

No. 774,676.

PATENTED NOV. 8, 1904.

C. K. LASSITER.
BOLT CUTTER.

APPLICATION FILED OCT. 16, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

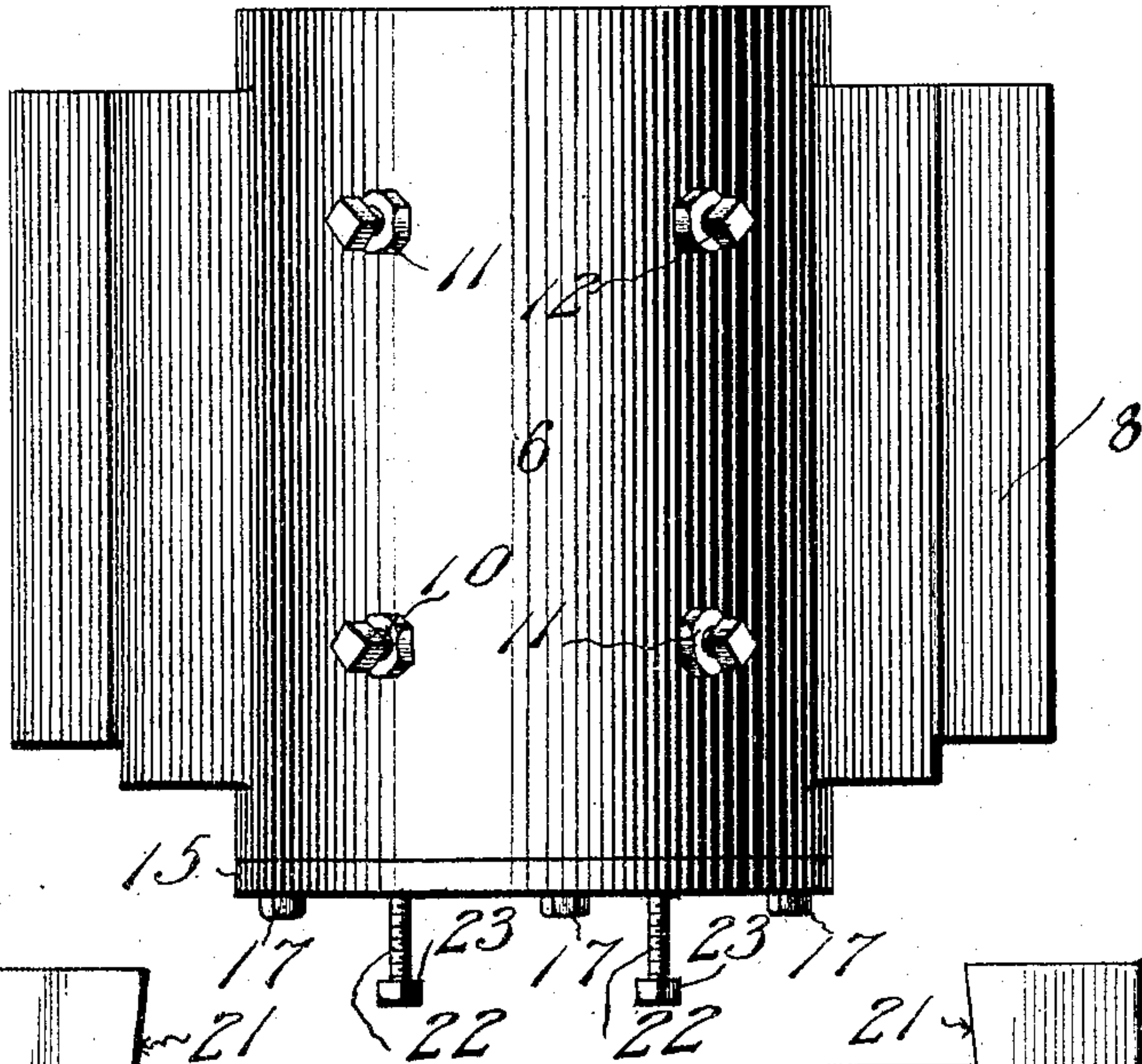


Fig. 6.

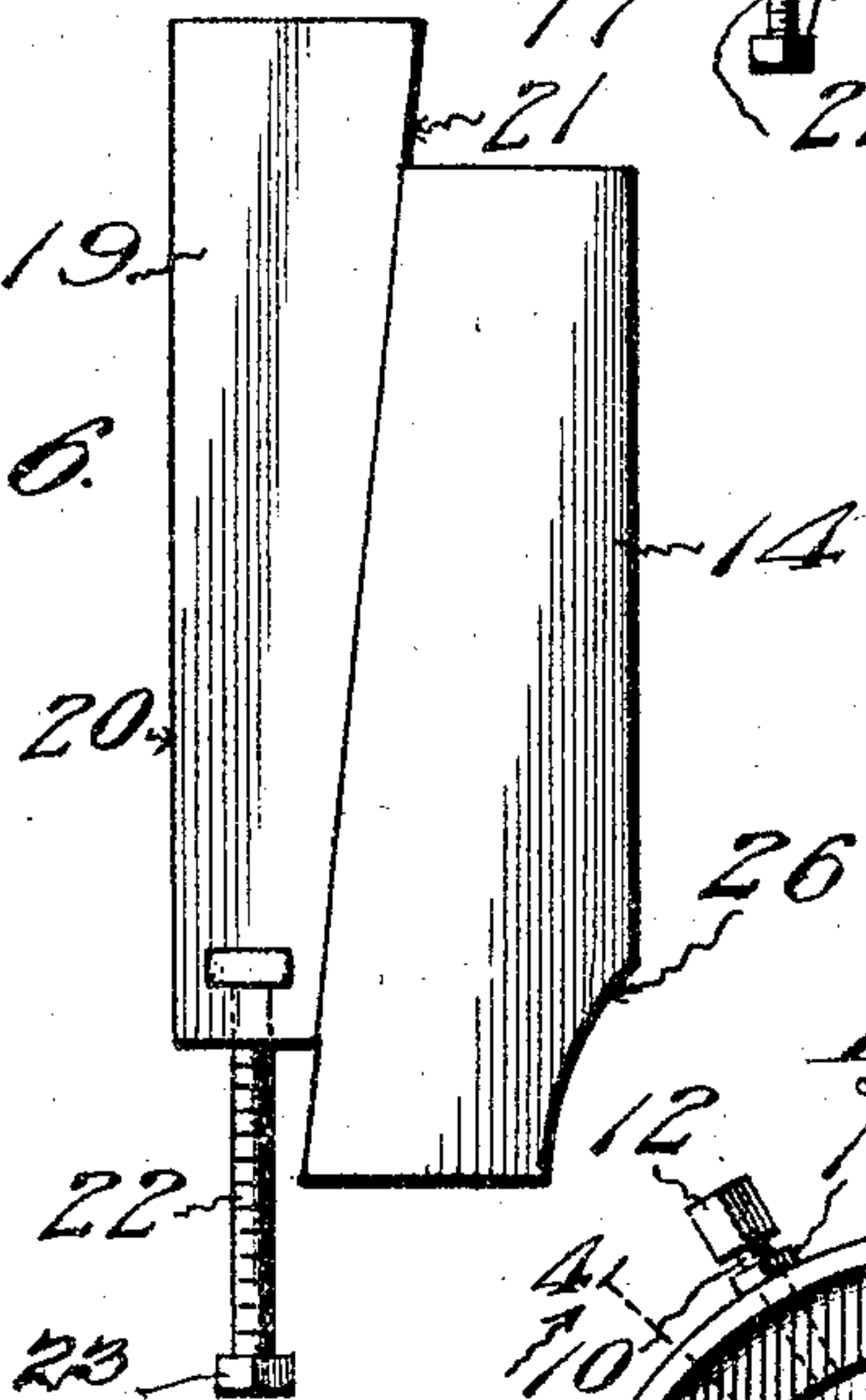


Fig. 7.

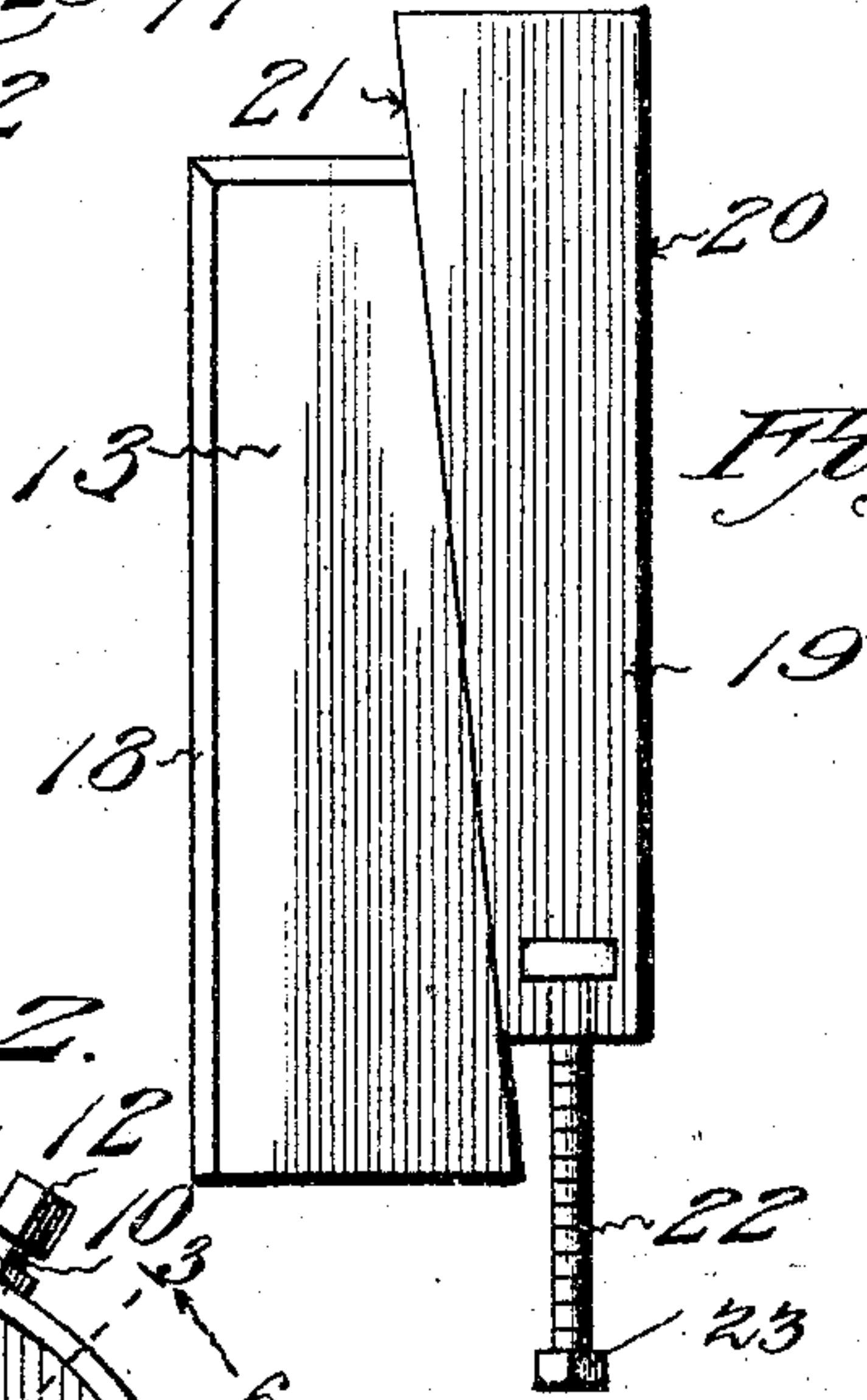
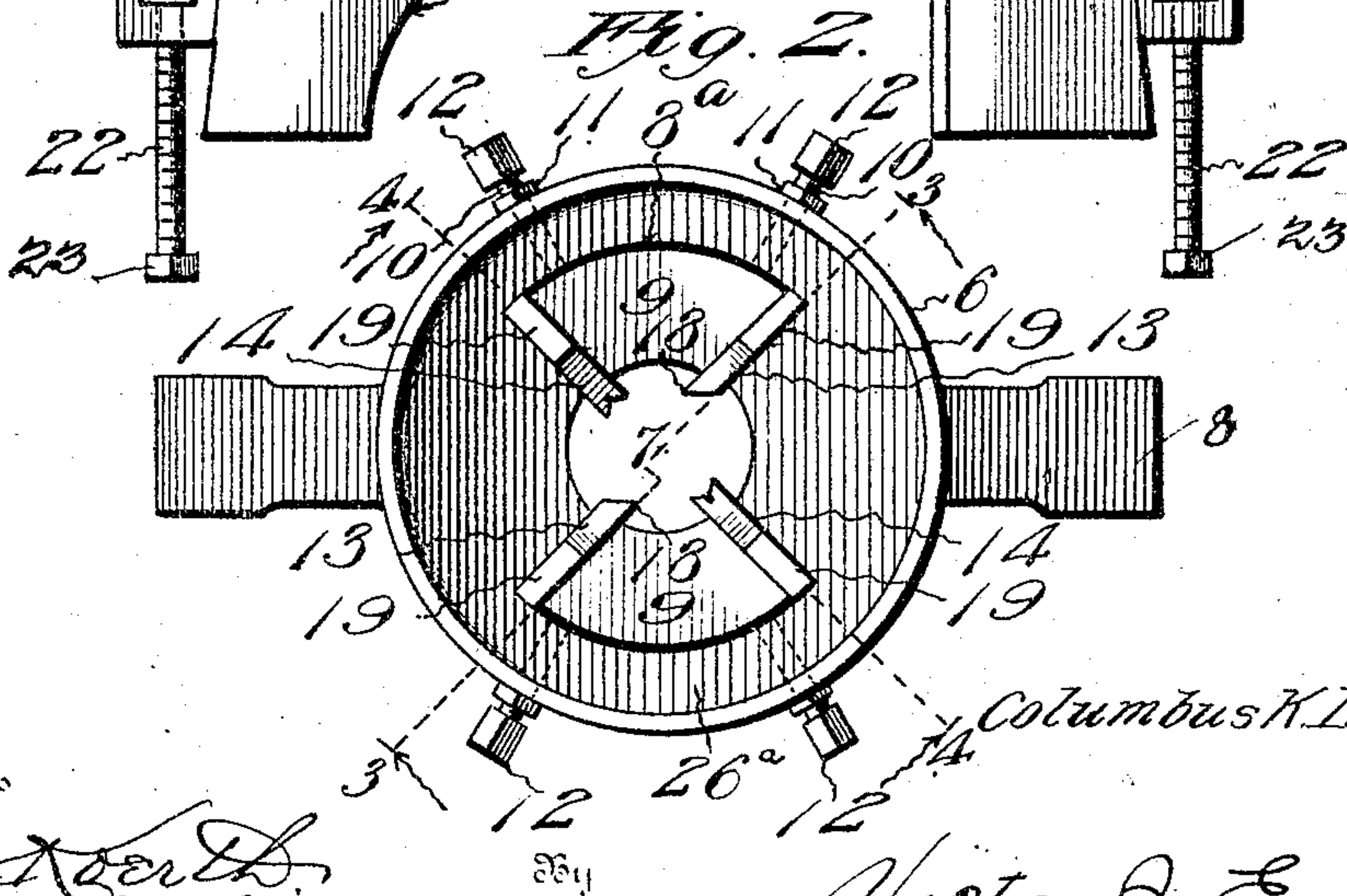


Fig. 2.



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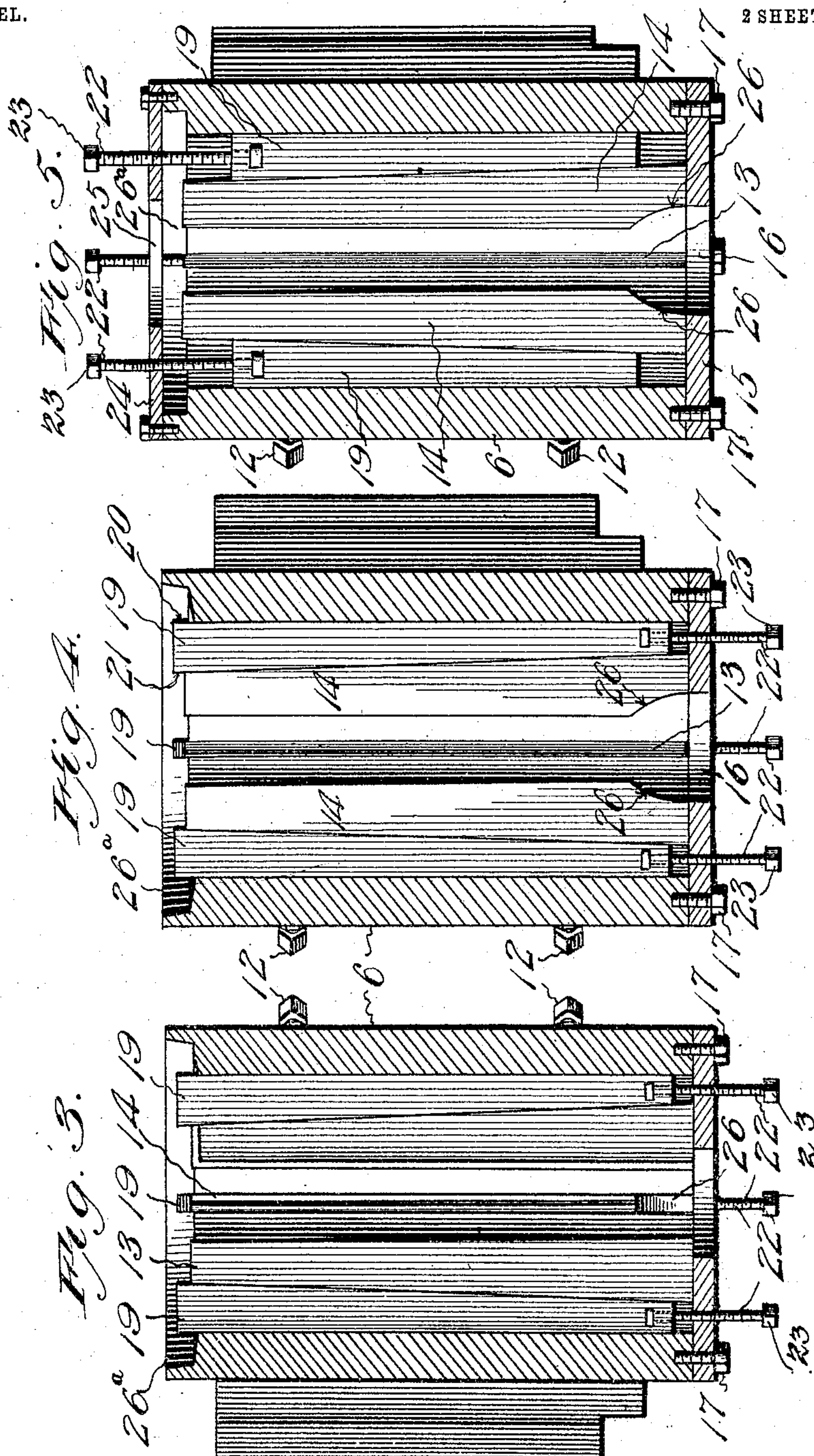
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

COLUMBUS K. LASSITER, OF RICHMOND, VIRGINIA.

BOLT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 774,676, dated November 8, 1904.

Application filed October 16, 1902. Serial No. 127,522. (No model.)

To all whom it may concern:

Be it known that I, COLUMBUS K. LASSITER, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Bolt-Cutters, of which the following is a specification.

This invention relates to bolt turning or cutting devices for machine-tapered bolts, and particularly that class used in locomotive building, which are secured in place by what is known as a "driving fit."

The invention consists in the construction and arrangement of parts hereinafter more fully described and claimed.

The improved bolt cutter or turning device, which will be more fully hereinafter described, is subject to a wide range of modification in the dimensions, proportions, and form of the several elements, and the details of construction and the accompanying drawings show one practical embodiment of the invention, and therein—

Figure 1 is an elevation of a bolt cutter or turning device embodying the features of the invention. Fig. 2 is a top plan view of the improved device. Fig. 3 is a transverse vertical section on the line 3 3, Fig. 2. Fig. 4 is a transverse vertical section on the line 4 4, Fig. 2. Fig. 5 is a transverse section taken in the same plane as Fig. 4 and showing a slight modification. Fig. 6 is a detail elevation of one of the guides and the adjusting means therefor. Fig. 7 is a detail elevation of one of the cutter-blades and its adjusting means.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 6 designates a circular block or casing formed with a central bore 7 and diametrically projecting arms or extensions 8, by means of which the said block or casing is supported in operative position. The block or casing is also provided with segmental slots 8^a, extending full length thereof and opening into the bore 7, and in said slots wedge-blocks 9, of similar form, are loosely disposed and ad-

justable through the medium of adjusting-screws 10, provided with jam-nuts 11 and exteriorly-projecting heads 12. The adjusting-screws 10 are arranged in vertically-alined paths which engage each block near the opposite ends of the latter. The blocks 9 are of less arcuate extent than the slots 8^a, and between the opposite ends of the blocks and the end walls of the slots cutter-blades 13 and guides 14 are alternately arranged—that is, one end of each block bears against a cutter-blade and the opposite end of the block against a guide, as clearly shown by Fig. 2.

The cutter-blades and guides have their inner opposing edges in diametrical alinement and are held against loose movement or chattering by the wedge-blocks, which can be readily adjusted to take up any disadvantageous play that the cutter-blades or guides may have. The inner edges of the guides are constructed in such manner as to impinge against or bite a bolt inserted in the bore 7, and the inner edges of the cutter-blades are formed with bevels in reverse positions. The cutter-blades extend full length of the block and bear at their lower ends on a base-plate 15, having a central opening 16 for the exit of the shavings and held in place by bolts 17 or other preferred means. The cutting edges 18 of the cutter-blades are normally disposed in tapered relation independent of the adjusting means therefor, the said cutting edges converging gradually and regularly toward their lower terminals. Likewise the inner opposing edges of the guides 14 are disposed in normal tapered relation similar to the inner edges of the cutter-blades, and the outer edges of the latter and the guides are inclined reversely to the taper or inclination of the inner edges of said devices. Both the cutter-blades and guides are of a maximum width less than the depth of the slots 8^a, or, in other words, the outer edges of the cutter-blades and guides are normally located at a distance from the outer vertical walls of the said slots, and in the space between the outer edges of the cutter-blades and guides elongated adjusting-wedges 19 are interposed and have outer

vertical straight edges 20, substantially parallel with the axis of the tool, and inner edges 21, inclined reversely to the outer edges of the cutter-blades and guides, which they engage, and also to the said axis. One adjusting-wedge 19 is used with each cutter-blade and each guide, and, as shown by Figs. 3 and 4 and on an enlarged scale by Figs. 6 and 7, an adjusting-screw 22 is swiveled in the lower end of each adjusting-wedge and projects through the plate 15 and is provided with a set-nut 23 or other analogous device to maintain the wedge in positive adjusted position.

By the operation of the adjusting-wedges 19 in opposite vertical directions the cutter-blades and guides can be regularly moved inwardly or outwardly without in the least modifying or varying the angle of taper of the inner opposing edges of the cutter-blades and guides. It will also be seen that the adjustment of the cutter-blades and guides through the medium of the wedges 19 can be effected at one point in relation to each wedge 19, and therefore overcome the disadvantages and inconvenience, as well as delay, in arriving at an accurate adjustment of the cutter-blades and guides which is encountered in the use of upper and lower adjusting-screws or other devices that require independent manipulation.

As shown by Fig. 5, the adjusting-screws 22 are swiveled to the upper extremities of the wedges 19 and pass through screw-threaded holes in a cap-plate 24 and are operated by nuts 23, integral with the screws 22, said cap-plate being secured over the upper end of the block 6 and having a central opening 25 therein. This modification is intended to demonstrate, in connection with the position of the screws 22, as shown by Figs. 3 and 4, that the adjustment of the wedges 19 may be effected at either end of the improved device.

One of the most essential features of the improved construction is the differentiation in the length of the practical or working edges of the cutter-blades and the guides, or, in other words, the effective guiding portions of the guides are shorter than the cutter-blades, and at their lower extremities the said guides have curved recesses 26, which form a clearance adjacent to the lower extremities of the cutter-blades to permit the shavings to pass out through the central openings 16 in the plate 15 without choking and interfering with the cutting operation at the lower extremity of the bolt operated upon. The lower terminals of the recesses 26 are normally either in vertical alinement with the wall of the opening 16 or project inwardly over said wall to insure the clearance desired and to avoid the formation of shoulders upon which the shavings might lodge. The position of the lower terminals of the recesses 26 is of course de-

pendent upon the adjustment of the guides; but in all adjustments of said parts the clearance desired is preserved and the feature of having the guides of less practical length than the cutter-blades is maintained. The guides and cutter-blades, as shown, are disposed in planes at right angles to each other, so that the guides may effectively perform their function with relation to the cutter-blades.

The upper end of the block 6 is formed with a depression or shallow chamber 26^a, which in the operation of the improved device is flooded with oil for obvious reasons, and in the form of the improved device shown by Fig. 5 said chamber is filled through the opening 25 in the cap-plate 24.

It will be understood that the improved cutter or turning device heretofore described is used in connection with a drill-press or other mechanism, and in the operation of tapering a bolt said press or mechanism supports and revolves the bolt, the cutter-blades and guides being primarily adjusted in accordance with the desired scale or size of bolt.

Having thus described the invention, what is claimed as new is—

1. A bolt cutter or turning device, comprising a block having a bore extending longitudinally therethrough, and cutter-blades and guides adjustably mounted in the block in operative relation to each other, the inner working edges of the guides which contact with the bolt being of less length than the inner edges of the cutter-blades.

2. A bolt cutter or turning device comprising a block having a bore therethrough, and cutter-blades and guides adjustably mounted in the block in operative relation to each other, the lower extremities of the guides being formed with recesses to provide a clearance for the shavings at the lower extremities of the cutter-blades.

3. In a bolt cutter or turning device, the combination of a block having a bore therethrough and slots communicating with the bore, cutter-blades and guides adjustably mounted in the slots and held in operative relation, and wedges interposed between the outer edges of the cutter-blades and guides and the adjacent portions of the outer walls of the slots, the wedges being movable longitudinally of the blades and guides.

4. In a bolt cutter or turning device, the combination of a block having a bore therethrough and slots communicating with the bore, cutter-blades and guides adjustably mounted in the slots and held in operative relation, wedges interposed between the outer edges of the cutter-blades and guides and the adjacent portions of the outer walls of the slots, and an adjusting-screw connected to one end of each wedge and projecting through one end of the block.

5. A bolt cutter or turning device comprising a block having a bore therethrough and segmental slots opening into said bore, segmental wedge-blocks adjustably mounted in the said slots, and cutter-blades and guides adjustably interposed between opposite portions of the wedge-blocks and the end walls of the slots, there being a cutter-blade and a guide

in engagement with the opposite ends of each wedge-block.

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

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