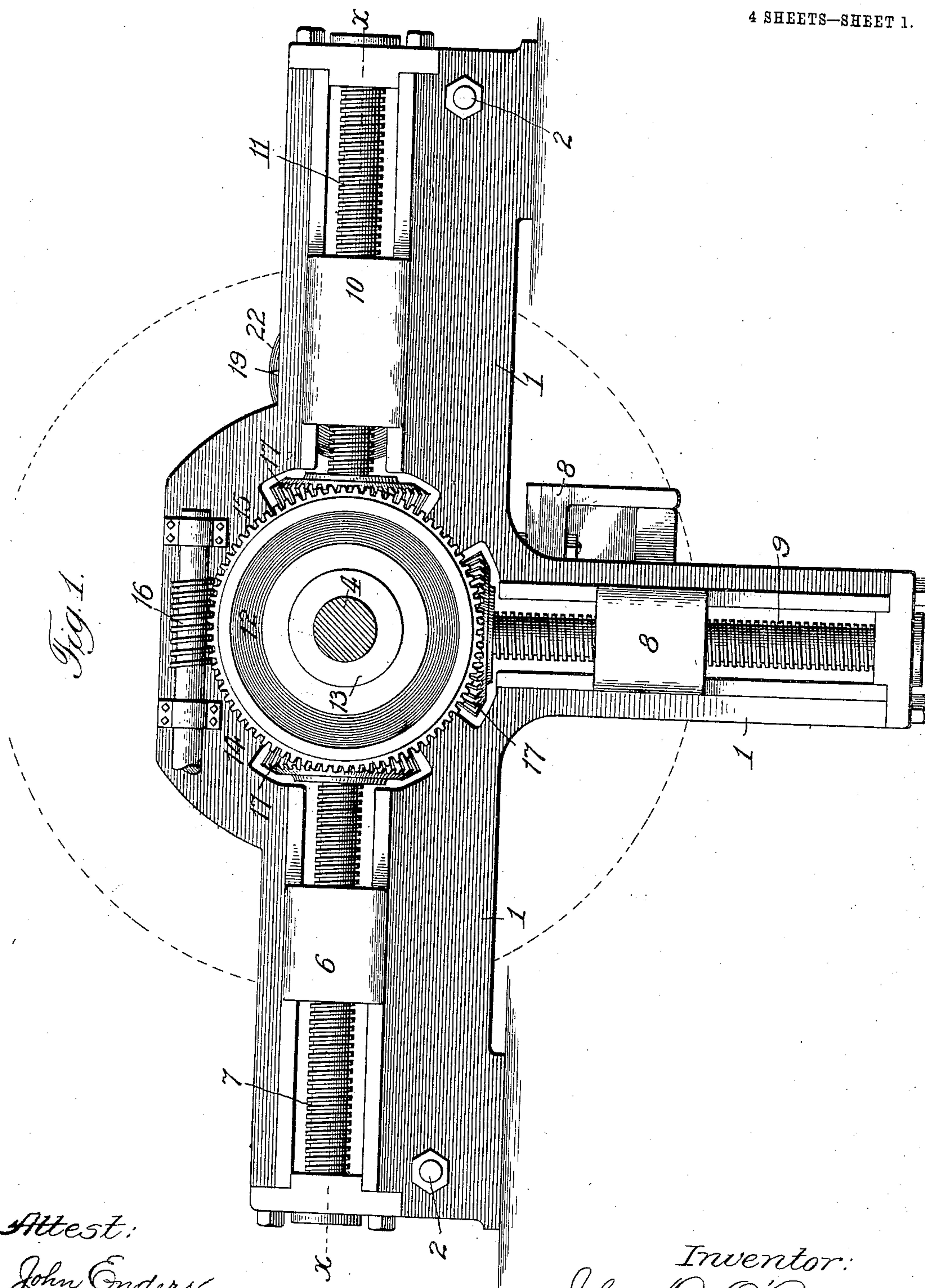


No. 835,633.

PATENTED NOV. 13, 1906.

J. D. O'BRIEN.  
SHINGLE MACHINE.  
APPLICATION FILED AUG. 16, 1906.

4 SHEETS—SHEET 1.



Attest:

John Enders.

M. H. Holmes.

Inventor:

John D. O'Brien,

by Robert Burns

Attorney

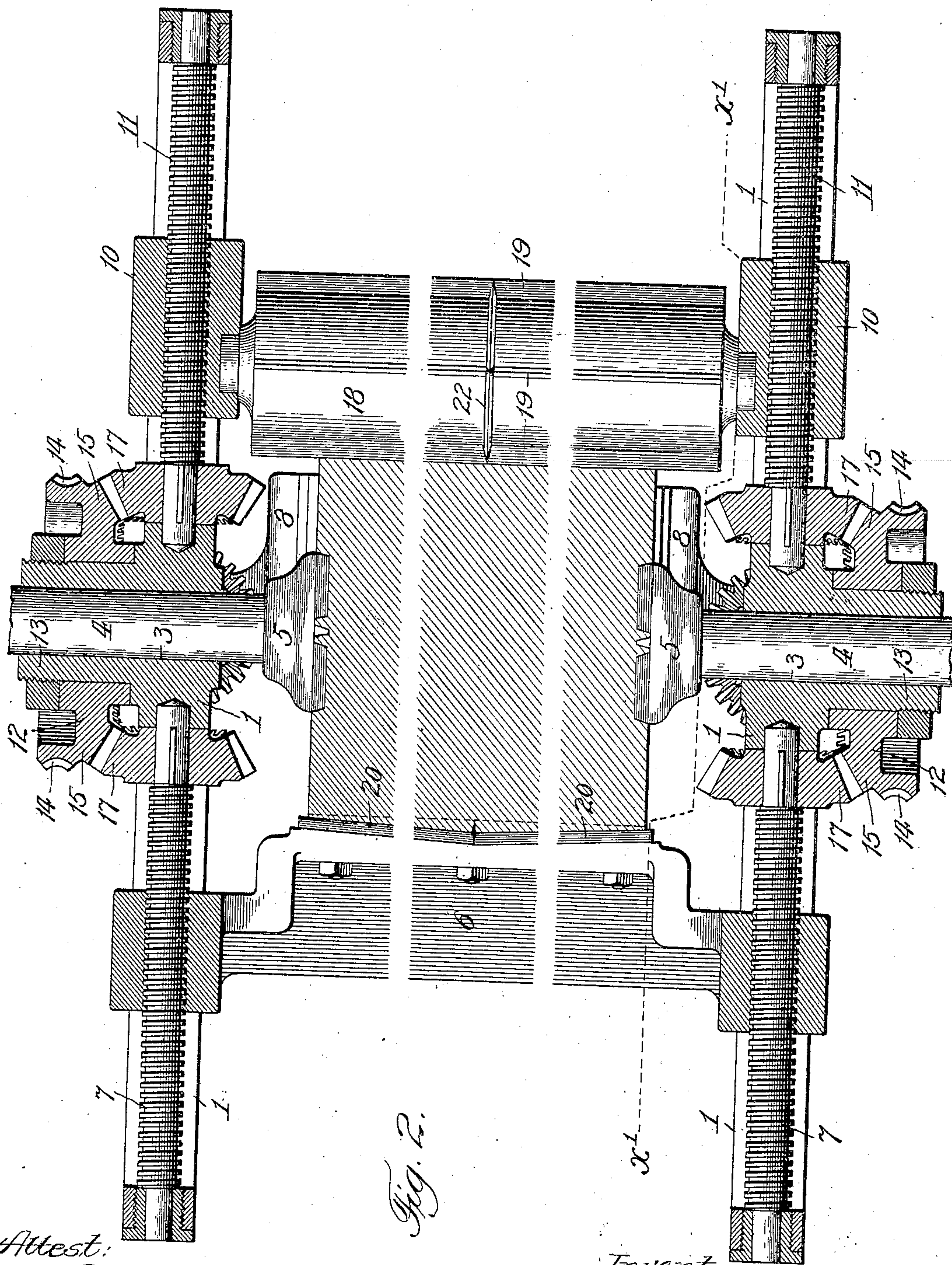


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4 SHEETS—SHEET 2.



Attest:  
John Enders.  
M. H. Holmes.

Inventor:  
John D. O'Brien,  
by Robert Burns  
Attorney

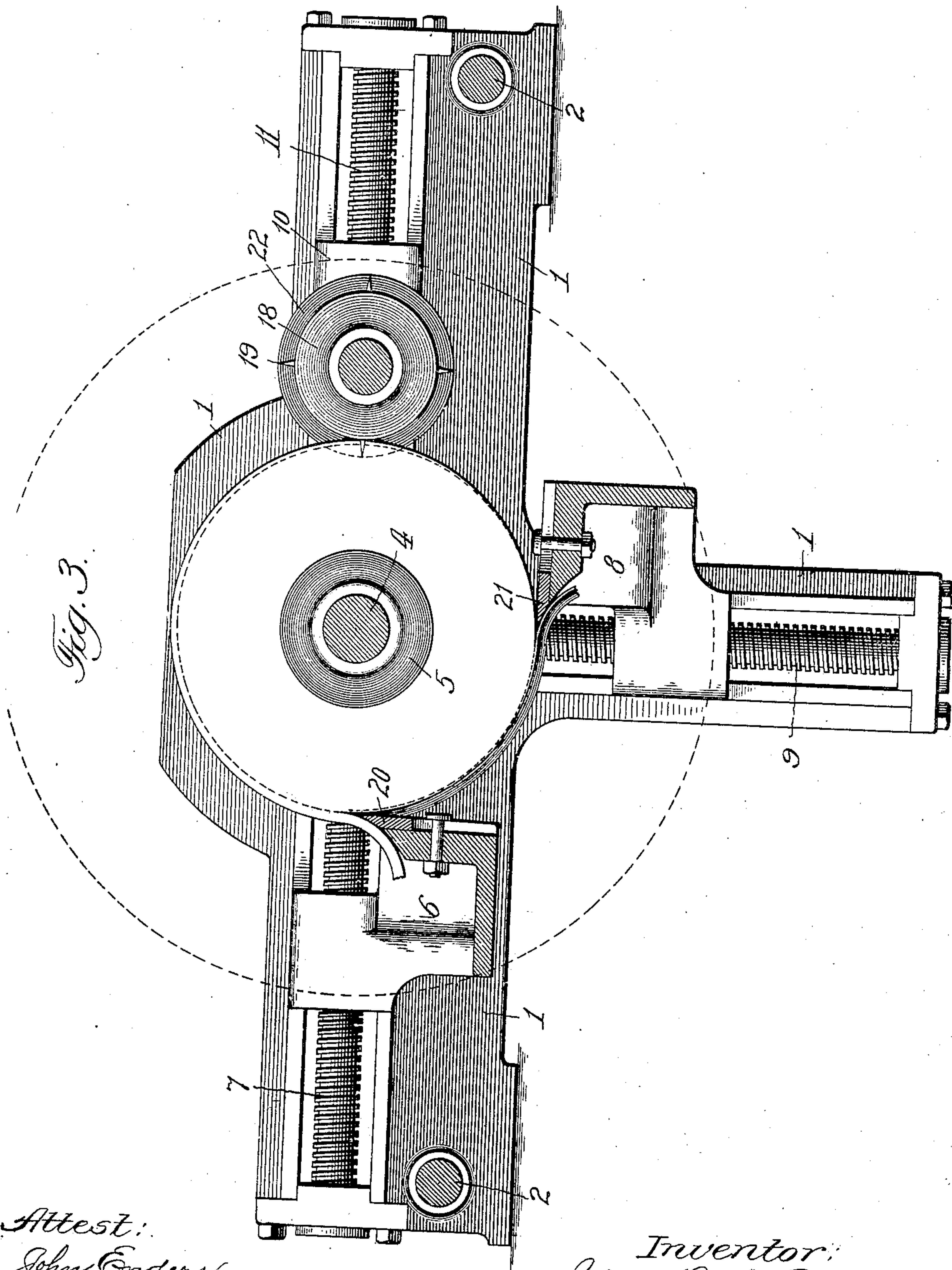


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4 SHEETS—SHEET 3.



Attest:  
John Enders.

M. H. Holmes

Inventor:  
John D. O'Brien,  
by Robert Burns  
Attorney.

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4 SHEETS—SHEET 4.

Fig. 5.

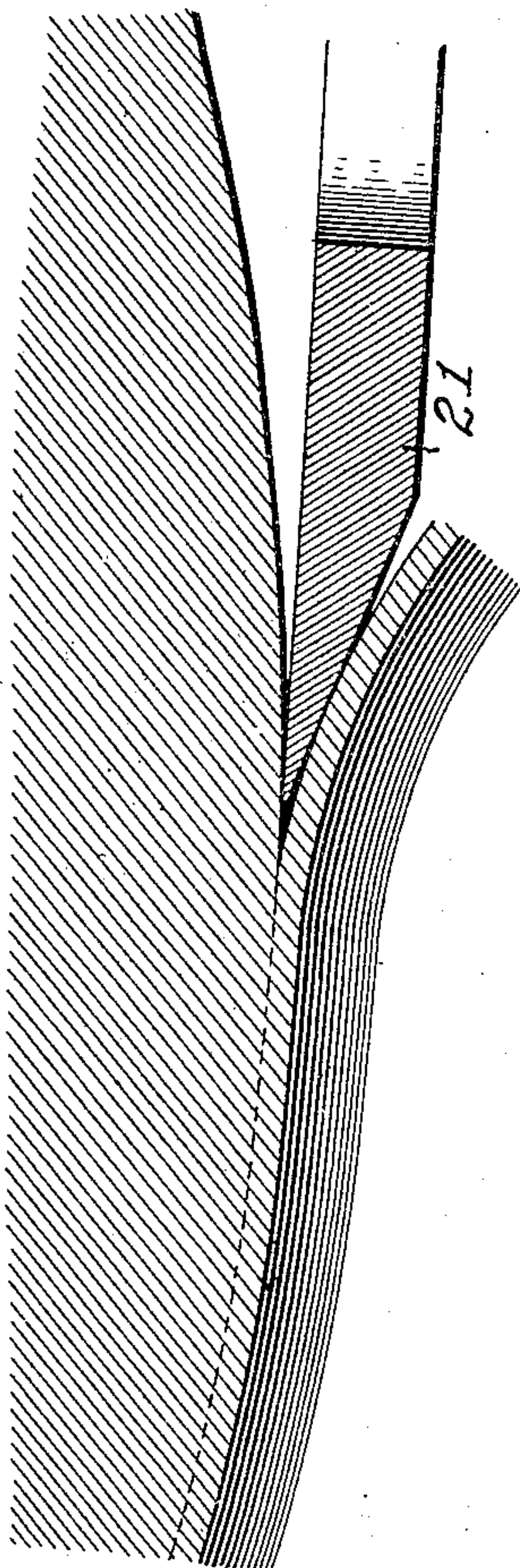
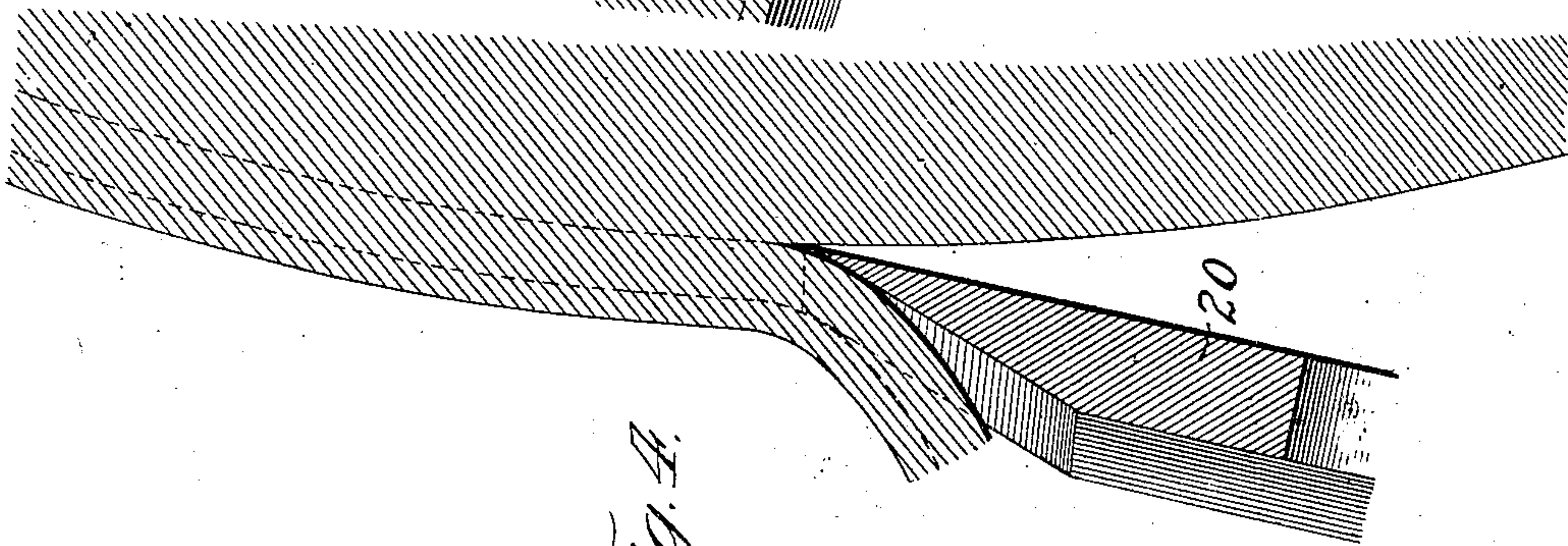


Fig. 4.



Attest:

John Enders,

M. H. Holmes

Inventor:

John D. O'Brien,  
by Robert Burns  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN D. O'BRIEN, OF ST. LOUIS, MISSOURI.

## SHINGLE-MACHINE.

No. 835,633.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed August 16, 1905. Serial No. 274,398.

*To all whom it may concern:*

Be it known that I, JOHN D. O'BRIEN, a citizen of the United States of America, residing in the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Shingle-Machines, of which the following is a specification.

This invention relates to a machine for making wood shingles, and has for its object to provide a simple and efficient structural formation and combination of parts whereby shingles having the usual taper are sliced in a continuous manner from a revolving log of wood, all as will hereinafter more fully appear, and be more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a shingle-machine constructed in accordance with the present invention. Fig. 2 is a horizontal section of the same on line  $x x$ , Fig. 1. Fig. 3 is a longitudinal section of the same on line  $x' x'$ , Fig. 2. Fig. 4 is an enlarged detail sectional elevation illustrative of the cutting action of the advance slicing-knife of the machine. Fig. 5 is a similar view of the secondary slicing-knife.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 designates the counterpart side members of the main frame, arranged in parallel relation at the required distance apart and firmly connected together by transverse tie-bolts 2 or other usual connecting means to constitute the supporting and guiding means for the different parts and mechanisms of the machine.

3 designates alined bearings arranged centrally in the side members 2 for the arbors 4 of the opposed pair of holding chucks or heads 5, between which the log of wood is held so as to receive therefrom positive rotation in the operation of the machine. Said arbors and holding-chucks are similar in arrangement and functions to the live centers or log-holders of an ordinary rotary veneer-slicing machine, with the usual provisions for effecting a longitudinal adjustment to and from each other in the operations of engaging and releasing the log and with positive provisions for effecting simultaneous and uniform rotation of both arbors. Such provisions, however, form no part of the pres-

ent improvement, and therefore are not illustrated in the accompanying drawings.

6 is a sliding carriage or knife-block moving in slideways formed therefor in the side members 1 and adapted to receive positive rectilinear movement by means of the pair of side screws 7, journaled in said side members.

8 is a companion sliding carriage or knife block moving in slideways formed in the side members 1 and receiving positive rectilinear movement by means of a pair of side screws 9, journaled in the said side members.

10 designates sliding carriages or blocks for the scoring or cutting roll hereinafter described. Said carriages also have movement in slideways formed therefor in the side frames 1 and receive positive rectilinear movement from the pair of side screws 11, journaled in said side members.

In the present construction the series of carriages 6, 8, and 10 have movement on lines that are radial to the center of rotation of the log and so that the cutting edges of the slicing-knives hereinafter described will act at the same angle with relation to the periphery of the log down to the smallest core which can be left, and the feeding-screws are so formed and driven as to feed the carriages toward or away from said center of rotation at a uniform speed, so that the series of knives carried by said carriages will have simultaneous action on the log during a continued operation of the machine. With a view to such uniform and simultaneous operation of the two series of feed-screws one part of the present improvement comprises a driving mechanism for the series of screws as follows:

12 designates a pair of counterpart wheels journaled on fixed hubs 13 on the respective side members 1 of the main frame and in concentric relation to the axis of rotation of the arbors and chucks 4 and 5, before described. Each of said wheels is provided with a toothed worm-rim 14 and bevel toothed rim 15, as shown in Figs. 1 and 2.

16 is a screw or worm receiving motion from the power source in any usual manner and having driving engagement with the toothed worm-rim 14, above described.

17 designates bevel-gears secured to the respective inner ends of each series of feed-



screws 7, 9, and 11 and adapted for operative engagement with the bevel-toothed rim 15 above described and so that the wheel 12 will constitute a master driving-wheel for imparting rotation to the series of gears 17 in a uniform and simultaneous manner.

With the described arrangement of gearing the transverse shafts, &c., heretofore employed at the front and rear of the machine are avoided and a free and unimpeded access is afforded the operator to the work.

18 is a roll journaled in the carriages 10 before described and provided on its periphery with knives 19, adapted to form longitudinal scores in the periphery of the log at distances apart equal to the widths of the shingles which are to be sliced from such logs by the slicing-knives hereinafter described.

20 is the advance slicing-knife, secured to the sliding carriage or knife block 6 in the usual transverse direction of the machine.

21 is a secondary slicing-knife secured to the sliding carriage or knife block 8 in a similar transverse direction of the machine.

The said advance and secondary slicing-knives are adapted to slice off two layers from the periphery of the log at each revolution of the same, and to such end the cutting edge of the secondary knife is set in past the cutting edge of the advance knife a distance equal to one layer of the material, such set in being in a direction toward the center of rotation of the log.

In the present machine a log will be used having a length equal to the length of the shingles, and a material part of the present invention consists in the angular arrangement of the advance slicing-knife 20, in opposite directions from the middle of the machine and in inclined directions to the axis of the log, as illustrated in Fig. 2, and in connection with such special arrangement of the slicing-knife 20 the roll 18 aforesaid will be provided with a central circular cutter 22 for forming a score or cut between the adjacent butt-ends of the compound shingle layer, which is subsequently removed by the slicing-knives aforesaid.

The cutting edge of the secondary slicing-knife 21 is arranged in parallel relation to the aforesaid axis of rotation of the log and is adapted to make a straight cut from the log and remove a layer having an outer surface possessing a taper formed by the angularly-arranged advance slicing-knife 20.

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

1. In a machine for slicing shingles from a revolving log, the combination of a pair of live centers adapted to hold and revolve the log, a pair of slicing-knives adapted to remove separate slices from the periphery of the log, the cutting edge of one of said knives

having an inclined arrangement extending in opposite directions from the middle of the machine and having an opposite angular relation to the axis of rotation of the log, a roll provided with longitudinal knives and a central circular knife for scoring the log longitudinally and circularly into shingle-blanks of the required length and width, and means for imparting uniform movement to the knives and roll toward the axis of rotation of the log.

2. In a machine for slicing shingles from a revolving log, the combination of a pair of live centers adapted to hold and revolve the log, a pair of slicing-knives adapted to remove separate slices from the periphery of the log, the cutting edge of one of said knives having an inclined arrangement extending in opposite directions from the middle of the machine and having an opposite angular relation to the axis of rotation of the log, and the cutting edge of the other knife having a parallel relation to said axis, a roll provided with longitudinal and a central circular knife for scoring the log longitudinally and circularly into shingle-blanks of the required length and width, and means for imparting uniform movement to the knives and roll toward the axis of rotation of the log.

3. In a machine for slicing shingles from a revolving log, the combination of a pair of live centers adapted to hold and revolve the log, a pair of slicing-knives adapted to remove separate slices from the periphery of the log, the cutting edge of one of said knives having an inclined arrangement extending in opposite directions from the middle of the machine and having an opposite angular relation to the axis of rotation of the log, a roll provided with longitudinal knives and a central circular knife for scoring the log longitudinally and circularly into shingle-blanks of the required length and width, and means for imparting uniform movement to the knives and roll toward the axis of rotation of the log, the same comprising screw-shafts engaging said carriages, bevel-gears on the inner ends of said screw-shafts, a master-wheel engaging said bevel-gears and having a common axis of rotation with the live centers, and means for rotating said master-wheel.

4. In a machine for slicing shingles from a revolving log, the combination of a pair of live centers adapted to hold and revolve the log, a pair of slicing-knives adapted to remove separate slices from the periphery of the log, the cutting edge of one of said knives having an inclined arrangement extending in opposite directions from the middle of the machine and having an opposite angular relation to the axis of rotation of the log, and the cutting edge of the other knife having a parallel relation to said axis, a roll provided with longitudinal knives and a central circu-



iar knife for scoring the log longitudinally  
and circularly into shingle-blanks of the re-  
quired length and width, and means for im-  
parting uniform movement to the knives and  
5 roll toward the axis of rotation of the log, the  
same comprising screw-shafts engaging said  
carriages, bevel-gears on the inner ends of  
said screw-shafts, a master-wheel engaging  
said bevel-gears and having a common axis

of rotation with the live centers, and means for  
rotating said master-wheel.

Signed at St. Louis, Missouri, this 24th  
day of July, 1905.

JOHN D. O'BRIEN.

Witnesses:

M. J. MURPHY,  
FRED B. MURPHY.