

H. CHAUSSINAND.

OAR.

APPLICATION FILED AUG. 25, 1906.

923,945.

Patented June 8, 1909.

8 SHEETS—SHEET 1.

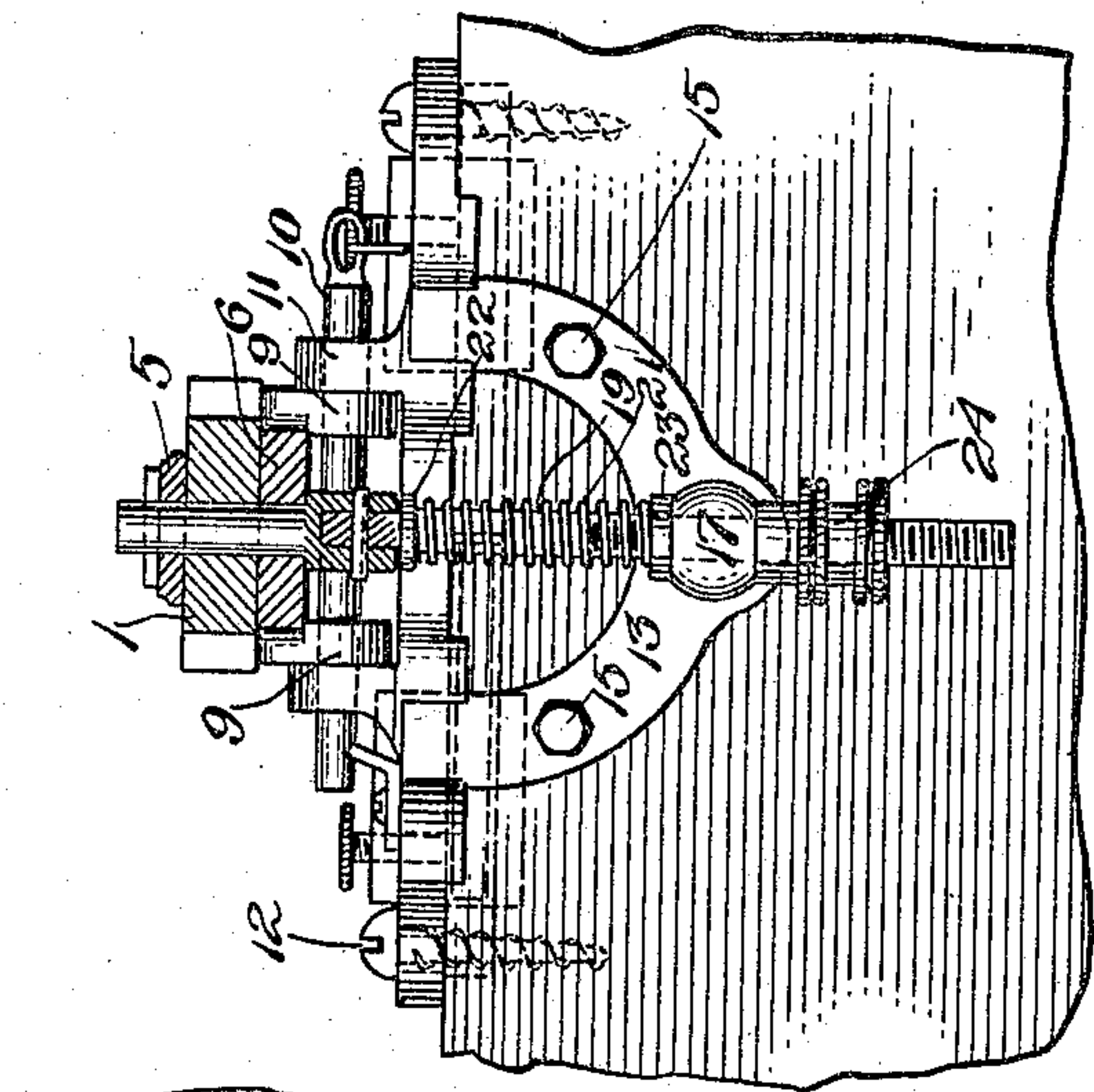


Fig. 3.

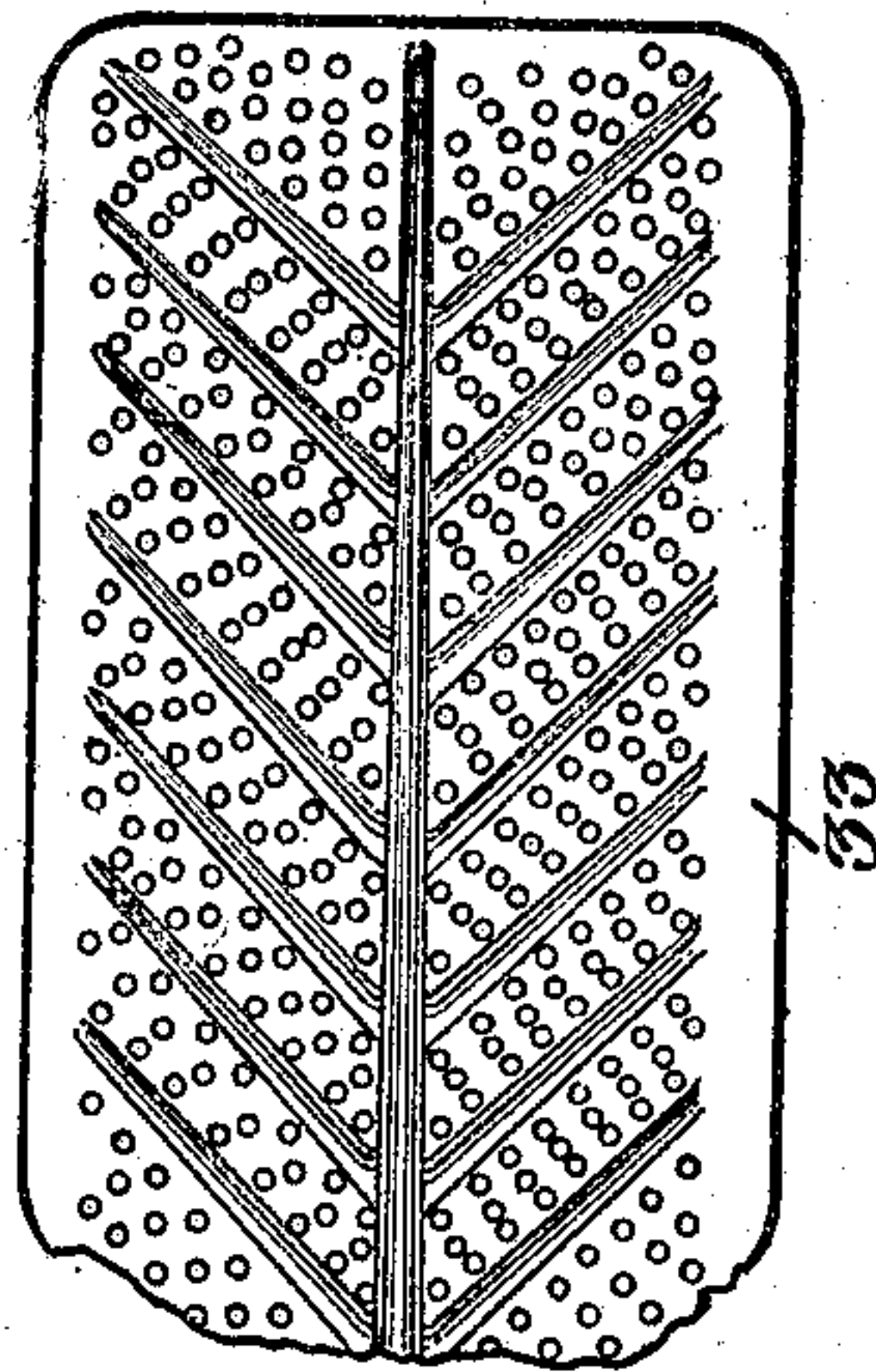


Fig. 2.

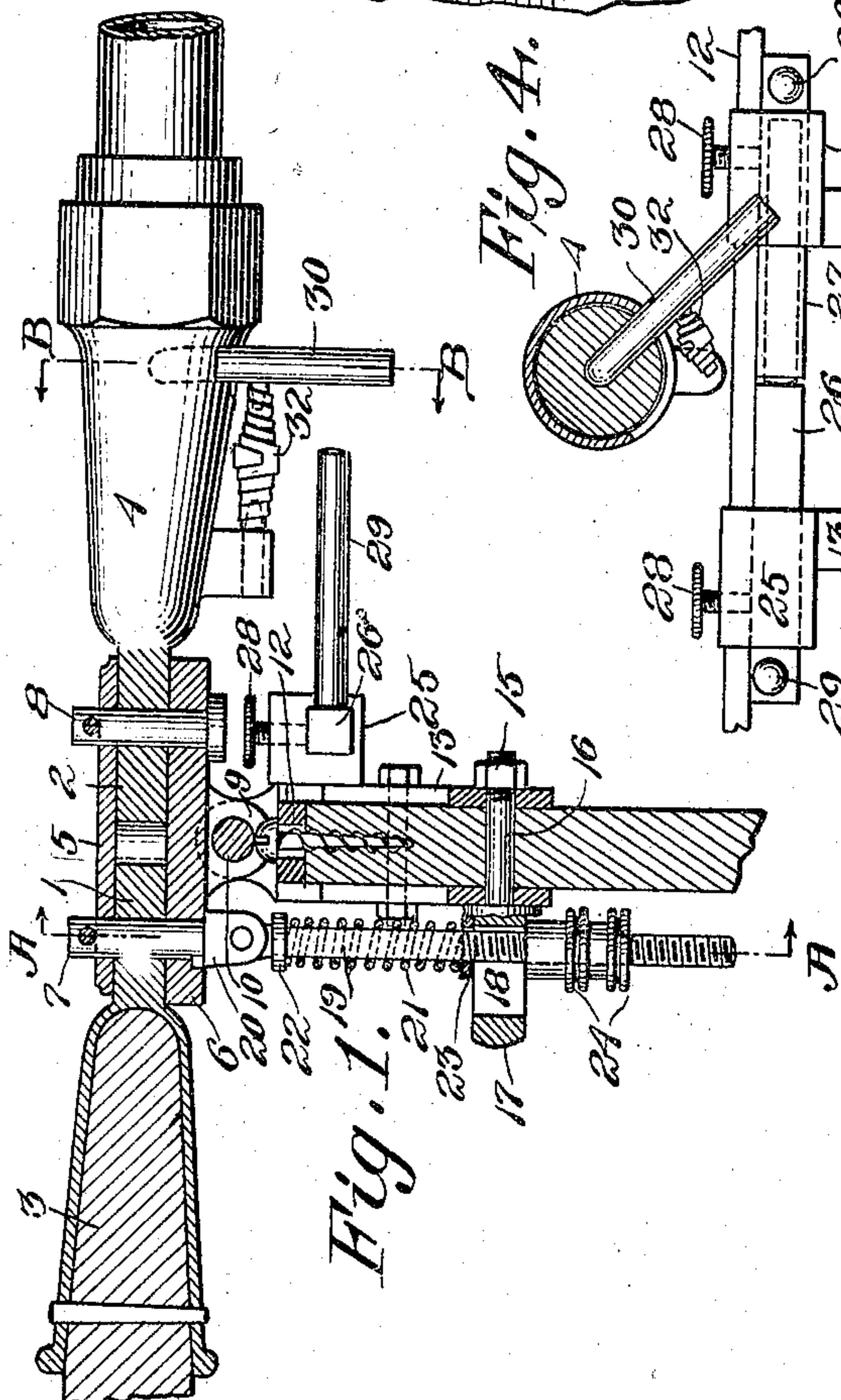


Fig. 1.

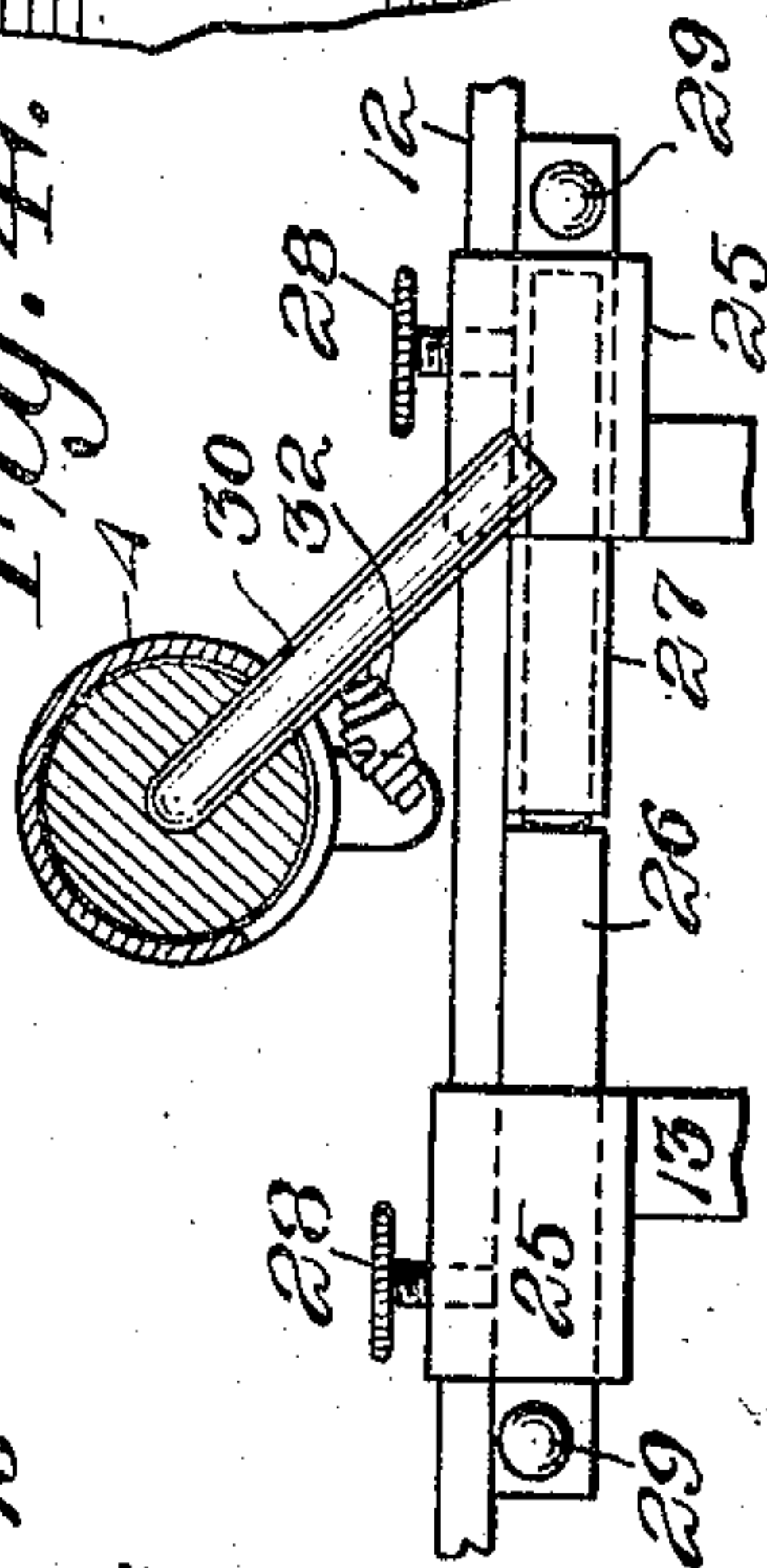
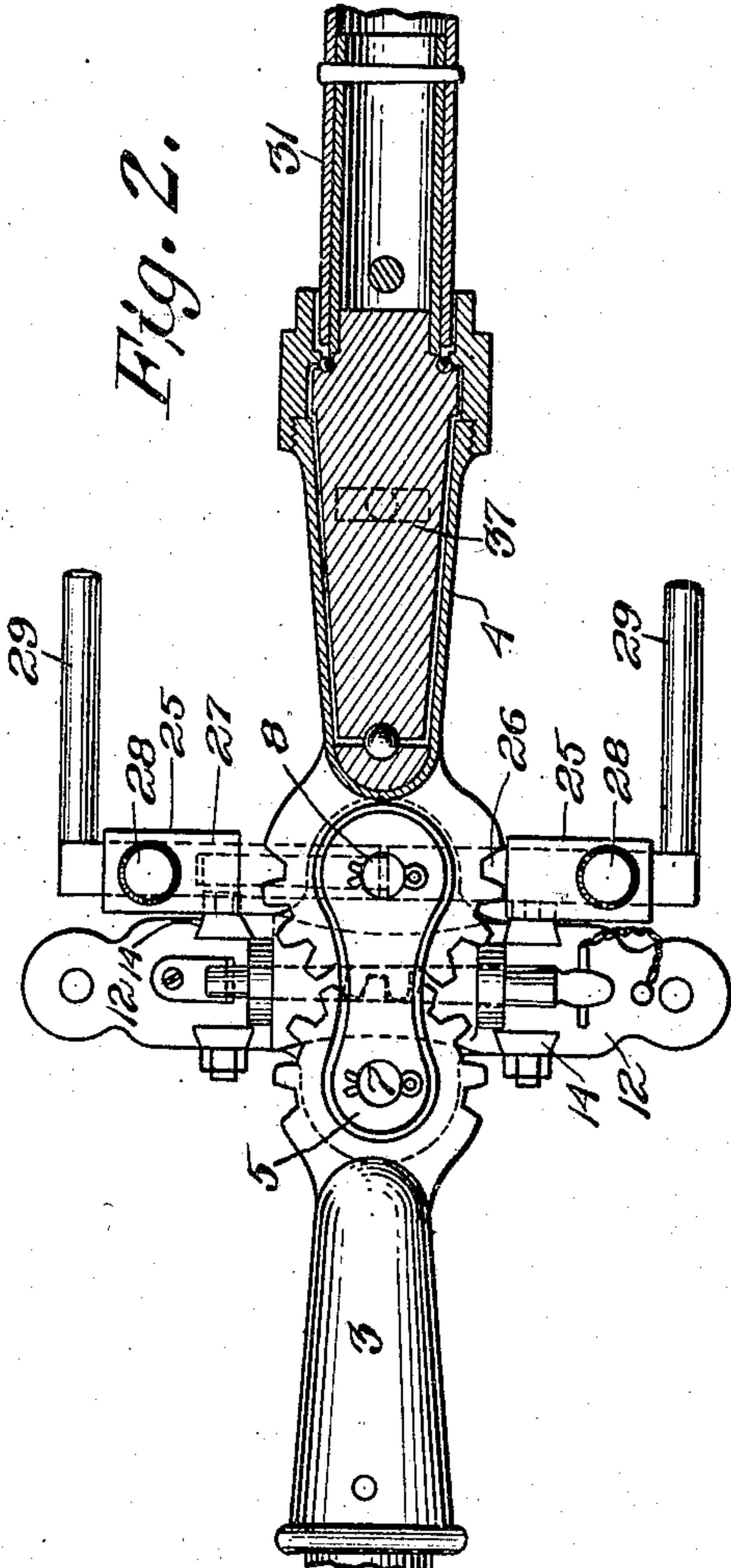


Fig. 4.



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by

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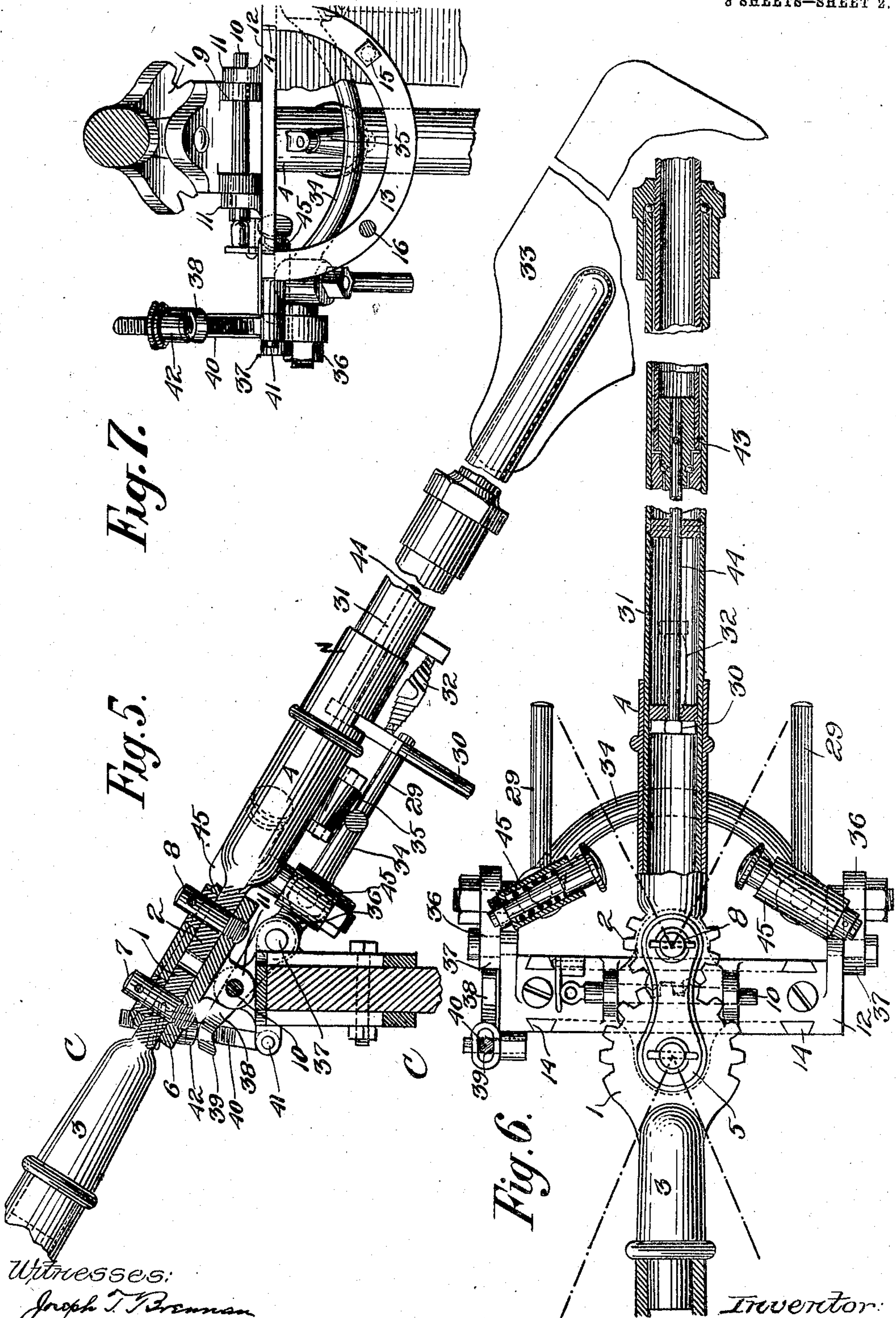
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

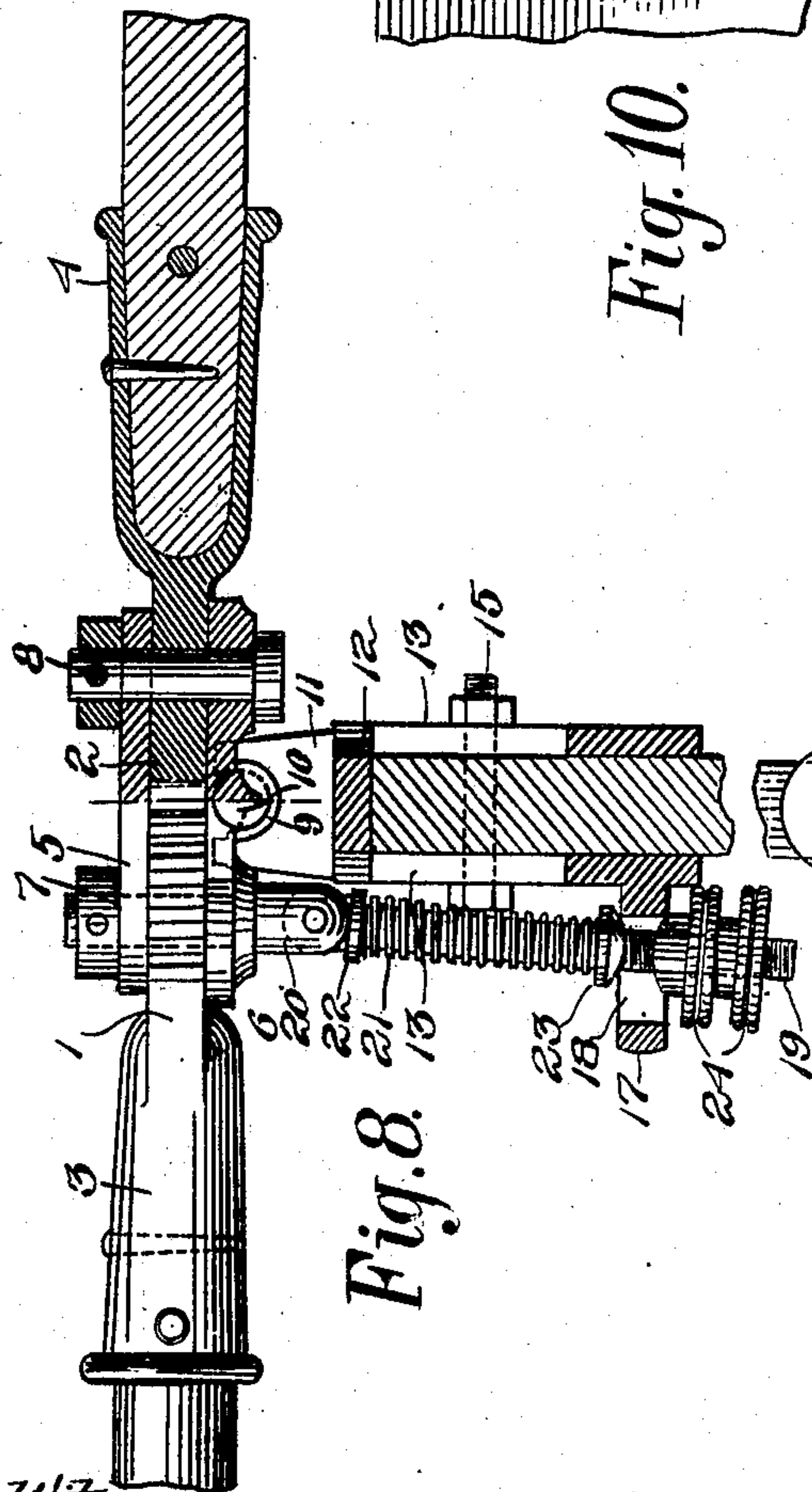


Fig. 8.

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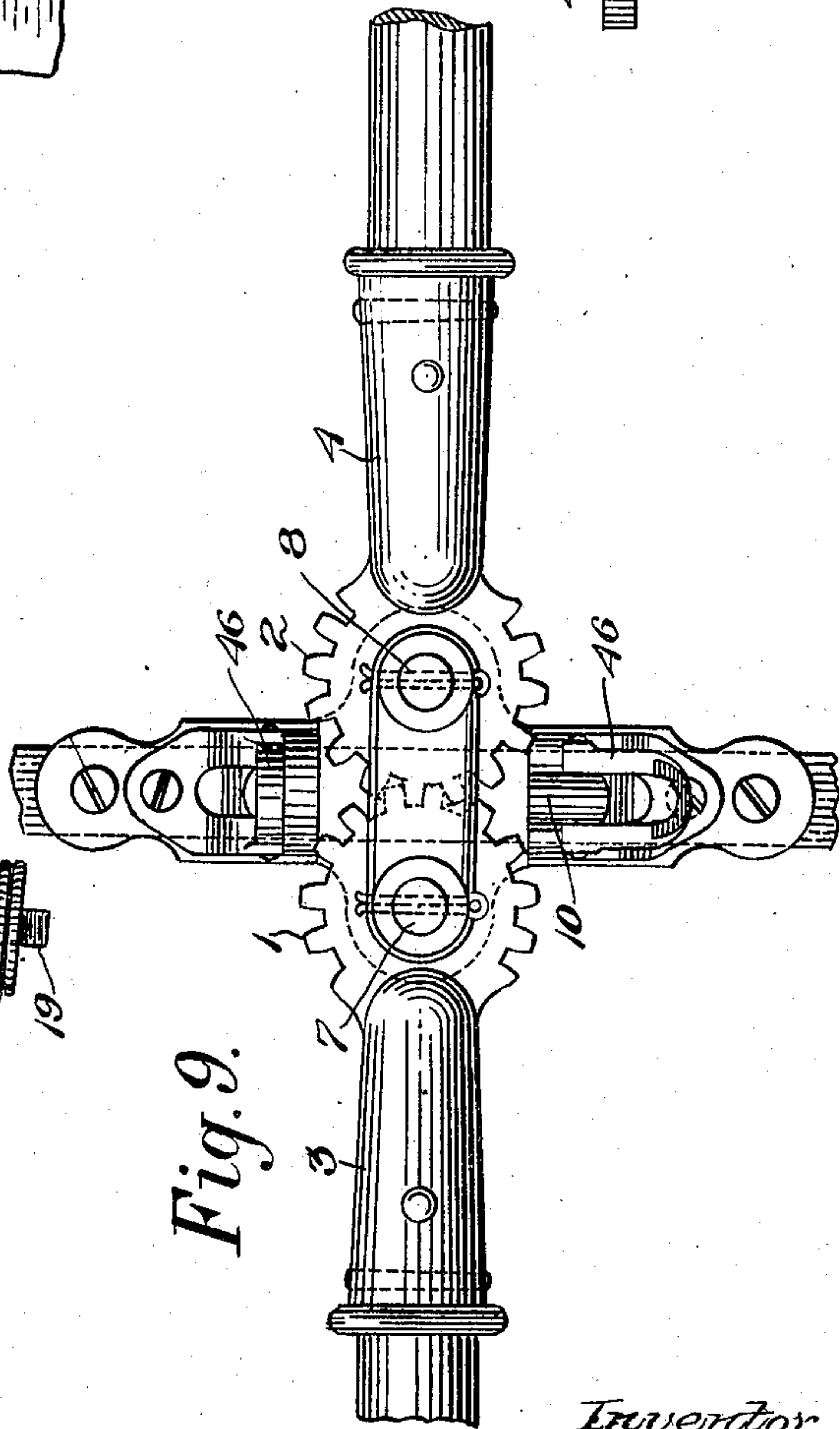


Fig. 9.

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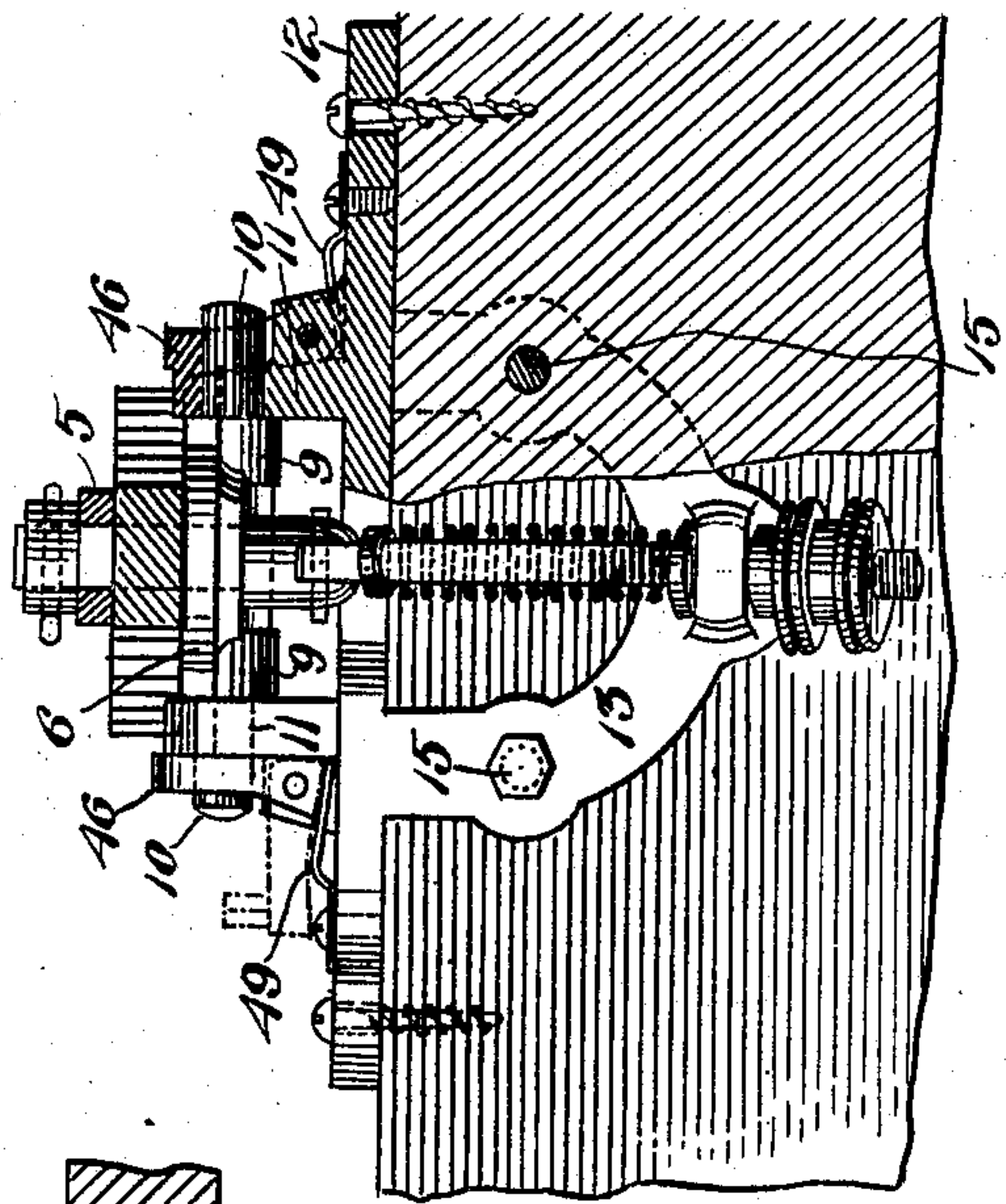
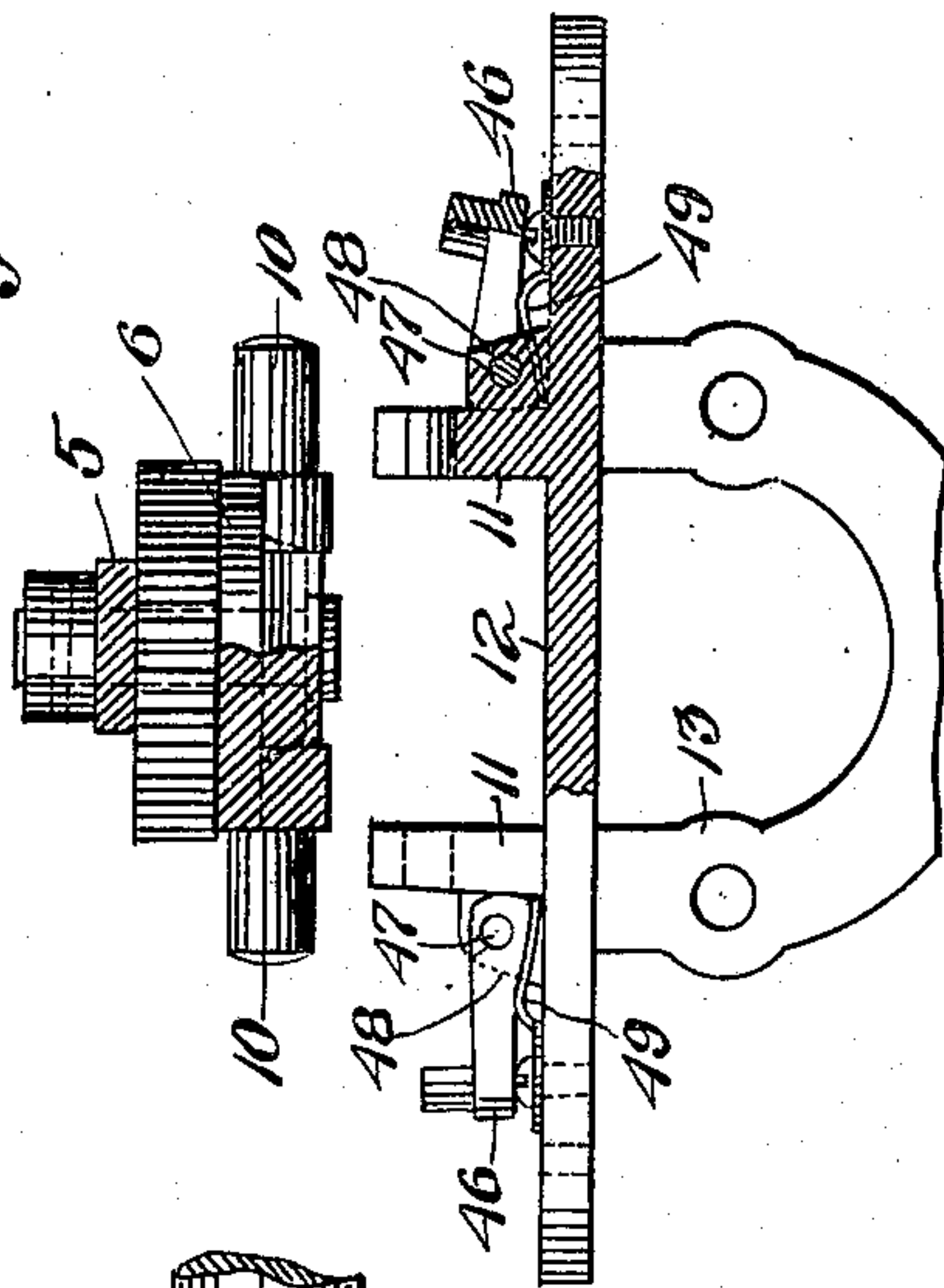


Fig. 10.

Fig. 11.



UNITED STATES PATENT OFFICE.

HIPPOLYTE CHAUSSINAND, OF ST. DIZIER, FRANCE.

OAR.

No. 923,945.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed August 25, 1906. Serial No. 331,950.

To all whom it may concern:

Be it known that I, HIPPOLYTE CHAUSSINAND, a citizen of the French Republic, and residing at St. Dizier, Haute-Marne, France, have invented a certain new and useful Improvement in Oars, of which the following is a specification.

This invention is intended to provide certain improvements in oars whereby the difficulties encountered in the use of oars of the ordinary type will be avoided, my improvements being herein represented as embodied in a bow-facing oar, so-called, to which type of oar said improvements are particularly applicable.

To permit of rowing while looking ahead the improved oar is made in two parts each pivotally mounted and connected by toothed sectors the radii of which are so calculated as to obtain, in each particular case, the most favorable effect, while taking account for example of the strength of the oarsman, the nature of the craft etc. This oar may be provided with means permitting either of limiting or of regulating at will the dip of the blade or the amplitude of its angular movements: the loom may be fitted telescopically so as to permit of regulating the length at will: a special device has also been provided to cause the oar to feather automatically when commencing the return movement ahead and to restore it to vertical position prior to the useful or operative rearward movement: finally by using a perforated blade the eddies and vibrations are suppressed or reduced and the efficiency is increased while at the same time increased stability of the direction of the blade is obtained, to which blade may be given according to desire a variable shape and surface and an arm of suitable length.

The oar may be entirely of metal, the sheet metal blade being strengthened by suitably arranged ribs.

The same oar may comprise all or part of the arrangements above mentioned.

Figures 1 to 4, Figs. 5 to 7, and Figs. 8 to 11 show by way of example three embodiments of the invention. Fig. 1 is a part elevation and part section of the oar fixed to the gunwale of a skiff. Fig. 2 shows the same oar in part plan and part horizontal section. Fig. 3 is a part elevation and part section along the line A—A of Fig. 1. Fig. 4 is a part elevation and part section along the line B—B of Fig. 1. Fig. 5 is a part elevation

and part section, with portions broken away, of a modified construction of oar embodying the invention and also fixed to the gunwale of a skiff. Fig. 6 is a view of the same oar, in part plan and part horizontal section. Fig. 7 is a part section and part elevation along the line C—C of Fig. 5, part being broken away. Fig. 8 is a part elevation and part section, with portions broken away, of a third construction embodying the invention and fixed to the gunwale of a skiff. Fig. 9 is a plan thereof. Fig. 10 is a view, partly in elevation, partly in section taken from the interior of the skiff. Fig. 11 is an analogous view taken from the exterior of the skiff and showing certain pieces separated from one another.

The same reference numerals denote the same parts in the several views.

As regards in the first place the example shown in Figs. 1 to 4, the reference numerals 1, 2 denote two toothed sectors, one of which is fixed to the handle 3 and the other to the loom 4 of the oar. In this example the sector 1 is of smaller radius than the sector 2: but the reverse may be the case, the ratio between the radii varying according to the case. The two toothed sectors are held between two plates 5 and 6 by means of pins 7, 8, around which they are able to pivot: the lower plate 6 has two lugs 9: a spindle 10 serving as axle passes through orifices in said lugs and through those in lugs 11 of a base plate 12 which is suitably fixed on the gunwale of the boat. In this way the combination of the toothed sectors and of the plates is secured to the gunwale and can pivot around the spindle 10 turning the oar therewith. I have found that if the plate 12 be simply screwed to the gunwale there is a risk of injuring it, the effort not being spread over a large enough surface. There are therefore added two like stirrup-pieces 13 the ends of which enter dove-tailed mortises 14 formed in the plate 12. These stirrup pieces bear against the edge of the boat, one in the interior and the other on the exterior and are secured by bolts provided with nuts 15. The stirrup pieces play at the same time another role, which is to support the device permitting of limiting and of regulating the dip of the blade. To this end the lower bolt 16 carries a chape 17 having an elongated slot 18 in which slides the rod 19 of the device for regulating the dip. This rod is jointed besides to a chape 20 carried by the

pin 7. It is surrounded by a coil spring 21 which abuts against the collar 22 on the rod 19 and against a washer 23 supported by the chape 17. The lower part of the rod 19 is screw-threaded and enters the regulating nut and jam-nut 24. The oar may dip until the nut abuts against the chape 17 but it cannot dip farther, the handle being retained by the rod 19 jointed to the pin 7. To restore the oar to horizontal position it suffices to press on the wrist, the rod being then lowered and compressing the spring 21. On the loom of the oar there may be distance marks: in this way it can be immediately seen how far the oar has dipped, and the dip of each oar may be regulated. The dip may also be indicated on the interior of the skiff by indicator pointers. The outer stirrup piece 13 carries also the means for causing the blade to turn through an angle of 90° at the end of its movement for feathering. Two slide blocks 25 are solid with the two branches of the stirrup 13 and two rods 26, 27 can slide in said blocks and can also telescope one within the other. The blocks 25 carry set screws 28 which enable the rods to be locked at the desired position. The rods each carry a stop pin 29 perpendicular to their direction. The feathering of the blade is effected by the blow of a small rod 30 carried by the loom 31 against one of the stop pins 29. The loom 31 is mounted on ball bearings in the socket portion 4 which is perforated to allow for the passage of the rod 30. When this rod has struck against one of the stop pins and thereby effected one-half of the feathering movement this movement is completed by a spring 32 which is compressed during the first half of said movement and thereafter expands; the rod thus turns around 90° carrying with it the loom 31 and the blade which is affixed to its extremity. It will be observed that the rotations of the blade in one direction or the other in order to bring the blade into vertical or horizontal position are produced after an angular displacement toward the front or the rear the extent of which depends upon the distance between the stop pins 29; this movement can thus be regulated by changing this distance and for this purpose it suffices to slide the rods 26 in the blocks 25 after having unlocked the screws 28: said screws may be locked again after the adjustment. Supplemental stops, which may be elastic or not, may be employed to stop the oar at the end of its forward and rearward movements without straining the rod 30. The oar shown in Figs. 5 to 7 comprises elastic stops of this kind as will be seen later.

The loom 31 which carries the blade may, if desired, be constituted of several sections capable of telescoping one within the other so as to permit the adjustment of the length according to circumstances.

The blade 33 which is at the end of the loom 31 may be of wood or metal, and as above stated one feature of the invention consists in the application of a blade provided with a large number of small holes. When the blade is of sheet metal it is strengthened by ribs which may be either pinnated or palmated longitudinal parallel, etc. but preferably comprise a central longitudinal rib and a series of supplementary ribs extending outward and forward therefrom, as shown in Fig. 2.

In the example shown in Figs. 5 to 7 the sector 1 of the handle is represented as of larger radius than the sector 2 of the loom. In this case the dip is limited and regulated by means of an external track 34, the inclination of which may be varied at will and on which the loom of the oar rests by the intermediary of a roller 35 with which it is provided. The track 34 is carried by two arms 36 which are able to turn around the axis 37 carried by the plate 12. One of the arms 36 is prolonged by a lever 38 at the other side of the pivot 37. The lever 38 terminates in an eye 39 of elongated form. Through this eye passes a screw 40 jointed at 41 to a lug in the plate 12. Above the lever is a nut 42. On lowering the nut on the screw 40 the lever 38 is lowered and in consequence the arms 36 and the track 34 are raised. The inclination of the oar is thus altered. Likewise by raising the nut 42 the oar is permitted to dip farther. On the other hand, nothing hinders the oar from being raised to horizontal position. In the arrangement first described the loom 31 turned with the blade: in this case the loom is rigidly fixed to the socket 4 of the blade and the blade may turn through 90° along its longitudinal axis: to this end it is provided with a tail 43 which is mounted on ball bearings in the hollow loom 31: the rod 30 is connected to this tail by a rod 44 which passes along the axis of the loom 31. In this instance the distance between the abutments 29 cannot be regulated; these abutments are solid with the track 34 which carries besides the spring buffers 45 stops against which the socket 4 abuts at the end of its movement so as to limit the extent of the movement of the oar without straining the reversing rod 30.

The construction shown in Figs. 8 to 11 only differs from that illustrated in Figs. 1 to 4 in respect of the details of construction. In this construction the plate 12 is in one piece not only with the supporting brackets 11 of the oar but also with the stirrup pieces 13: further the chape 17 is solid with one of the stirrup pieces. Besides, the axis of oscillation 10 is in one piece with the plate 6 and is maintained in the brackets 11 by caps 46 which are jointed at 47 to projections 48 on the plate 12. By means of this arrangement it is easy to remove the oar after lower-

ing the caps as shown in Fig. 11. The springs 49 maintain the caps in their two positions, that is to say in raised or lowered position.

I wish it to be understood that the details of construction illustrated and described are only given by way of example and that the various parts which constitute the apparatus described may be combined in any manner or employed separately.

10 Having now described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. The combination with a fixed base plate and an oar mounted thereon to oscillate on a 15 horizontal axis, of means for controlling the dip of the oar blade comprising a rod which is hinged at one end and has a relative sliding movement at its other end, said rod being provided with an adjustable abutment serving 20 as a stop for limiting its sliding movement and thereby determining the maximum inclination of the oar.

2. The combination with a fixed base plate and an oar mounted thereon to oscillate on a 25 horizontal axis, of a track mounted to turn about a horizontal axis, independently of the oar, and forming a support for the latter during its forward and backward movements, and means for limiting the dip of the oar comprising a rod connected at one end to the 30 base plate and provided at its other end with an adjustable abutment adapted to serve as a stop for limiting the inclination of said track.

35 3. An oar comprising a blade and a handle pivotally supported for forward and backward movements, said blade being also mounted to turn on a longitudinal axis, and means for feathering the blade comprising a 40 laterally-projecting pin connected thereto, a pair of abutments located at the extremities of movement of the oar and adapted to arrest said pin and thereby impart a partial turning movement to the blade, and a spring 45 connected at one end to said pin and at its other end to a relatively fixed portion of the oar and arranged to complete said turning movement in either direction.

4. An oar comprising a blade and a handle 50 pivotally supported for forward and backward movements, said blade being also

mounted to turn on a longitudinal axis, and means for feathering the blade comprising a laterally-projecting pin connected thereto, a pair of abutments located at the extremities of movement of the oar and adapted to 55 arrest said pin and thereby impart a partial turning movement to the blade, said abutments being adjustable toward and from each other, and a spring connected at one end to 60 said pin and at its other end to a relatively fixed portion of the oar and arranged to complete said turning movement in either direction.

5. The combination with an oar and an oscillating support on which the same is pivotally mounted for forward and backward movement, of a track mounted to turn about a horizontal axis and forming a support for the oar during its forward and backward 70 movements, and spring-actuated stops carried by said track adjacent to the extremities of movement of said oar and serving as buffers therefor.

6. The combination with an oar of a support 75 on which the same is pivotally mounted, a base plate adapted to be secured to the gunwale of a boat and provided with lugs to which said support is pivoted, stirrup-shaped pieces connected to said base plate at their 80 upper ends and adapted to be secured to the inner and outer sides of the boat, and means connected at one end to the base plate for limiting the dip of the blade of the oar.

7. The combination with a base plate of 85 an oscillating support and an oar pivotally secured thereto, said support being provided with a longitudinally-extending pivot pin, and the base plate being provided with notches to receive the end portions of said 90 pin and with spring-actuated catches adapted to pass over the respective ends of the pin and thereby detachably confine the latter in said notches.

In testimony whereof I have signed my 95 name to this specification in the presence of two subscribing witnesses.

HIPPOLYTE CHAUSSINAND.

Witnesses:

HENRY A. BERTIN,
HERNANDO DE SOTO.