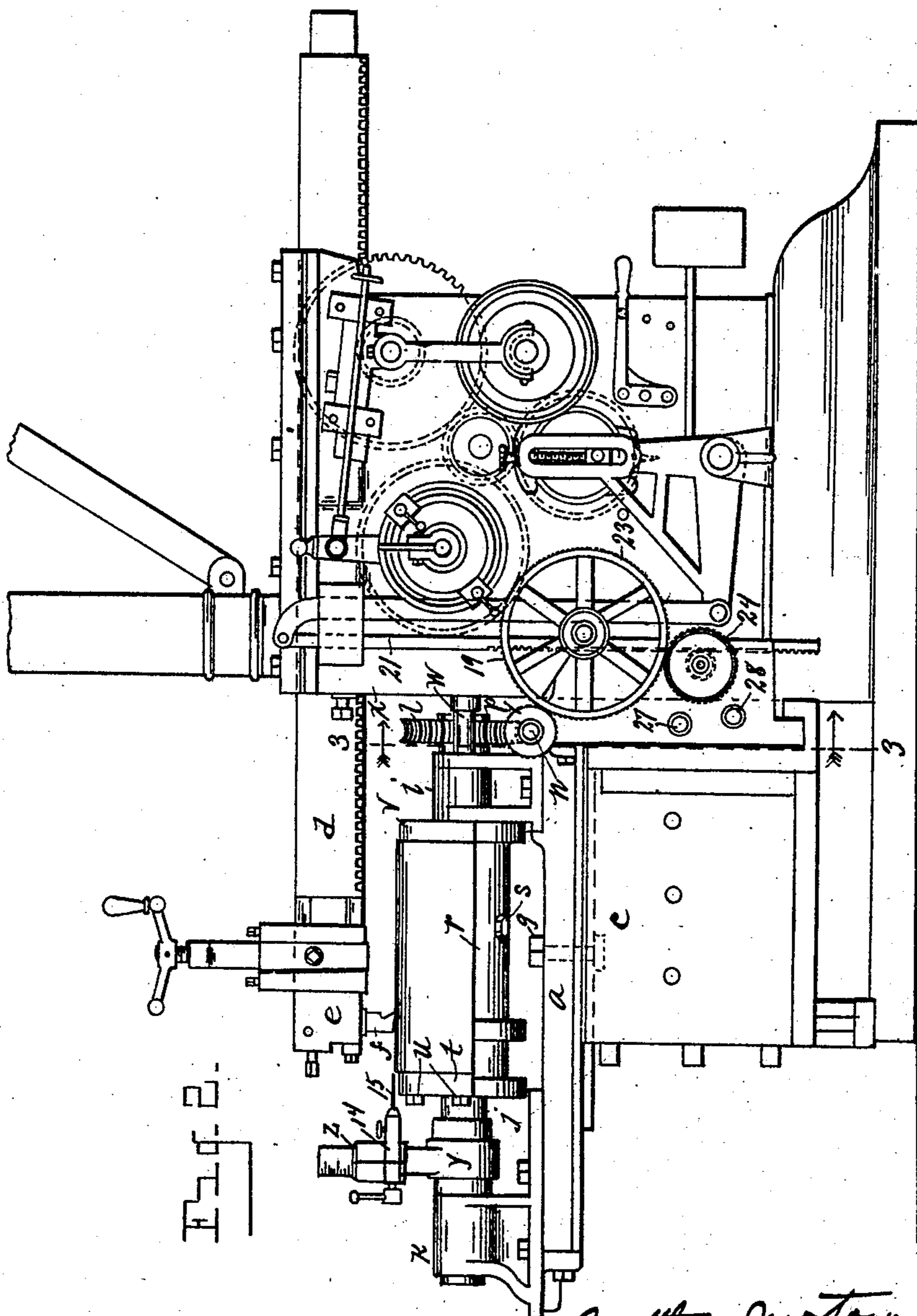
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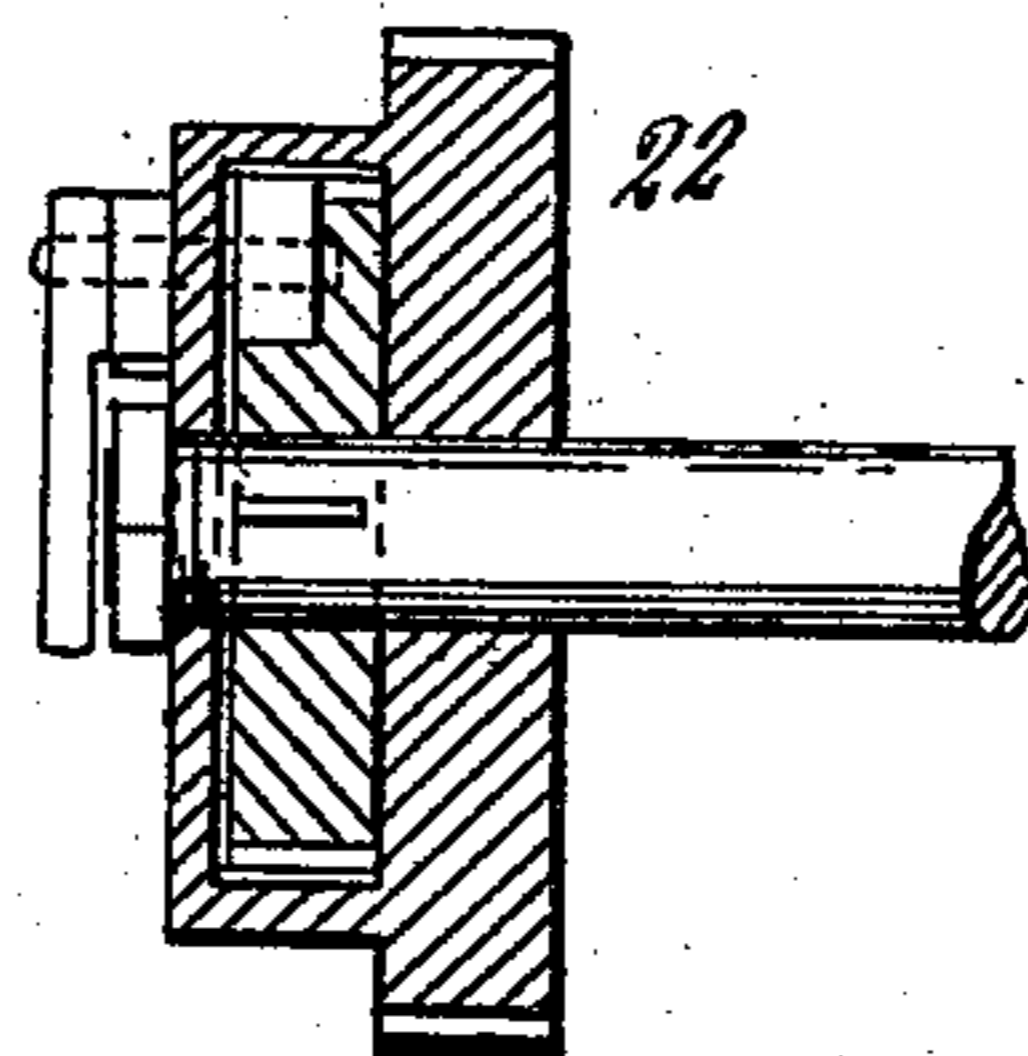
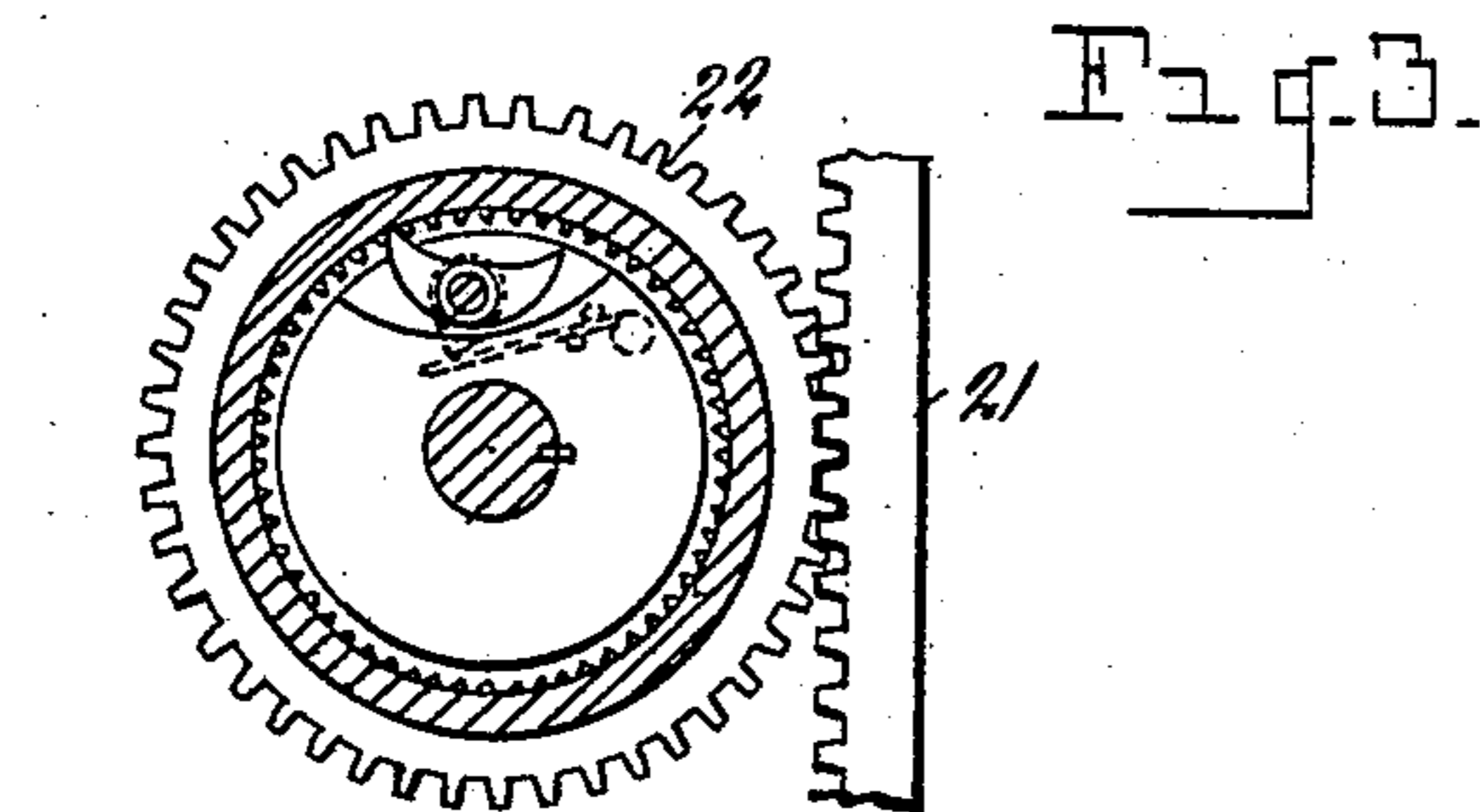
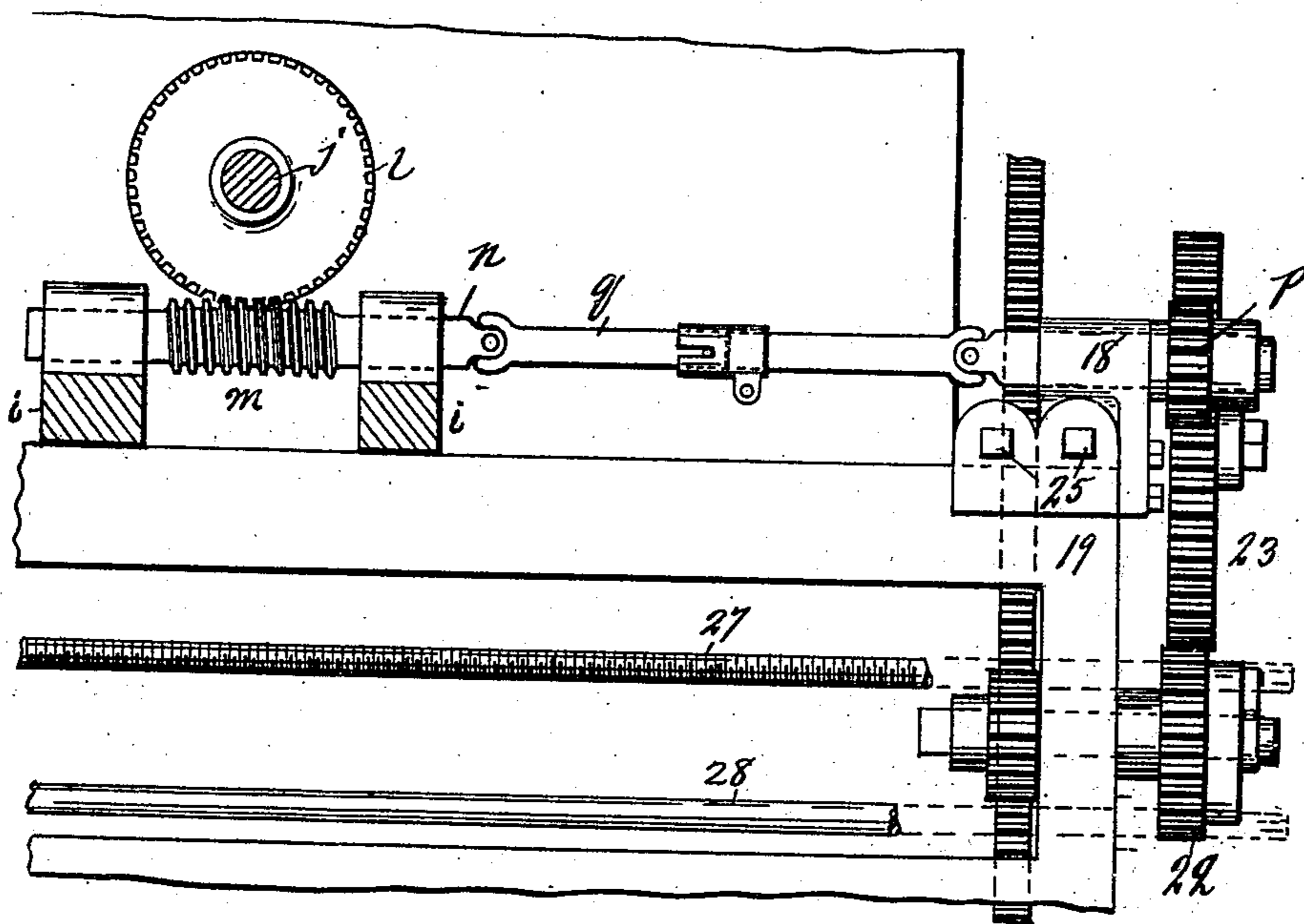


Fig. 4.

Fig. 5.

Fig. 6.

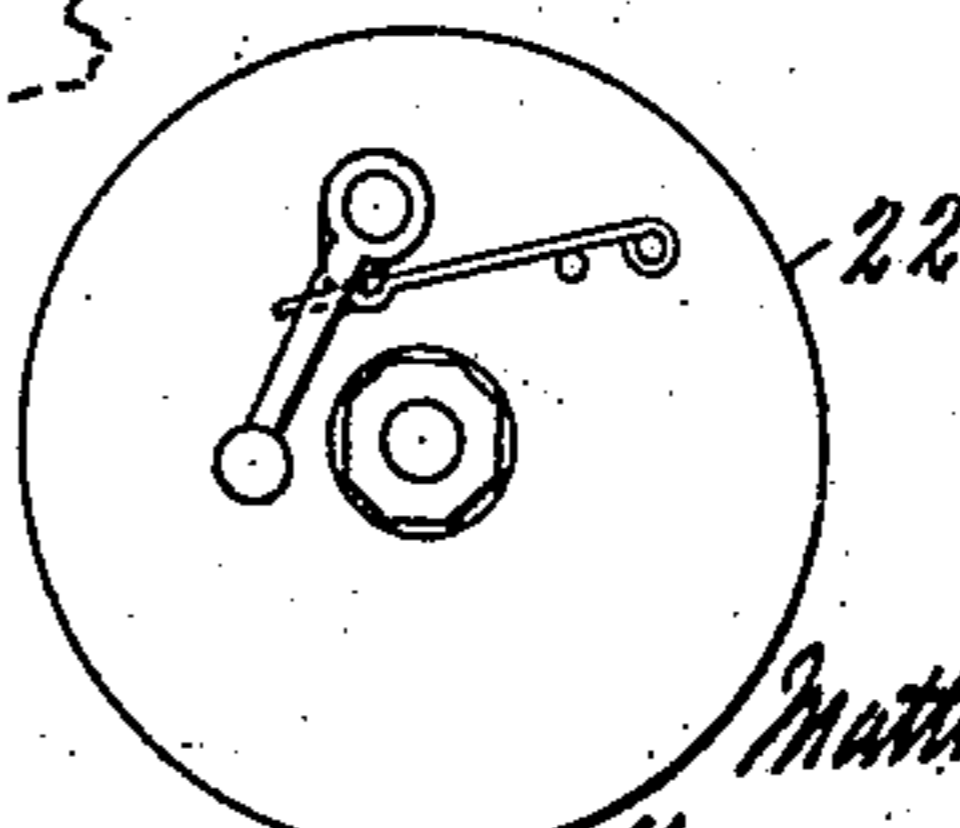
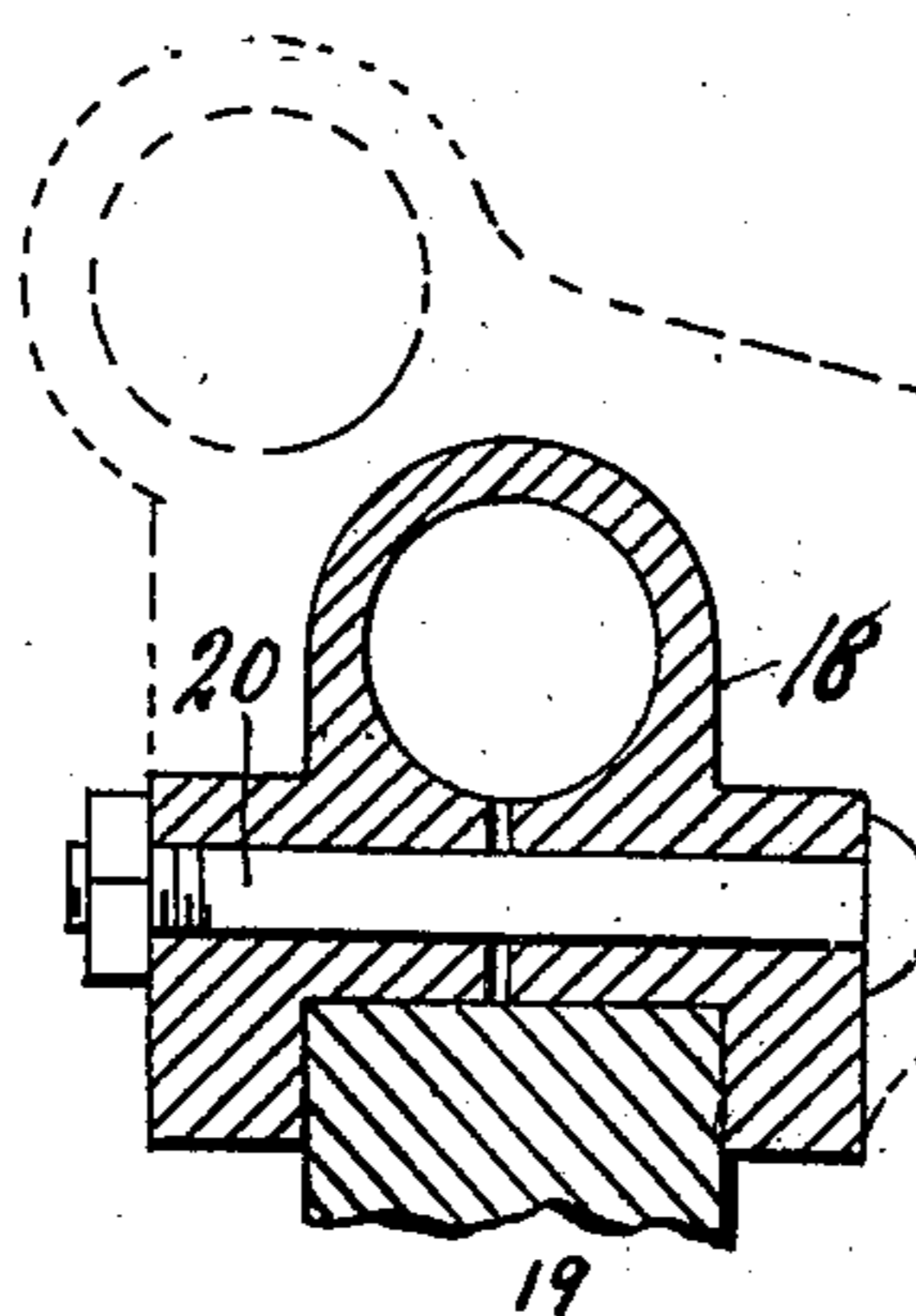


Fig. 7.

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No. 848,191.

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M. & H. E. MORTON.
ATTACHMENT FOR DRAW CUT SHAPERS.

APPLICATION FILED MAY 16, 1905.

4 SHEETS—SHEET 4.

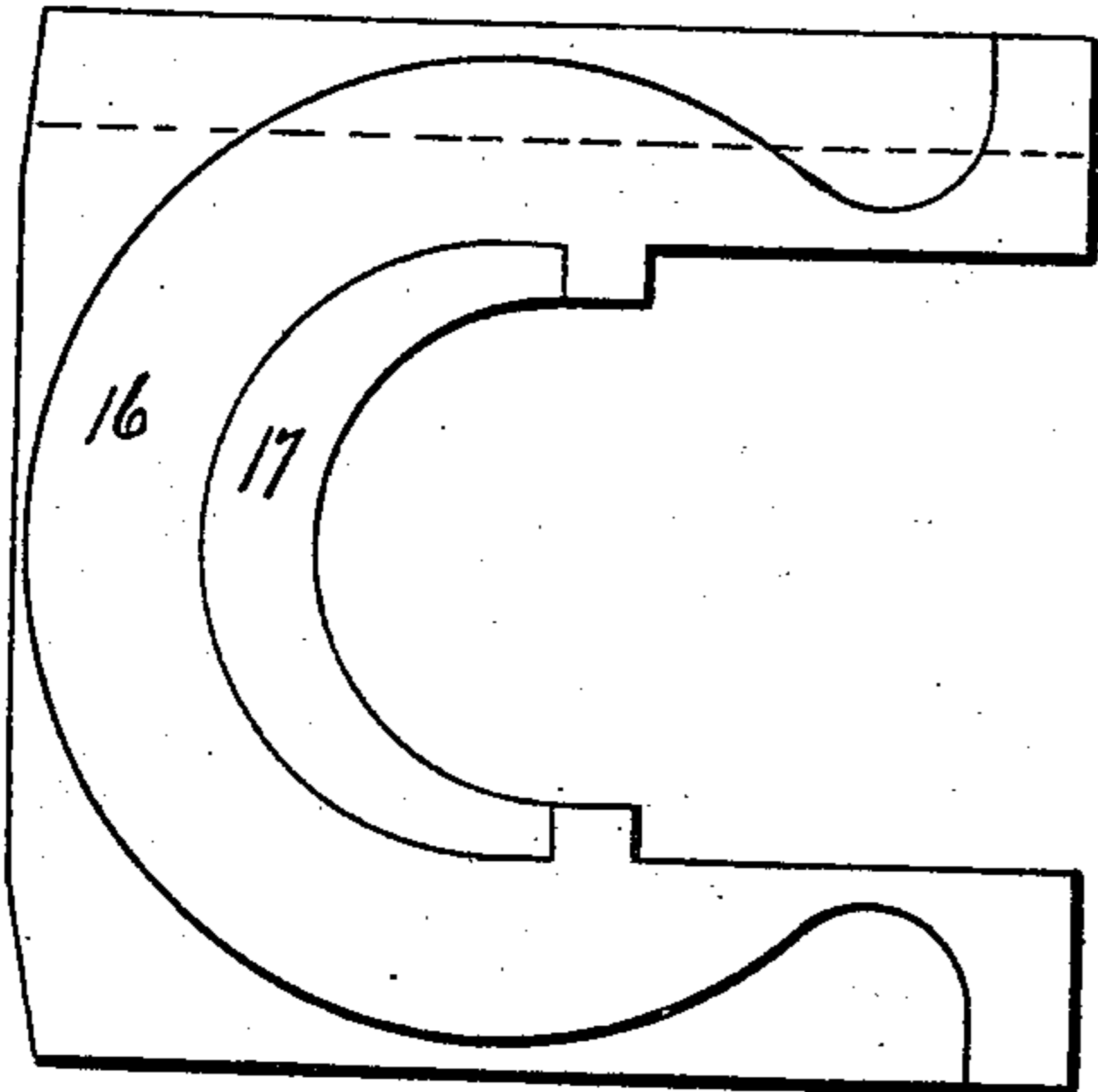


Fig. 10.

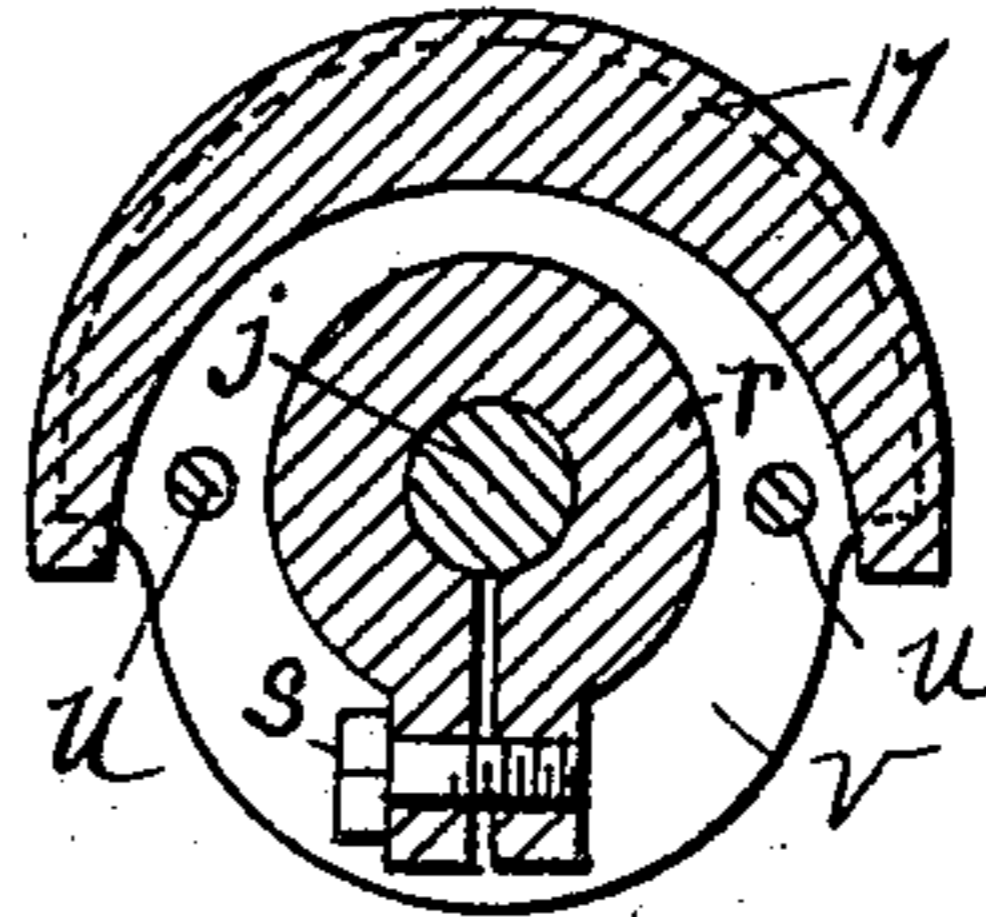


Fig. 11.

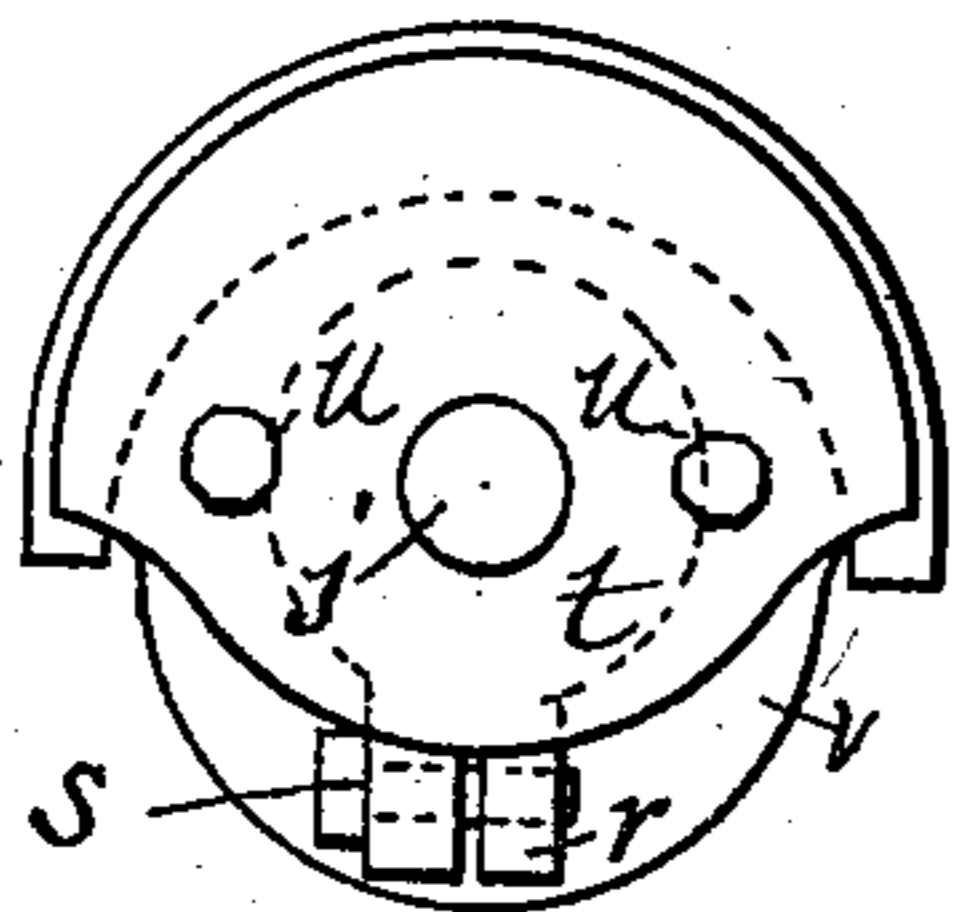


Fig. 7.

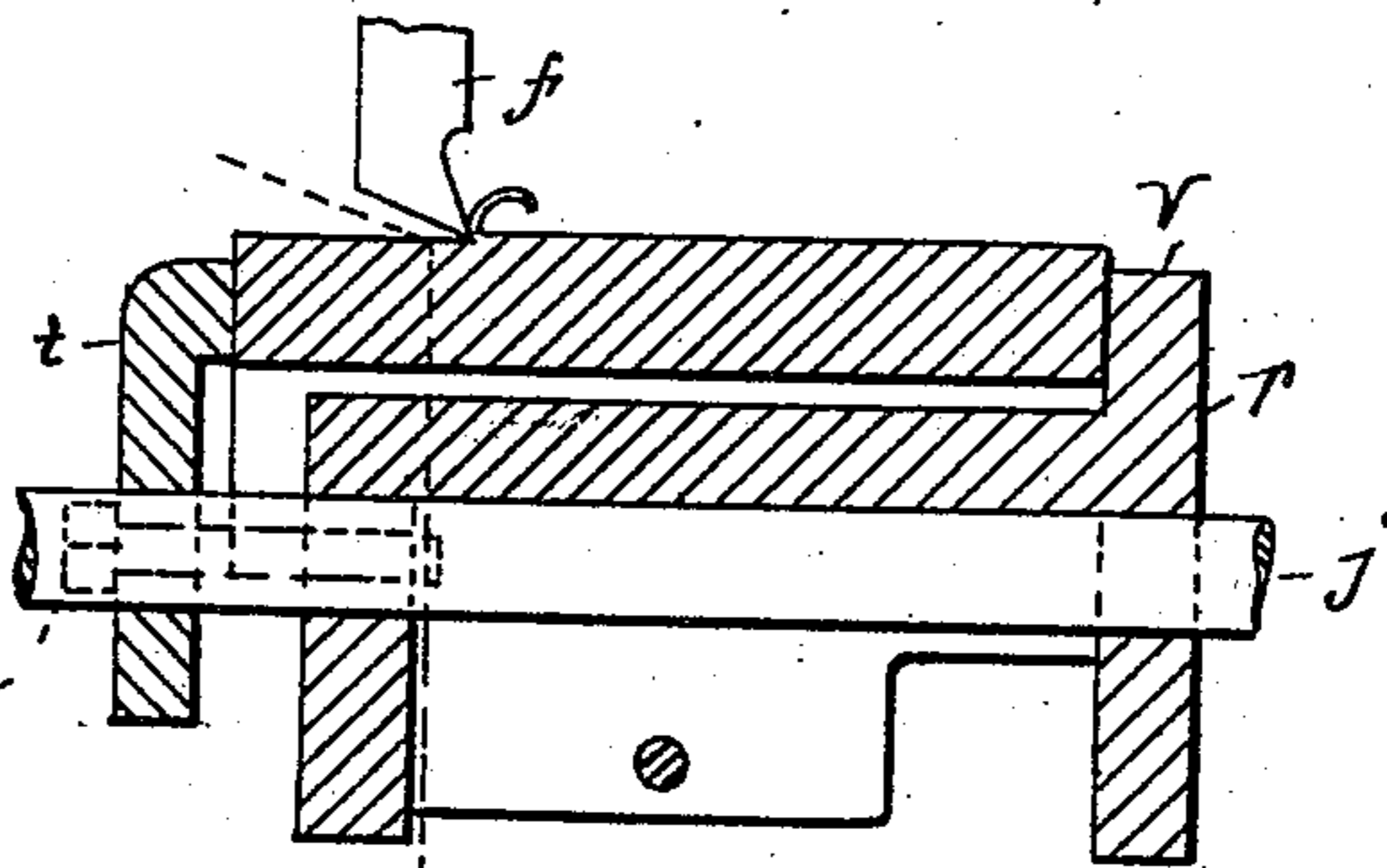


Fig. 8.

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UNITED STATES PATENT OFFICE.

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

ATTACHMENT FOR DRAW-CUT SHAPERS.

No. 848,191.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed May 15, 1905. Serial No. 260,539.

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 an Attachment to a Draw-Cut Shaper, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

Our present invention has reference to an attachment to a draw-cut shaper adapted more especially for certain kinds of railroad-work, the attachment being provided for planing the exterior curved surfaces and edges of the shells for bearings of driving-boxes upon locomotives.

Our attachment is designed more particularly to be applied to a draw-cut shaper comprised in another application filed by us of even date herewith, Serial No. 260,538, although our invention might be applied to any suitable shaper—as, for example, to a machine of this class embodied in United States Letters Patent granted to us November 19, 1895, No. 550,004, and to a shaper embodied in United States Letters Patent granted to Matthew Morton April 5, 1892, No. 472,061.

It is well understood that after driving-boxes for locomotives have been crowned a shell for the main bearing is pressed into the box.

The object of our invention is to provide an apparatus to fit said shells for being pressed into place. To this end the shell must be planed on its outside convex surface to fit into the inner concave surface of the driving-box, and the edges of the shell must also be planed to fit properly into the driving-box.

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

Figure 1 is a view in perspective, showing a shaper-machine to which our attachment is applied. Fig. 2 is a side elevation of the same. Fig. 3 is a view in section on the line 3-3, Fig. 2. Fig. 4 is a detail view in section through the feeding-ratchet mechanism. Fig. 5 is a view in longitudinal section through the feeding-ratchet mechanism. Fig. 6 is a view in section through the clamp for fastening certain bearings to the shaper. Fig. 7 is a view in elevation of the feeding-

ratchet mechanism. Fig. 8 is a longitudinal section through the holder that engages the shell. Fig. 9 is an end view of the said holder. Fig. 10 is an end view showing a driving-box with shell in place. Fig. 11 is a view in section through the chuck *r* and its arbor.

The body of the machine, with its ram, cutter-head, cutting-tool, and the mechanism for operating the same, (shown herewith,) is explained in the accompanying application above referred to and need not be again herewith described in detail except in so far as the various features of our attachment are specially related thereto.

Our attachment is designed for planing shells on their exterior circular faces, and consists, essentially, of a suitable base-plate *a*, preferably formed with a tongue *b* on its lower surface entering into a corresponding slot in the supporting bed or table *c* of the machine, by which said base-plate is brought into proper alinement with the ram *d*, carrying the cutter-head *e* and the cutting-tool *f*. The base-plate *a* may be held in position on the table of the machine by means of a T-bolt *g* entering the slot *h* of the table. Attached to the inner end of the base-plate *a* is a suitable head *i*, in which an arbor *j* is journaled. An additional outer bearing *k* is also provided, in which the outer end of the said arbor is journaled. Attached to the inner end of the said arbor is a worm-gear *l*, meshing with a worm *m* upon a shaft *n*, provided with a pinion *p*, geared with the feeding-gear of the shaper by an intermediate gear 23, as shown, and by which said shaft *n* is made to revolve intermittently and automatically by said feeding-gear as the ram is reciprocated. The shaft *n* is made flexible by means of the link *q*, interposed therein and having a jointed connection therewith. A suitable chuck *r* is made fast to the arbor and is adjustable lengthwise upon the arbor, being held in engagement therewith by a clamping device *s*, so that it may be quickly removed or rotated when being adjusted. The said chuck is split, as shown more particularly in Fig. 11, the clamping device *s* readily binding the chuck upon the arbor. This chuck *r* is designed to hold work which is made on the arc of a circle and is especially adapted for holding driving-box shells.

A flanged plate *t* is located upon the outer end of the arbor *j* and is adjustable thereon, the same being engaged in place against the work by bolts *u* engaging the chuck *r*. It

will be evident that when the nuts upon said bolts are forced home said plate will clamp the shell firmly against the flange *v* on the inner end of the chuck *r*.

5 The head *i* is provided with adjustable back bearings *w*, whereby the cutting strain is transmitted against the column *x* of the machine.

Movably attached to the outside bearing *k* 10 is a grip-ring *y*, provided with an arm *z*, which may be swung radially from the center. Movably attached to said arm is an adjustable bracket 14, carrying a pointer 15. The arm *z* is provided with a scale, as shown, 15 by which the pointer may be set at any desired position, and the line by which to set the cutting-tool may be scribed on the casting to be machined, and the work may be machined without any other measuring devices.

20 A driving-box is indicated at 16, and a shell to be planed by our present improved mechanism is indicated at 17.

A bearing for the shaft *n* is indicated at 18, clamped upon a rail 19 of the column *x*.

25 The feeding-ratchet mechanism (indicated at Figs. 4, 5, and 7) is similar to that shown in our accompanying application filed of even date herewith, above referred to, and need not be further described in detail. The rack- 30 bar is indicated at 21 and the feeding-ratchet at 22. The bracket-bearing 18 is constructed to carry the shaft *n* and also the journal of the intermediate gear 23, which meshes with the customary feeding-gear 24 of 35 the machine. The bracket-bearing 18 is secured in place by bolts 20. By loosening up said bolts and the bolt *g* our attachment may be entirely removed from the machine. The 40 pinion *p* is interchangeable and may be placed upon the shaft 27 to mesh with feeding-gear 24 to effect the cross-feed of the shaper, as shown and described in the patents above referred to, or said pinion may be placed upon the shaft 28 to mesh with said 45 feeding-gear to effect the vertical feed of the shaper, as explained in said patents. The inner end of the shaft *n* is journaled upon the head or bearing *i*.

The chuck is shown provided with heads at 50 opposite extremities thereof, through which the arbor projects.

What we claim as our invention is—

1. An attachment to a shaper having in combination a support, an arbor journaled

upon the support, a chuck provided with 55 heads at opposite ends thereof in which the arbor is rigidly engaged, and with an outwardly-projecting flange at one extremity thereof, and means adjustable longitudinally upon the arbor coacting with the chuck to 60 clamp the extremities of the work upon the arbor.

2. An attachment to a shaper provided with a cutting-tool having in combination a support engaged upon the shaper, an arbor 65 automatically rotatable in operation, bearings for said arbor upon said support, means adjustable longitudinally upon the arbor to clamp the extremities of the work thereupon and index mechanism carried upon one of 70 said bearings provided with a scale and with a pointer to be set by said scale by which to govern the setting of the cutting-tool of the shaper, said index mechanism arranged to be swung out of the way when not in use. 75

3. An attachment to a shaper provided with a cutting-tool having in combination a support, an arbor automatically rotatable in operation, bearings for said arbor upon said support, means longitudinally adjustable 80 upon the arbor to clamp the extremities of the work thereupon, and index mechanism provided with an arm which may be swung radially of the arbor and with an adjustable pointer upon said arm by which to govern 85 the setting of the cutting-tool of the shaper, said index mechanism being arranged to be swung out of the way when not in use.

4. An attachment to a shaper provided with a cutting-tool having in combination a 90 support, an arbor, bearings for said arbor upon said support, means longitudinally adjustable upon the arbor to clamp the extremities of the work thereupon, and index mechanism sleeved upon one of said bearings 95 provided with an arm and an adjustable pointer upon said arm, by which to govern the setting of the cutting-tool of the shaper, said index mechanism being arranged to be swung out of the way when not in use. 100

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

MATTHEW MORTON.
HENRY E. MORTON.

Witnesses:

GANET VANDER STETT,
ALEXANDER VAN ZANTEN.