

No. 866,961.

PATENTED SEPT. 24, 1907.

E. H. PROFFITT.
CORE ARBOR.

APPLICATION FILED JAN. 30, 1906.

2 SHEETS—SHEET 1.

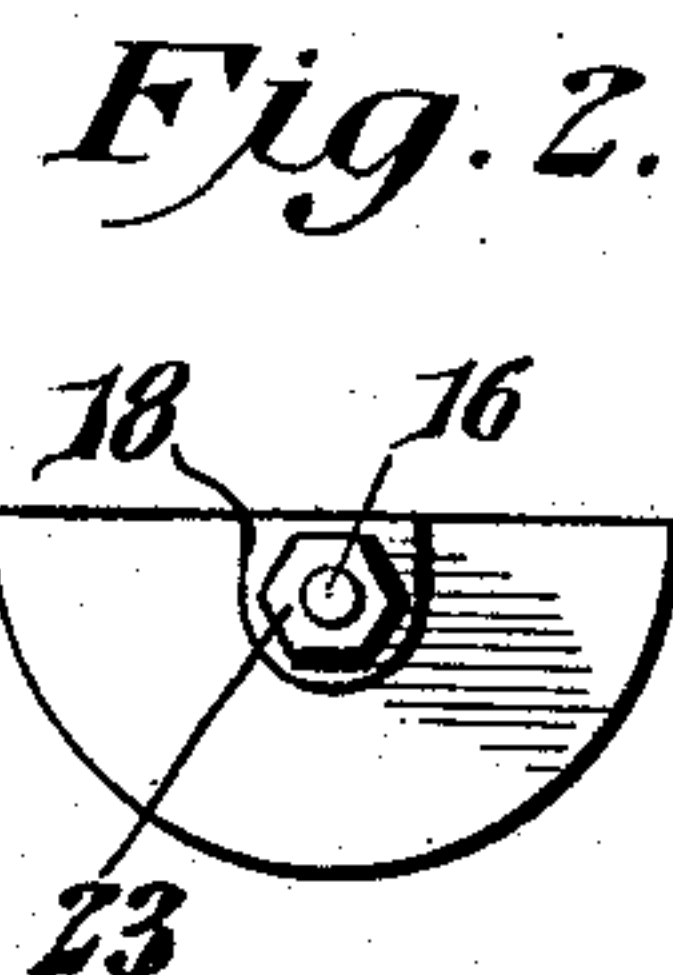
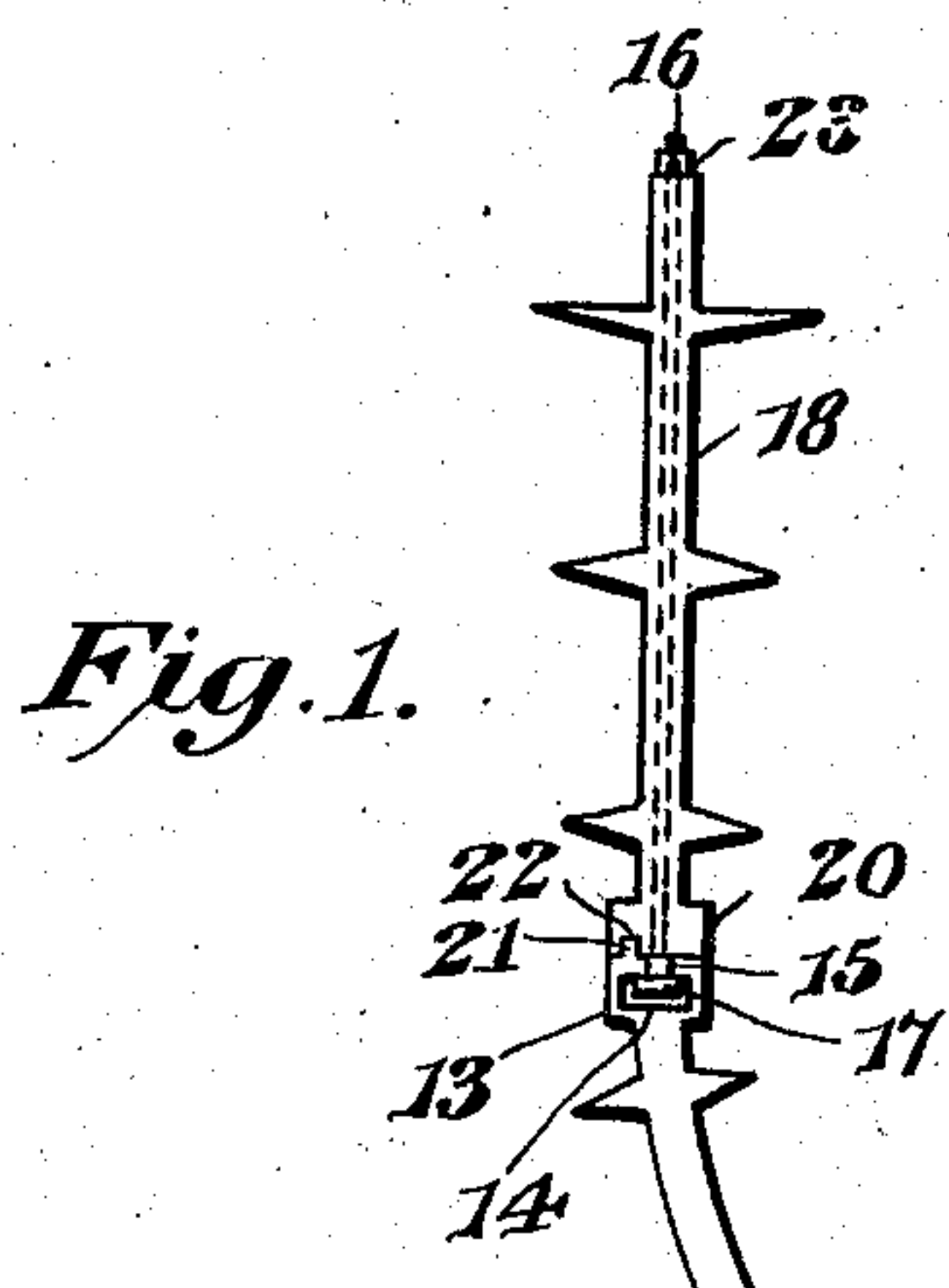


Fig. 7.

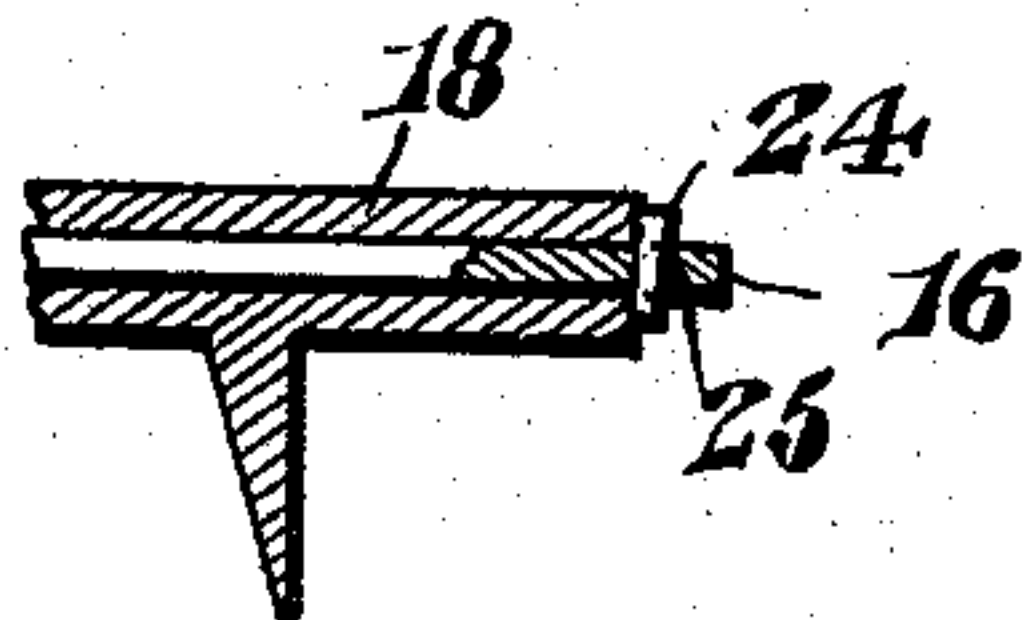


Fig. 6.

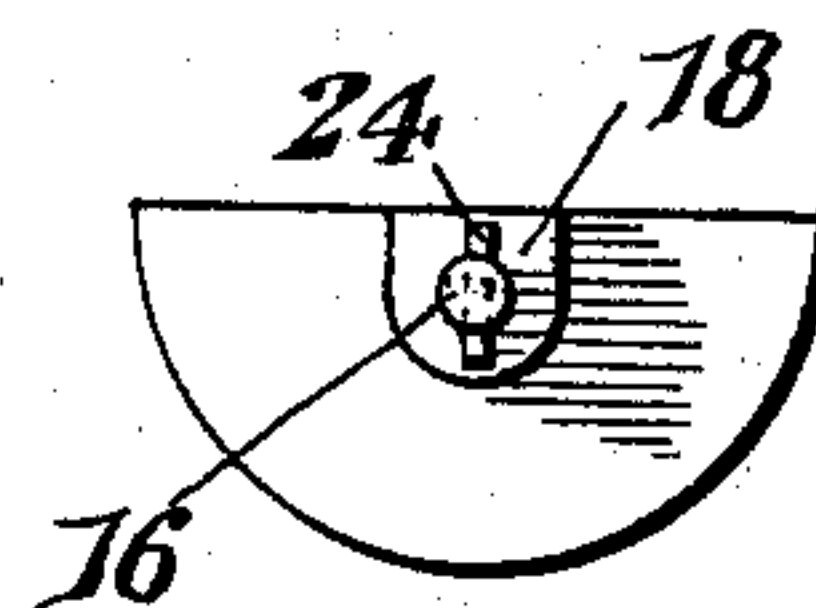


Fig. 3.

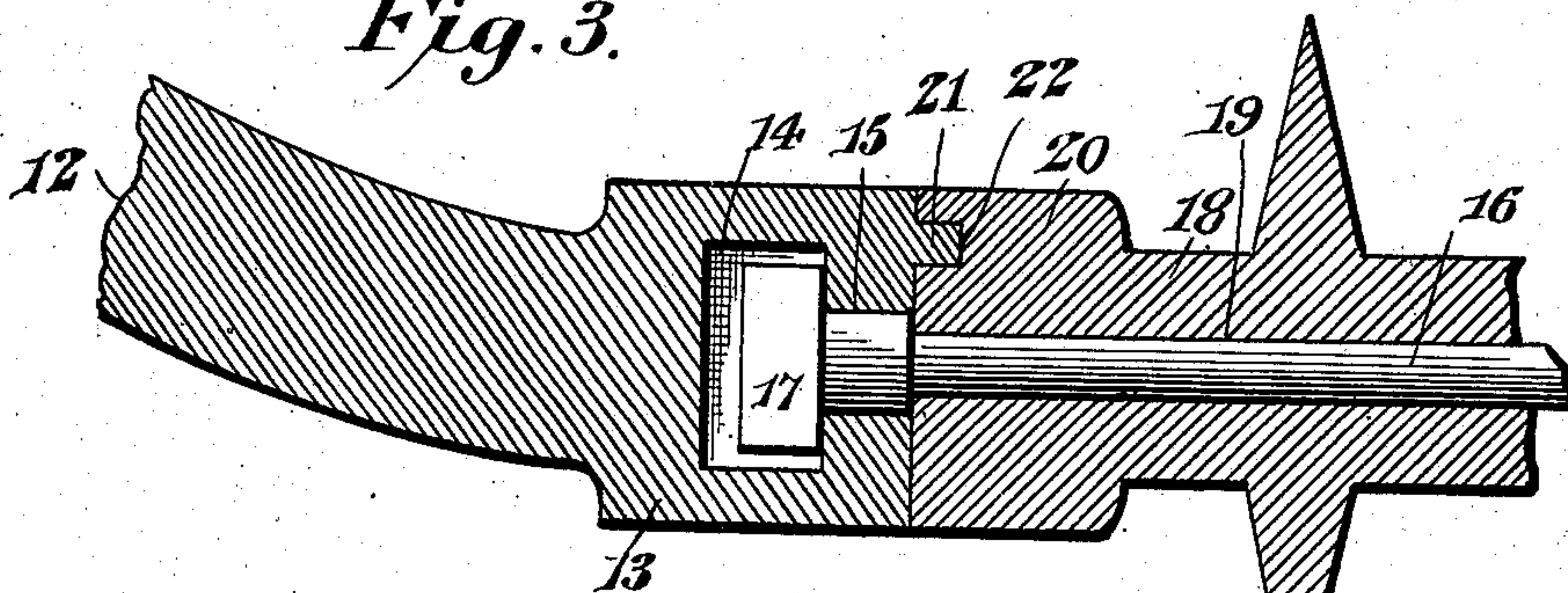


Fig. 4.

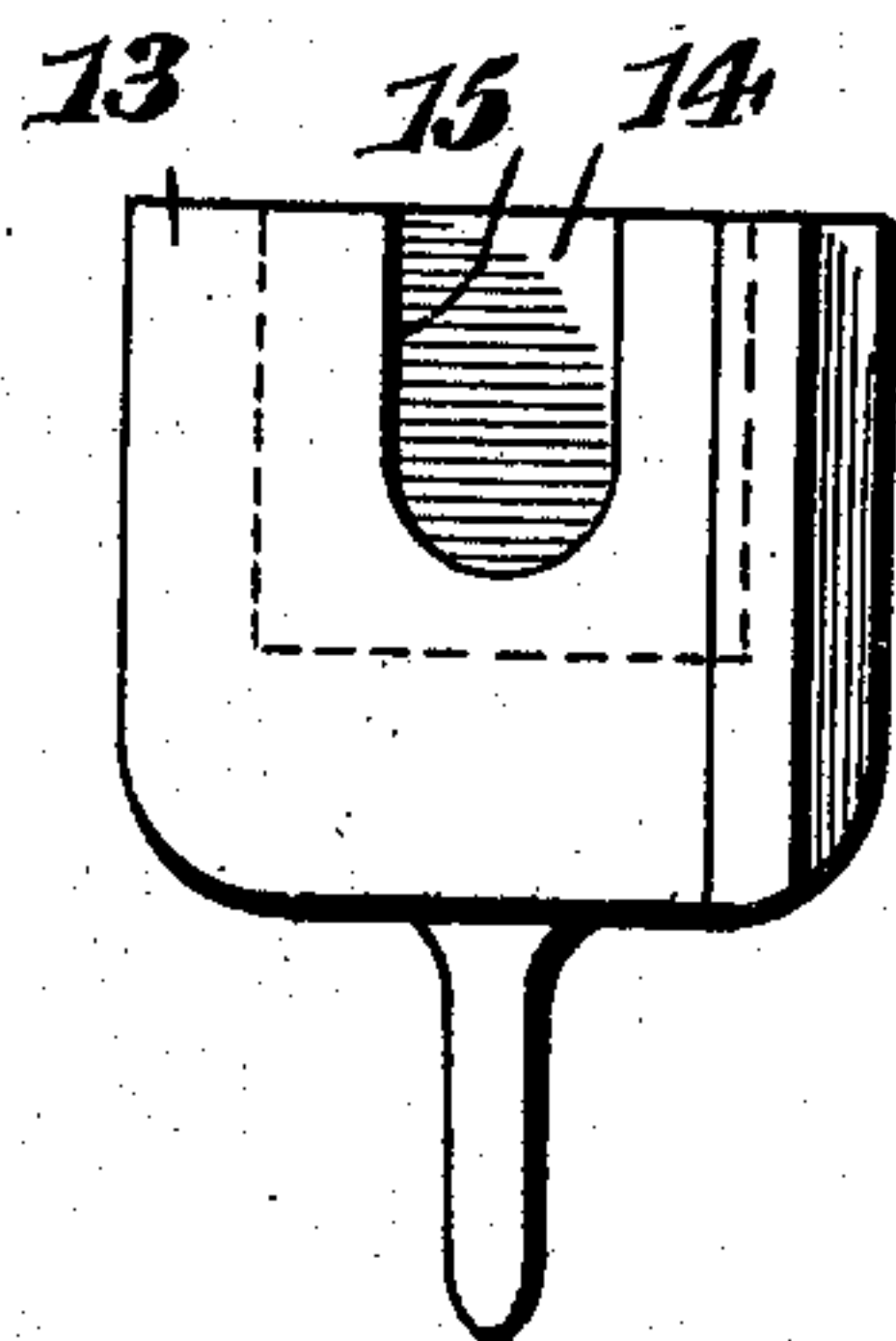
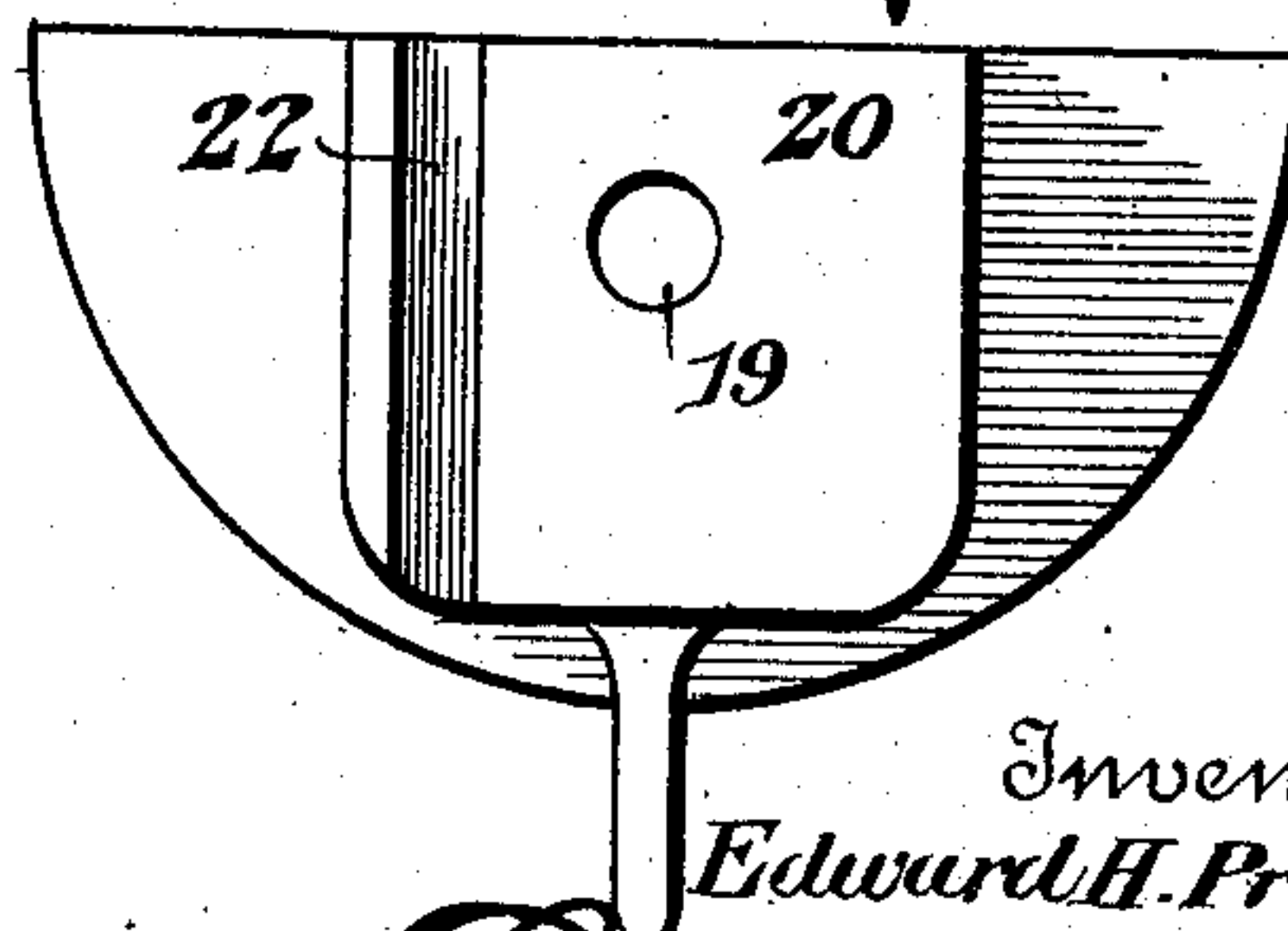


Fig. 5.



Witnesses
Jas. E. McLaughlin
R. L. Foster

Inventor
Edward H. Proffitt
By *E. J. Siggers*
Attorney

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2 SHEETS—SHEET 2.

Fig. 8.

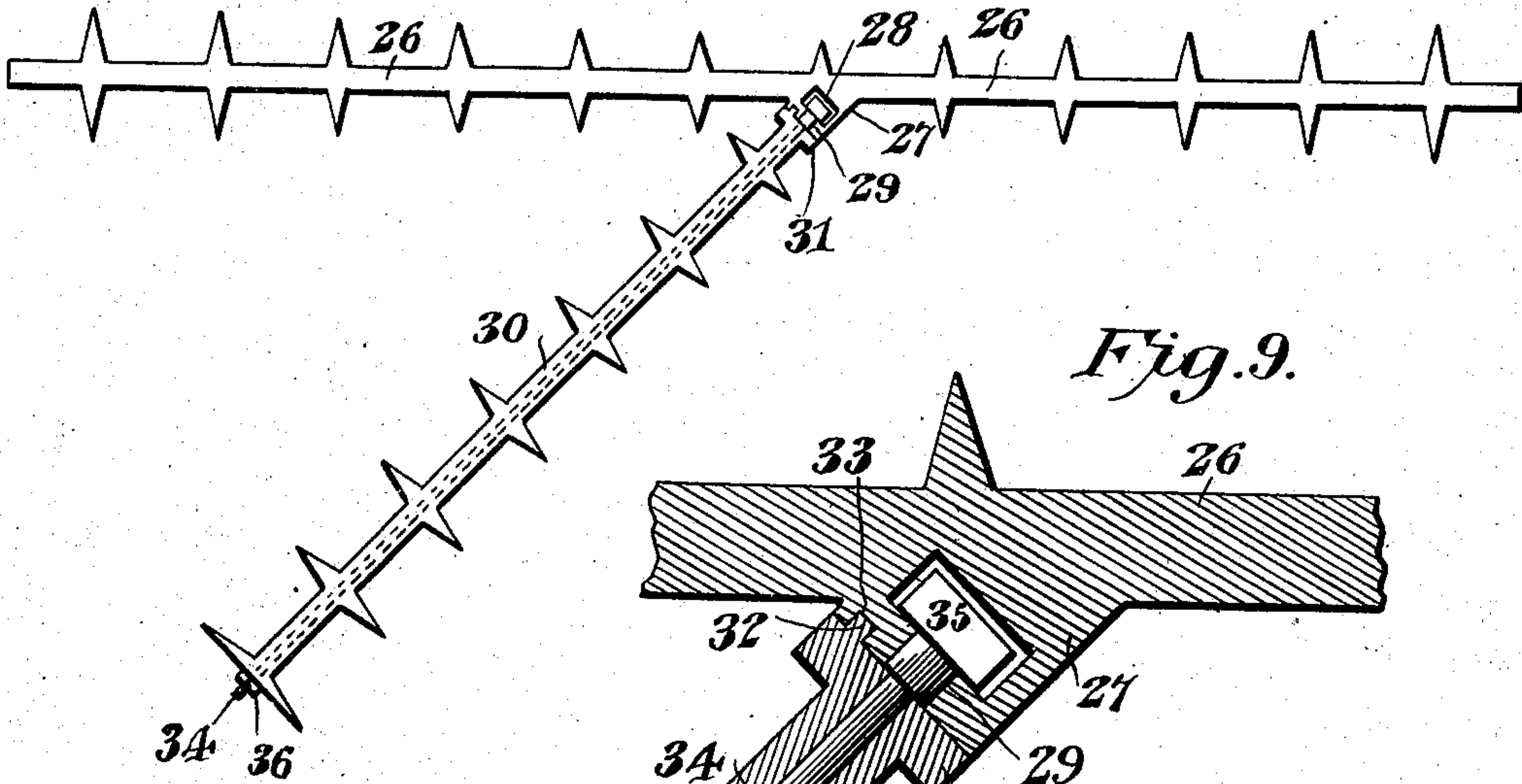


Fig. 9.

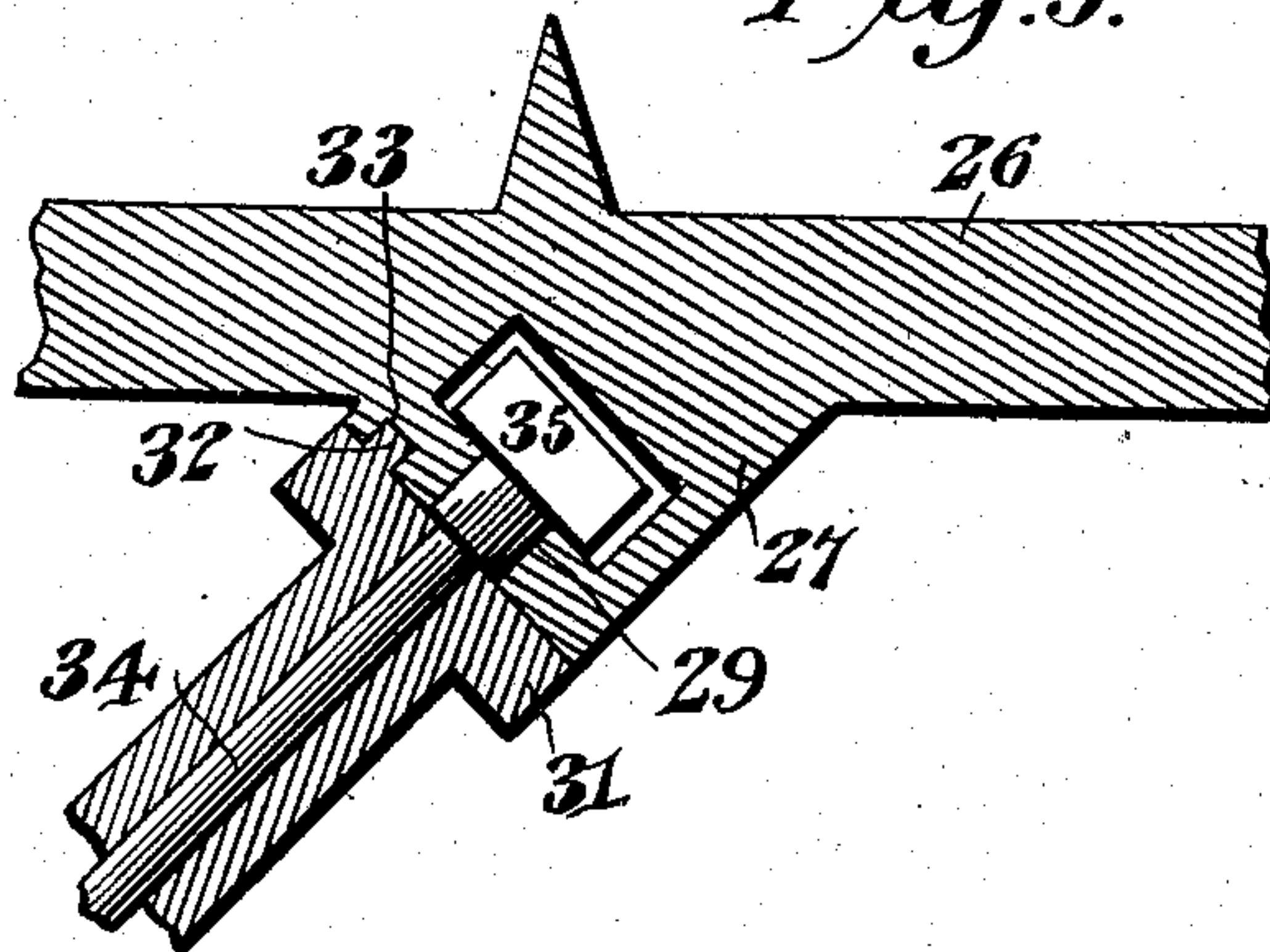


Fig. 10.

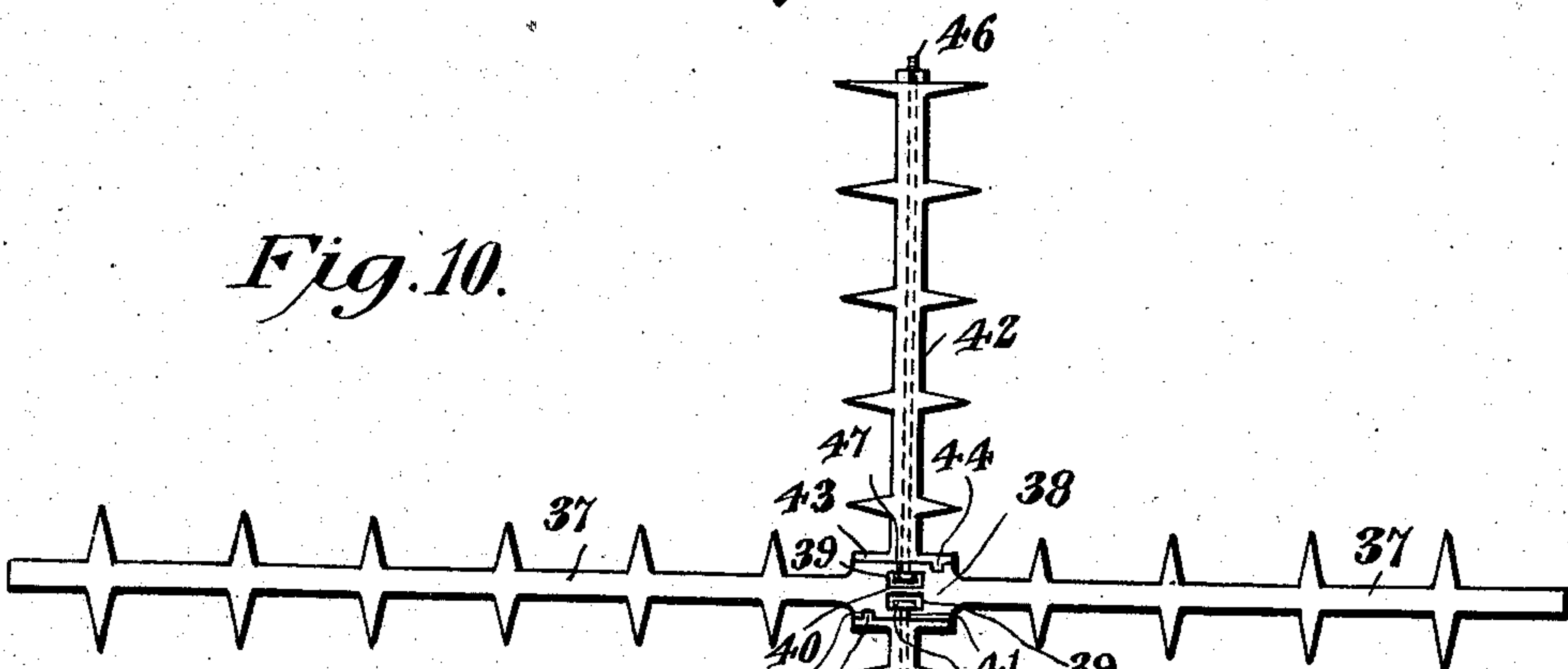
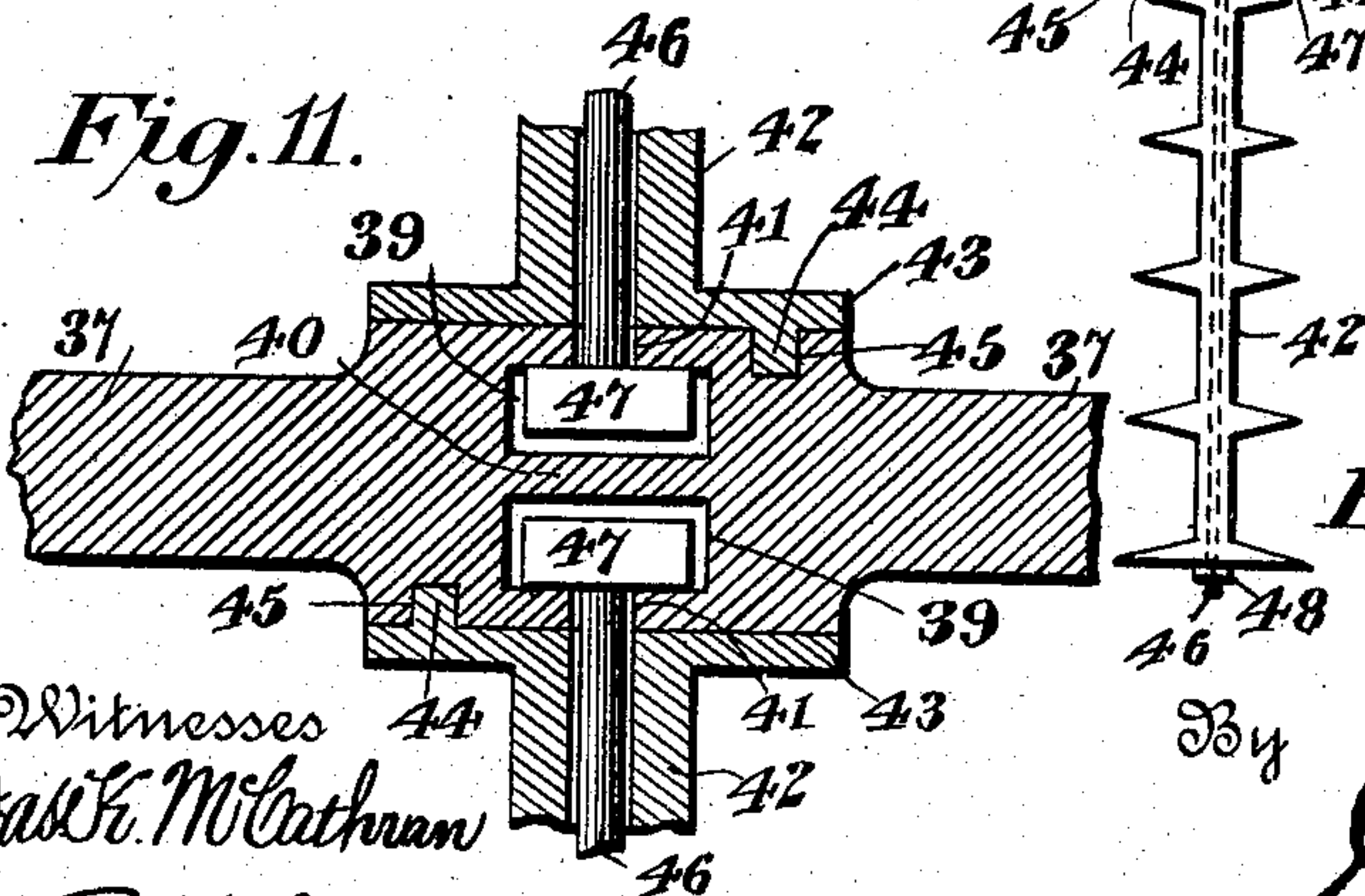


Fig. 11.



Edward H. Proffitt
Inventor

Witnesses
Jas. K. McArthur
B. G. Foster

By

E. G. Figgers

Attorney

UNITED STATES PATENT OFFICE.

EDWARD HILL PROFFITT, OF MADISON HEIGHTS, VIRGINIA, ASSIGNOR OF ONE-HALF TO
LYNCHBURG FOUNDRY CO., OF LYNCHBURG, VIRGINIA, A CORPORATION OF VIRGINIA.

CORE-ARBOR.

No. 866,961.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed January 30, 1906. Serial No. 298,639.

To all whom it may concern:

Be it known that EDWARD HILL PROFFITT, a citizen of the United States, residing at Madison Heights, in the county of Amherst and State of Virginia, has invented a new and useful Core-Arbor, of which the following is a specification.

This invention relates more particularly to the arbors or supports employed in green sand and like cores used in casting pipes and other analogous articles.

In casting certain types of pipes, such as "curved", "T", "Y", "crosses", and the like, difficulty is experienced in withdrawing the arbor from the cast pipe, and the principal object of the present invention is to provide a simple and novel sectional arbor, which can be readily put together, and when assembled, constitutes an efficient rigid structure, for the purpose specified, the parts moreover being so related and connected that they may be easily disassociated and withdrawn from the surrounding article after the same has been cast.

In the drawings:—Figure 1 is a plan view of an arbor employed for a curved pipe. Fig. 2 is an end view of the same. Fig. 3 is a horizontal sectional view on an enlarged scale through the joint between two of the sections. Fig. 4 is an end elevation of the intermediate section. Fig. 5 is a similar view of the coöperating end of one of the outer sections. Fig. 6 is an end elevation showing a slightly modified form of clamping device. Fig. 7 is a detail sectional view through the same. Fig. 8 is a plan view of an arbor employed in the manufacture of "Y" pipes. Fig. 9 is a horizontal sectional view through the joint between the sections thereof. Fig. 10 is a top plan view of an arbor employed in the manufacture of crossed pipes. Fig. 11 is a horizontal sectional view through the joint between the sections thereof.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the embodiment disclosed in Figs. 1 to 5 inclusive, an intermediate core arbor section 12 is employed, which may be of any suitable structure, and is curved to conform to the shape of the core. The ends of this section have enlarged heads 13, provided with open-sided seats 14, open-ended slots 15, extending from the outer ends of the heads, communicating with said seats. A tie-stem in the form of a bolt 16 extends longitudinally from each end of the section 12, the inner portions of said stems extending through the slots 15, and having heads 17 at their inner ends that engage in the seats 14. Thus by moving the inner ends of the tie-stems laterally, the heads can be detached from their seats, and the stems disengaged from the intermediate section 12.

Slidably mounted on the stem 16 are outer core arbor

sections 18, having longitudinal bores 19 that receive the stems. The inner ends of the sections 18 are provided with heads 20 that abut against the heads 13, and said heads 13 are provided with outstanding lugs or ribs 21 that are detachably received in recessed seats 22 formed in the heads 20.

Clamping devices are mounted on the outer ends of the stem 16. These devices may be in the form of nuts 23, threaded on the stems, or wedge pins 24, as shown in Figs. 6 and 7 may be employed, said pins passing through suitable openings 25 in the outer ends of the stems.

In assembling the arbor, the heads 17 of the stems are placed in position in their seats 14, and the outer sections 18 are slipped upon said stems, after which the clamping devices are placed upon the outer ends of the stems, and are brought firmly against the outer ends of the outer sections. This will cause the sections to be securely fastened together, and as their abutted ends have broad bearing surfaces, there will be no lateral play or relative swinging movement. Furthermore, the lugs or ribs 21 engaging in the seats or slots 22 prevent the relative rotation of the sections. The sand is then applied to the arbor in the ordinary manner, and the core is placed in the mold. After the casting has been made to remove said core, it is only necessary to detach the clamping devices 23 or 24, whereby the outer sections may be readily slipped longitudinally from the casting. The tie-stems or bolts can thereupon be detached from the intermediate arbor section, and said arbor section can also be removed. It will thus be seen that a simple structure is provided, which, when the parts are assembled, constitutes a strong and rigid support or arbor, and yet which can be readily dismembered for the purpose of removal from the casting.

A slight modification of the structure is shown in Figs. 8 and 9. The embodiment therein disclosed is particularly intended for "Y" pipes. A core arbor section 26 is provided at an intermediate portion with an offset head 27, having an open-sided seat 28 and a slot 29 communicating therewith. Another core arbor section 30 is provided with a head portion 31 that abuts against the head 27 and has a rib or lug 32 engaging in a slot or seat 33 in the head 27. A tie-stem 34, passing longitudinally through the section 30, extends also through the slot 29, and has a head 35 detachably engaging in the seat 28. On the outer end of the stem 34 is mounted a clamping device 36. It will be apparent that the structure and operation of this device is the same as that already described.

In the manufacture of "crosses", the structure illustrated in Figs. 10 and 11 may be employed. In this embodiment, a core arbor section 37 has an intermediate head 38, provided with spaced seats 39 that are sepa-

rated by a reinforcing web 40. Open-sided slots 41 extend from the outer faces of the head to the seats 39. Oppositely disposed core arbor sections 42 have inner head portions 43 abutting against the outer flat faces of the head 38, and are provided with lugs or ribs 44 that engage in seats or slots 45. Tie stems 46 extending longitudinally through the sections 42 and through the slots 41, are provided with heads 47 that detachably engage in the seats 39. Clamping devices of any suitable character as 48, mounted on the outer ends of the tie stems, serve to hold the sections 42 in position, yet permit of their ready detachment.

It will of course be understood that the structures disclosed in Figs. 8 and 10 are not the only modifications of which the invention is capable, but merely illustrate how the said invention can be employed in the manufacture of pipes and analogous articles of different characters and shapes.

From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a core structure of the class described, the combination with a core arbor section having a recessed seat that opens through one side of the arbor section, one wall of the seat having a slot of less width than the seat and having an end opening through the same side of the arbor section as said seat, of a tie stem having a head at one end that is laterally movable into and out of the seat, the portion of the stem adjacent to the head being likewise movable into and out of the slot, and a core arbor section slidably mounted on the stem.
2. In a core structure of the character described, the combination with a core arbor section having an open-sided seat, and an open-ended slot communicating therewith, of a tie-stem that passes through the slot and has a head detachably engaging in the seat, said stem and head disengaging from the slot and seat on the lateral movement of the stem, another core arbor section slidably and detachably mounted in the stem and having its inner end abutted against the first mentioned core arbor section, the abutting portions of said sections being provided one with a recessed seat, and the other with a projecting lug that engages in the seat and prevents the relative rotation of the sections, said lug disengaging from the seat upon the longitudinal movement of the core arbor section on the stem, and clamping means mounted on the outer end of the stem and engaging the outer end of the core arbor section that is thereon to hold the same abutted against the first mentioned section and also to maintain the head in its seat.

3. In a core structure of the character described, the combination with a core arbor section having a plurality of open-sided seats and open-ended slots communicating therewith, of tie stems disposed in angular relation to the section and having heads located in the seats, said stems passing through the slots and being removable through the open ends thereon on the lateral movement of the stems, separate core arbor sections slidably mounted on the tie stems and having their inner ends abutted against and detachably interlocked with the first mentioned section, being movable into and out of such interlocking engagement upon their reciprocations on the stems, and clamping devices mounted on the outer ends of the stems and abutted against the outer ends of the core arbor sections mounted on said stems.

4. In a core structure of the class described, the combination with an intermediate curved solid core section formed in a single piece, of hollow straight end sections having their inner ends associated with the ends of the curved section, and detachable interlocking connections between the coacting ends of the different sections, said connections being extended through the hollow sections and operable through the outer ends thereof.

5. In a core structure, the combination with an intermediate curved solid core section having enlarged heads at its ends, said heads being provided with open sided sockets and slots communicating with the sockets, of tubular straight end sections having detachable interlocking engagements with the heads, bolts passing through the end sections and having heads that detachably engage in said sockets, said bolts passing through the slots, and means for maintaining the bolts and end sections in their interlocking engagements with the heads.

6. In a core structure of the class described, the combination with a core section having outstanding wings and a socket having an open side, said section also having an open ended slot communicating with the socket, of a second core section having an interlocking engagement with the first mentioned section, said second section having a bore and a plurality of outstanding wings, and a bolt that snugly fits in the bore and passes through the slot, said bolt having a head that detachably fits in the socket and is removable through the open side thereof.

7. In a core structure, the combination with a core arbor section having an enlarged head, said head having angularly disposed sides, a seat opening through one of the sides and a slot communicating with the seat and opening through a different side, of a tie stem passing through the slot and having a head detachably engaged in the seat, a second core section slidably mounted on the stem and having a head that abuts against the head of the first mentioned section, said head having a detachable interlocking engagement that prevents the rotation of the second section on the tie stem, and means mounted on the outer end of the tie stem for holding the second section against its sliding movement and maintaining the heads in interlocking engagement.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD HILL PROFFITT.

Witnesses:

W. L. BRADY,
A. P. MONTAGUE.