

No. 756,784.

PATENTED APR. 5, 1904.

T. FLANERY & N. WHITEHILL.  
MACHINE FOR TIGHTENING THE HEAD HOOPS UPON BARRELS.

APPLICATION FILED AUG. 31, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

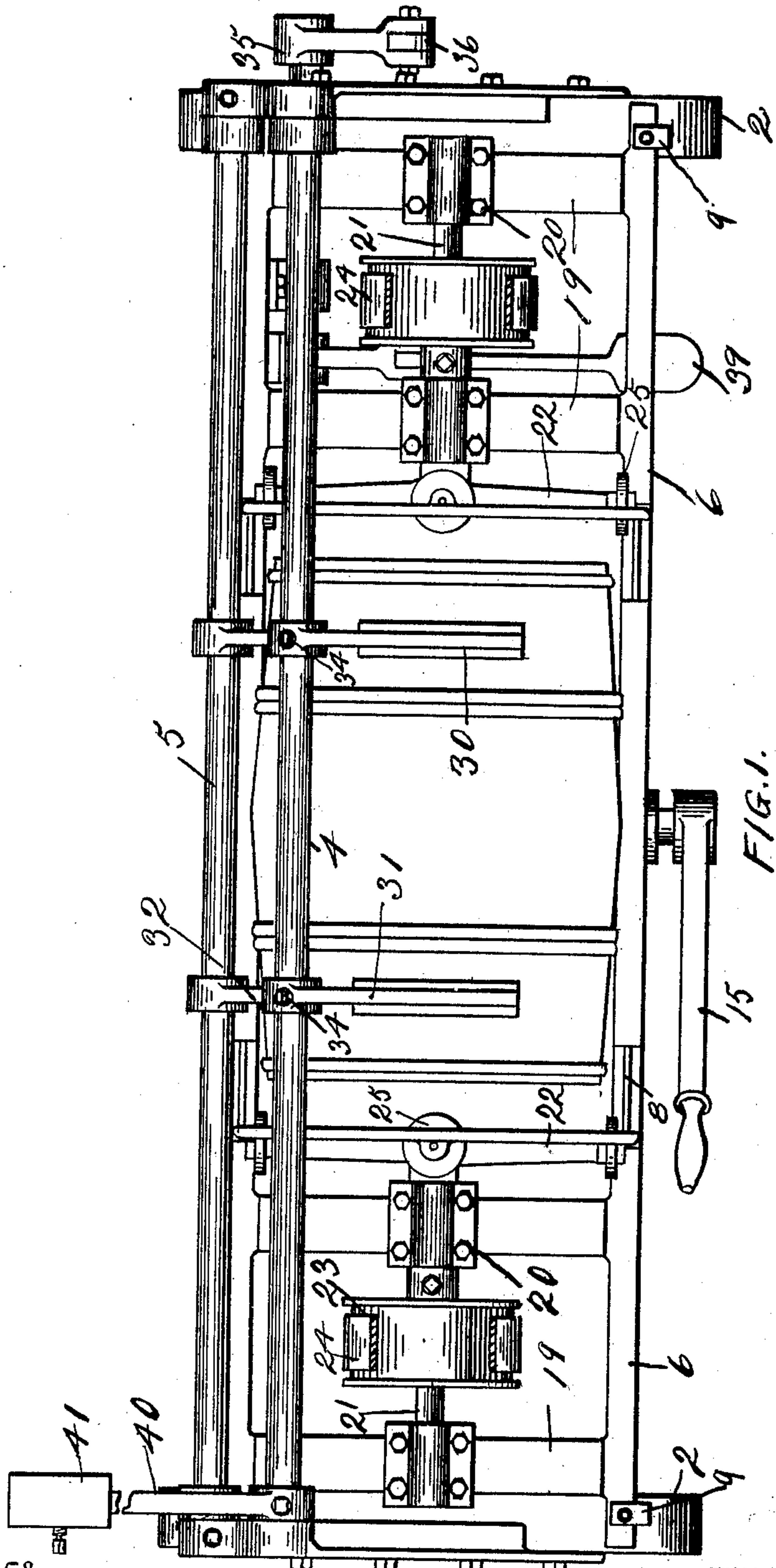


FIG. 1.

WITNESSES  
*Ed Stander*  
*D. V. Guffin*

INVENTORS  
THOMAS FLANERY  
AND  
NELS WHITEHILL,  
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THEIR ATTORNEYS.

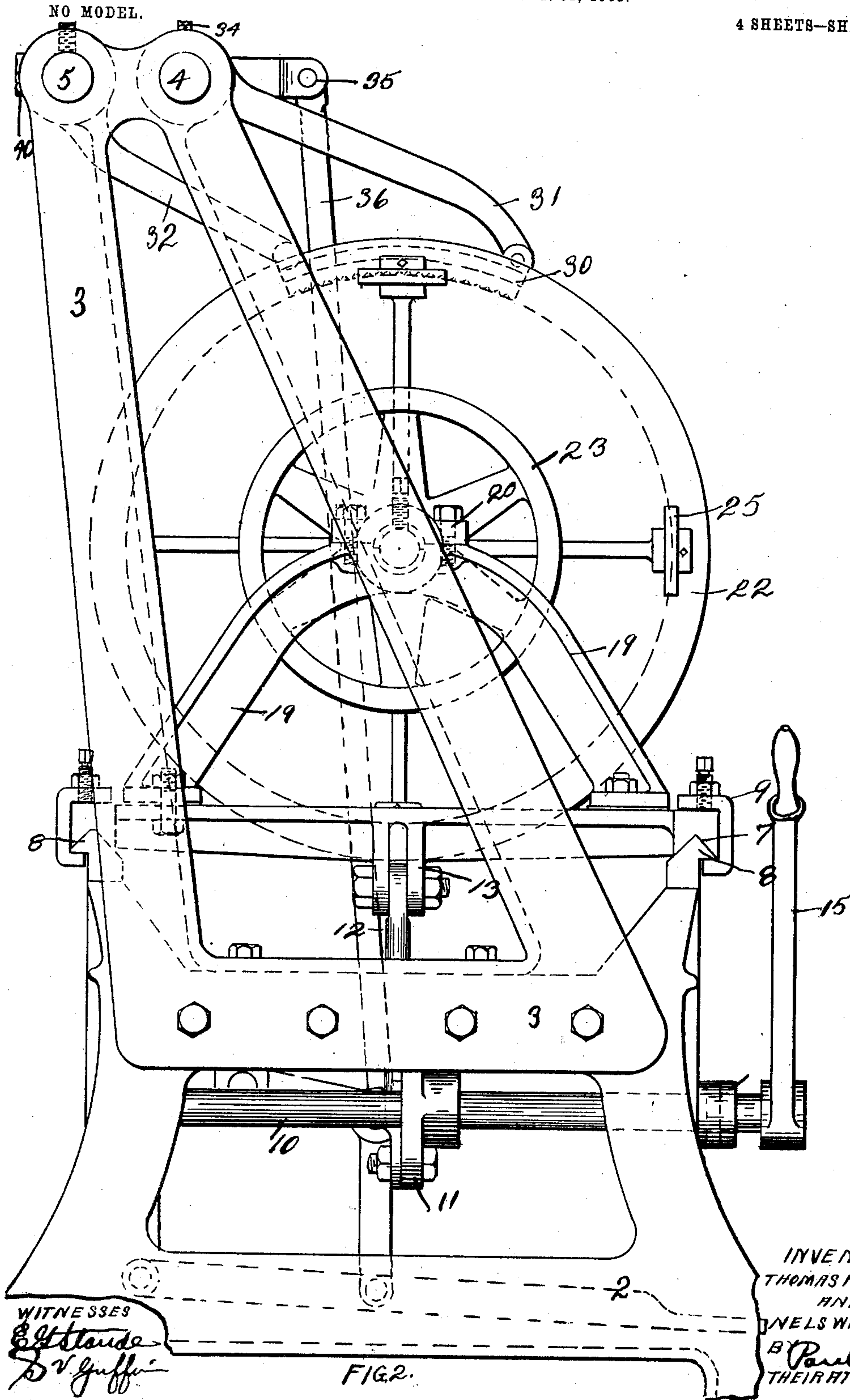
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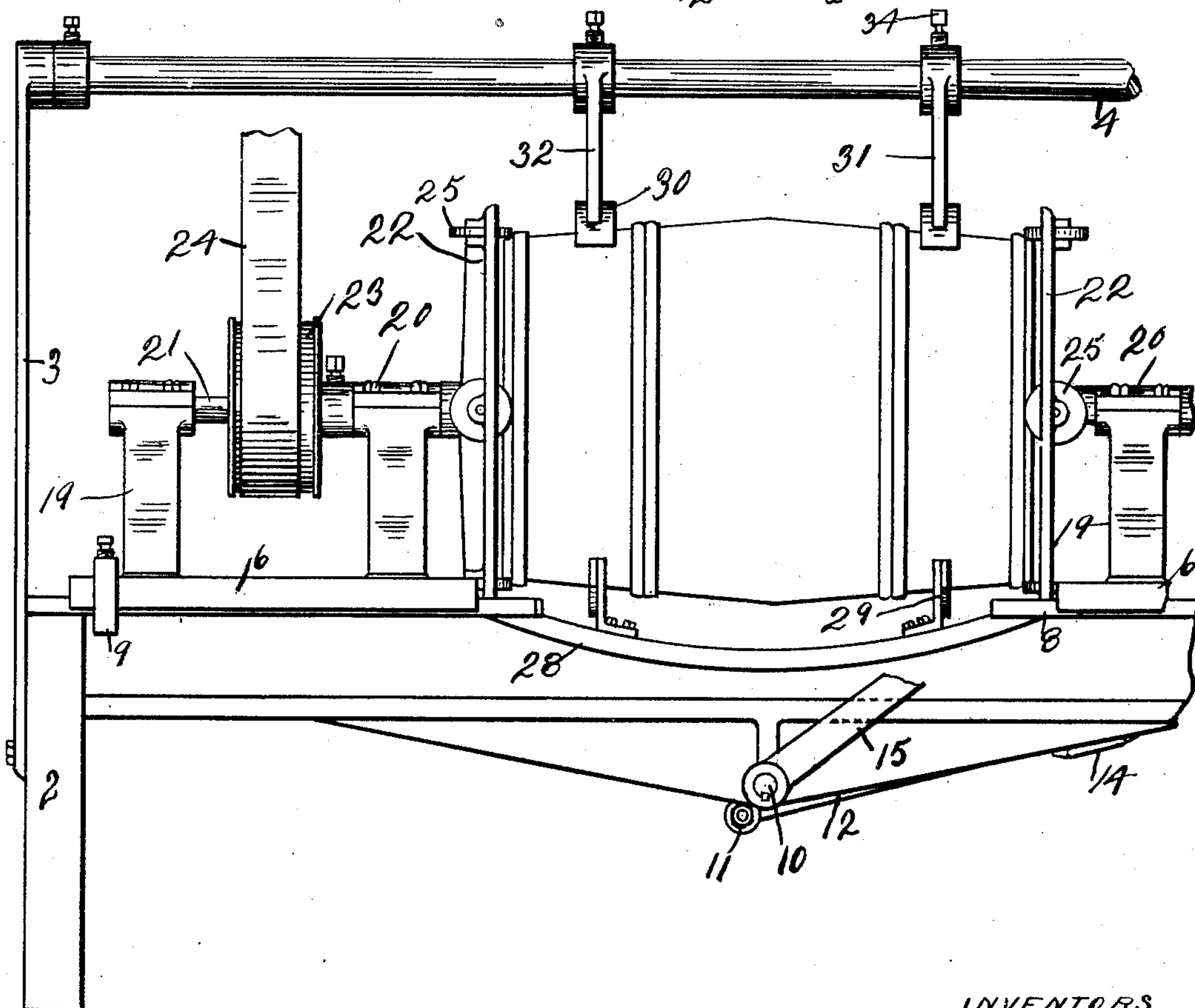
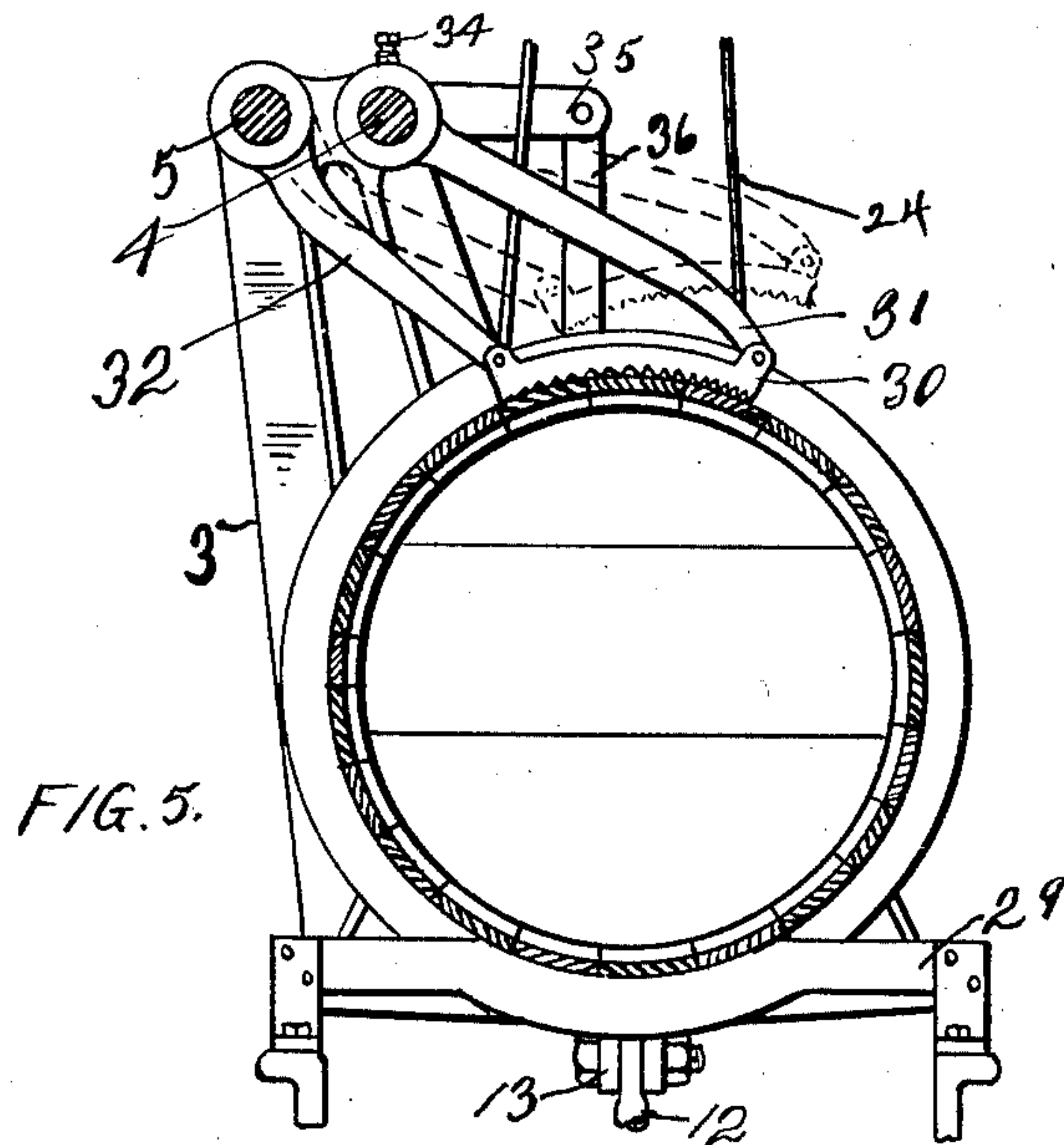
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NO MODEL.

4 SHEETS—SHEET 3.



WITNESSES  
*Glenn*  
*S. V. Griffin*

FIG. 3.

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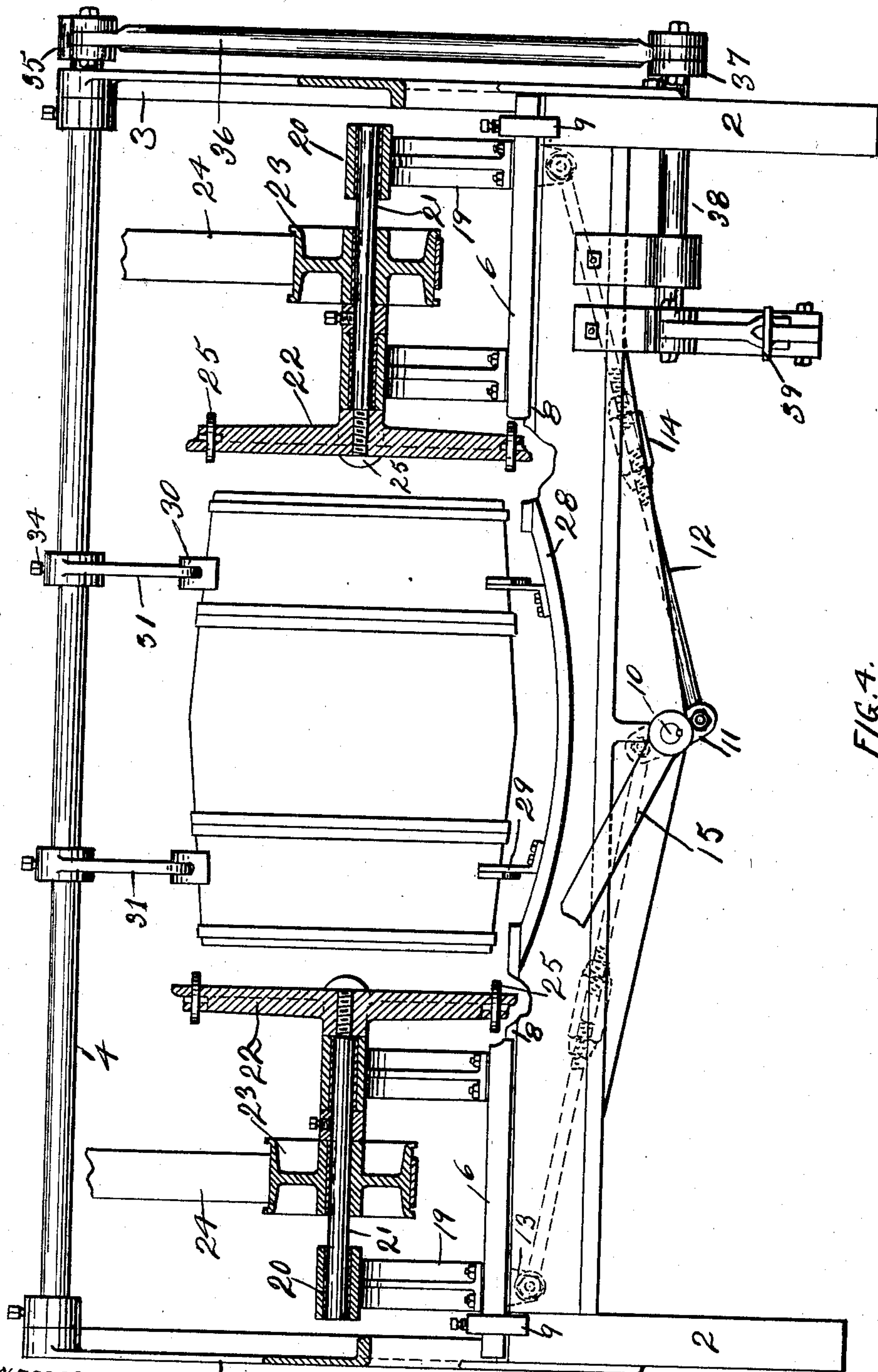


FIG. 4.

WITNESSES

*E. J. Standen*  
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INVENTORS  
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BY *Paul Paul*  
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# UNITED STATES PATENT OFFICE.

THOMAS FLANERY AND NELS WHITEHILL, OF MINNEAPOLIS, MINNESOTA,  
ASSIGNORS TO HENNEPIN COUNTY BARREL CO., OF MINNEAPOLIS,  
MINNESOTA, A CORPORATION.

## MACHINE FOR TIGHTENING THE HEAD-HOOPS UPON BARRELS.

SPECIFICATION forming part of Letters Patent No. 756,784, dated April 5, 1904.

Application filed August 31, 1903. Serial No. 171,352. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS FLANERY and NELS WHITEHILL, of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Machines for Tightening the Head-Hoops upon Barrels, of which the following is a specification.

Our invention relates to barrel-making machinery; and the object of the invention is to provide a machine whereby a single attendant can easily and quickly apply a uniform pressure simultaneously to the outer edges of barrel-head hoops to force them to their proper position upon the ends of the barrel.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as herein-after described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a hoop-tightening machine embodying our invention. Fig. 2 is an end elevation of the same. Fig. 3 is a front view of one end of the machine, showing the barrel in position thereon. Fig. 4 is a longitudinal section; and Fig. 5 is a section of Fig. 4, showing the means for locking the barrels securely in position in the machine during the operation of forcing the head-hoops thereon.

In the drawings, 2 represents a suitable frame having at each end the upwardly-extending brackets 3, whereon the rock-shaft 4 and the fixed shaft or rod 5 are mounted.

6 represents frames or beds having longitudinally-arranged V-shaped grooves 7 to receive correspondingly-shaped rails 8, whereon said frames are slidable, and provided with hooks 9 to engage said rails 8 and prevent the accidental displacement of the frames 6 thereon, though permitting their free horizontal movement. A rock-shaft 10 is mounted in bearings in the frame 2 and provided with cranks 11, that are connected by rods 12 with lugs 13, depending from the under side of said frames, and said rods having turnbuckles

14, by means of which their length can be increased or diminished to adjust the said frames with respect to the cranks 11. The shaft 10 is also provided with a lever 15, by means of which the shaft 10 is rocked to move the frames 6 toward or from each other and the barrel-head. Upon the frame 6 we provide brackets 19, having bearings 20 for shafts 21, whereon heads 22 are mounted. Each shaft is also provided with a pulley 23, connected by a belt 24 with a suitable source of power. The heads 22 are provided near their peripheries with a series of sheaves or pressure-wheels 25, there being preferably four in each head, and these sheaves are arranged to revolve in planes substantially at right angles to the plane of the heads and engage the outer edges of the head-hoops and force them toward each other to their proper position on the barrel. The pressure of the wheels on the hoops can of course be easily regulated by means of the lever 15. A curved bed 28 is provided below the barrel, having suitable supports 29, that receive the barrel and center it between the chucks or heads. The barrel instead of revolving, as in our companion application herewith, Serial No. 571,351, remains stationary, the chucks bearing the pressure-sheaves revolving near the barrel-heads.

To hold the barrel firmly in place during the operation of tightening the head-hoops thereon, we prefer to provide curved gripper-plates 30, having toothed or roughened under surfaces to bear on the surface of the barrel and hold the same firmly on the supports 29. These gripper-plates are pivotally connected to arms 31 and 32, the former secured to the shaft 4 by set-screws 34 and the latter arranged to turn freely on the shaft 5. A crank 35 is secured on the shaft 4 at one end and connected by a rod 36 with a crank 37 on a rock-shaft 38. A treadle 39 is connected with the shaft 38 for operating the same to rock the shaft 4 and move the gripper-plates into engagement with the barrel. An arm 40, having an adjustable weight 41, is provided on the shaft 4 for returning the same to its normal position and lifting the gripper-plates to



release the barrel when the operator has released the treadle 39.

The operation of our machine is as follows: The barrel having been arranged upon the supports 29, the attendant, depressing the treadle 39, will rock the shaft 4 and depress the gripper-plates sufficiently to bear upon the barrel and hold the same firmly. The lever 15 is then moved toward the right, and the revolving chucks or heads will be moved toward each other until the sheaves or rollers come in contact with the outer edges of the head-hoops and pressing thereon will force them into their proper position on the barrel. As soon as these hoops have been properly tightened the operator will move the lever 15 toward the left and return the revolving chucks to their normal position, and the gripper-plates being raised by the return movement of the rock-shaft the barrel may be discharged, and the machine is then ready to repeat the operation.

We claim as our invention—

1. The combination, with a suitable frame, of a horizontal barrel-support therein, a rock-shaft located above the level of the barrel placed on said support to allow the barrel to be inserted on one side of the machine and removed on the other, arms secured on said shaft, gripper-plates pivotally supported by said arms and arranged to engage the upper surface of the barrel, means for rocking said shaft, and means for engaging the barrel-head hoops to tighten them on the barrel.

2. The combination, with a suitable frame, of a barrel-support therein, shafts provided near said support one of said shafts being fixed and the other arranged to rock in its bearings, arms loosely mounted on said fixed shaft, and similar arms secured on said rock-shaft, gripper-plates carried by said arms and arranged to engage the surface of a barrel, means for operating said rock-shaft, and means arranged to be moved into engagement with the barrel-head hoops and press and tighten them on the barrel.

3. The combination, with a frame, of a barrel-support, a rock-shaft mounted in said frame, arms loosely mounted on a suitable support, similar arms secured on said rock-shaft, gripper-plates carried by said arms and arranged to engage the surface of a barrel, a treadle mechanism connected with said rock-shaft and means arranged to be moved into engagement with the barrel-head hoops to press them toward each other and tighten them on the barrel.

4. The combination, with a suitable frame, of a horizontal barrel-support therein, a rock-

shaft located a sufficient distance above said support to allow a barrel to be placed thereon from one side of the machine and removed on the other side, means for rocking said shaft, arms secured on said shaft, and gripper-plates having curved faces pivoted on said arms and adapted to engage the upper surface of the barrel.

5. The combination, with a suitable frame, of a barrel-support therein, a rock-shaft, arms mounted thereon, gripper-plates pivotally supported on said arms and arranged to engage the surface of the barrel, means for rocking said shaft, and means for engaging the barrel-head hoops to tighten them on the barrel, substantially as described.

6. The combination, with a suitable frame, of a barrel-support therein, means for gripping the barrel, rails V-shaped in cross-section provided in said frame, sliding frames having grooves to fit said rails, heads carried by said sliding frames, sheaves mounted in said heads and adapted to engage the head-hoops of a barrel, and means for moving said sliding frames toward or from each other.

7. The combination, with a suitable frame, of a barrel-support therein, shafts provided above said support, one of said shafts being fixed and the other arranged to rock in its bearings, arms loosely mounted on said fixed shaft and secured on said rock-shaft, curved gripper-plates having toothed under surfaces pivotally supported on said arms and arranged to engage the surface of a barrel, a treadle connected with said rock-shaft, and means arranged to be moved into engagement with the barrel-head hoops to press them toward each other and tighten them on the barrel, substantially as described.

8. The combination, with a suitable frame provided with a horizontal barrel-support, of a horizontal rock-shaft located a sufficient distance above said support to allow the barrel to be inserted on one side of the machine and removed on the other, gripper-plates carried by said shaft, a treadle mechanism connected with said shaft for rocking the same, sliding heads or chucks having sheaves arranged to engage the head-hoops of the barrel, and a lever mechanism near said treadle for operating said chucks.

In witness whereof we have hereunto set our hands this 18th day of August, 1903.

THOMAS FLANERY.  
NELS WHITEHILL.

In presence of—

RICHARD PAUL,  
S. V. GRIFFIN.