

(No Model.)

2 Sheets—Sheet 1.

T. S. WILKIN.  
BAND SAW MILL.

No. 432,682.

Patented July 22, 1890.

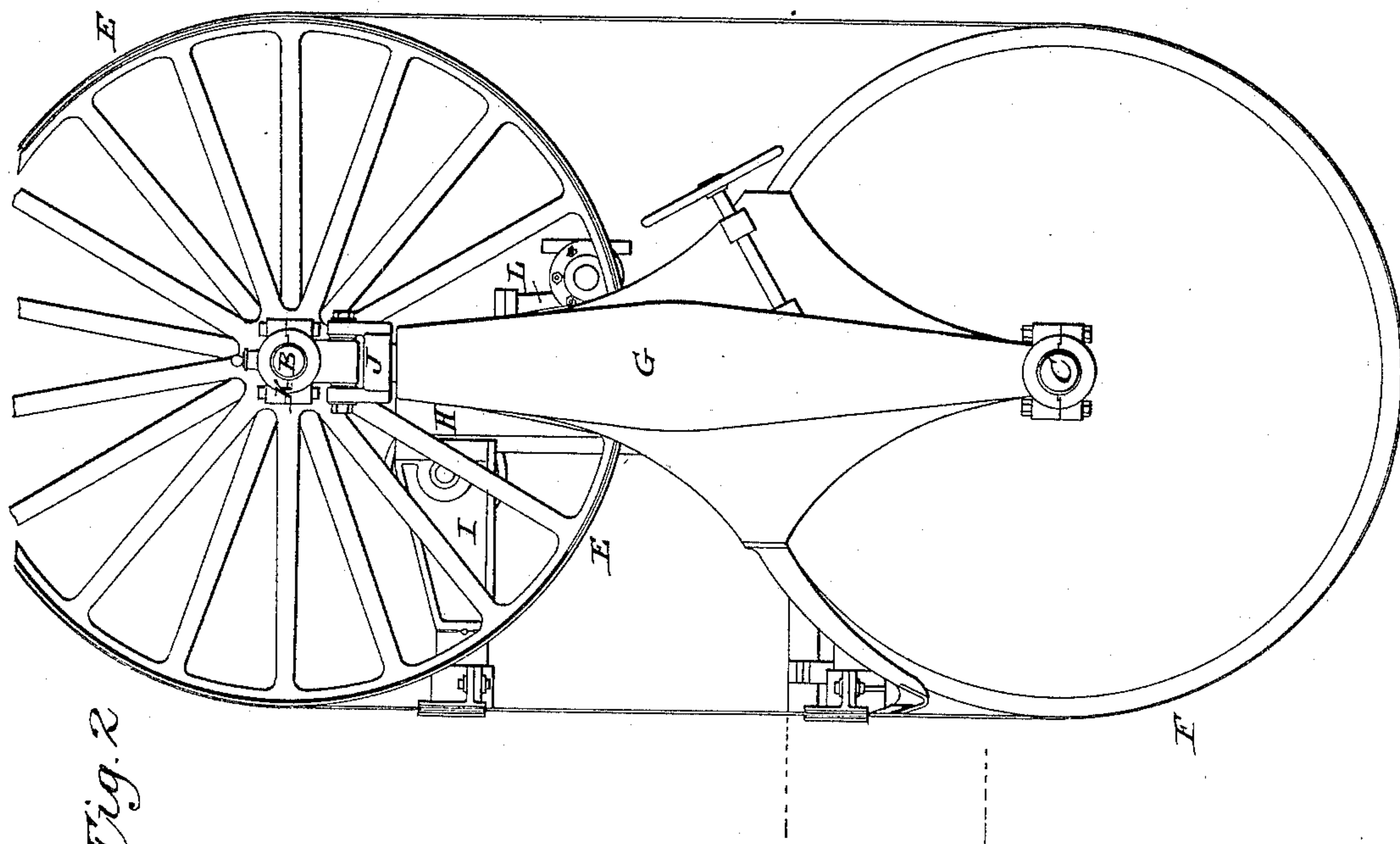


Fig. 2

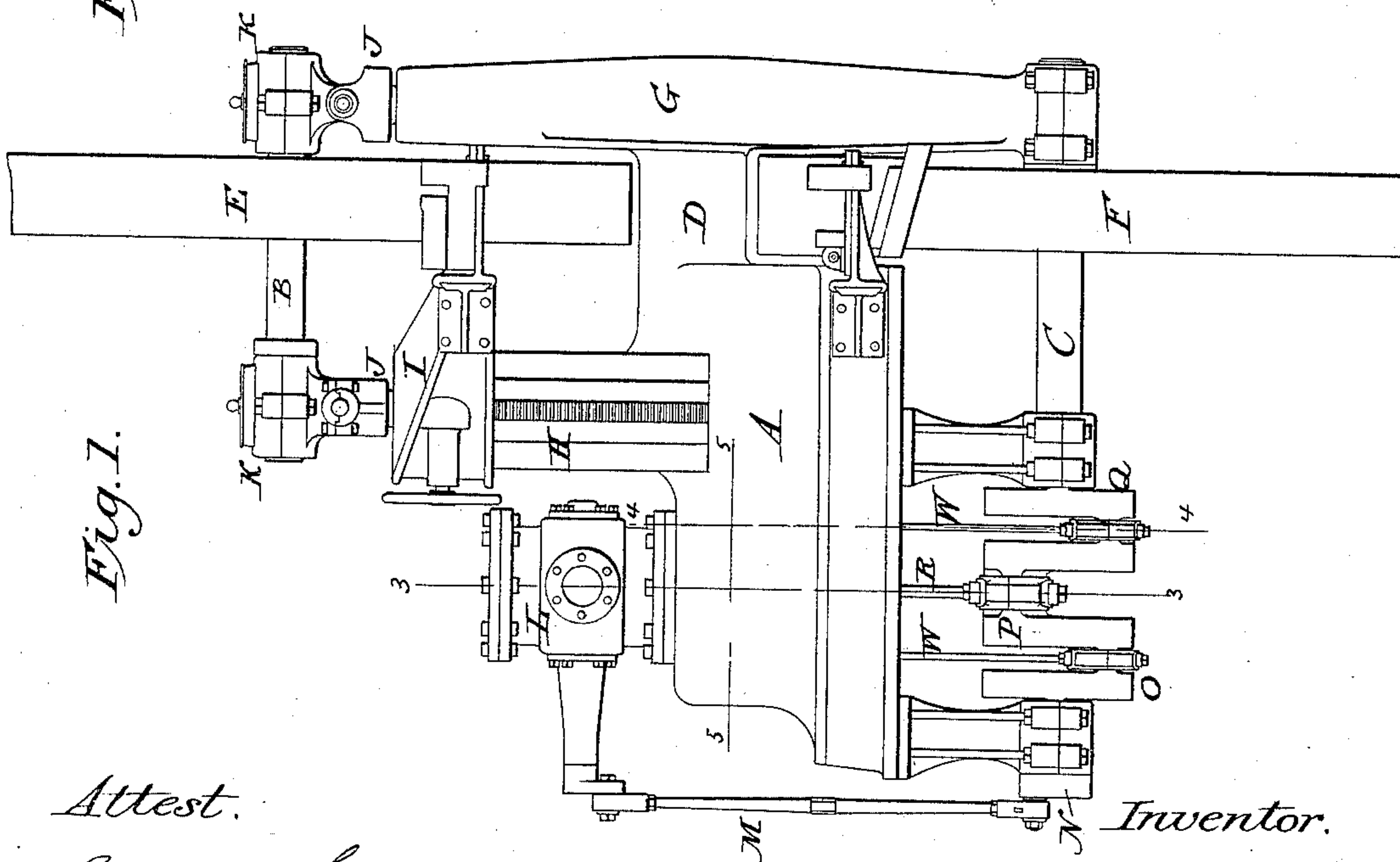


Fig. 1.

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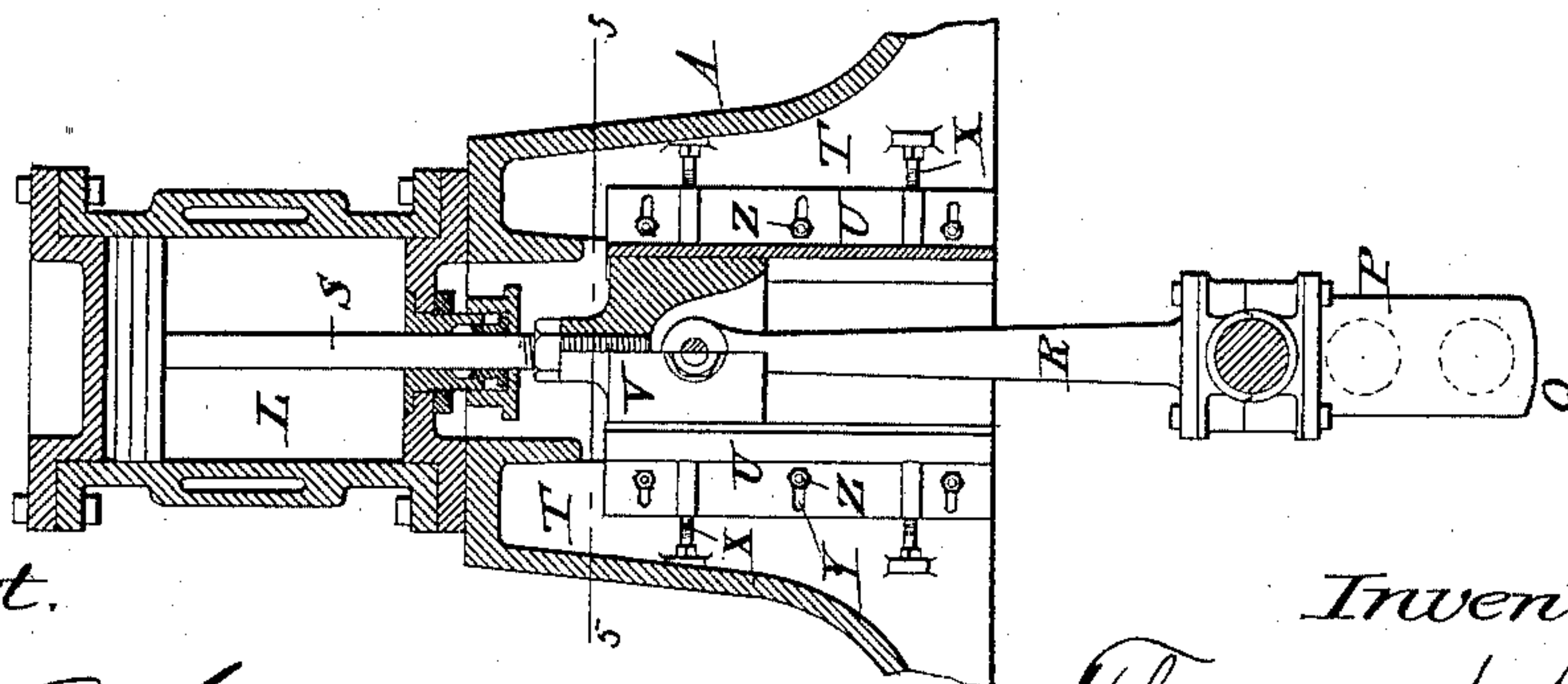
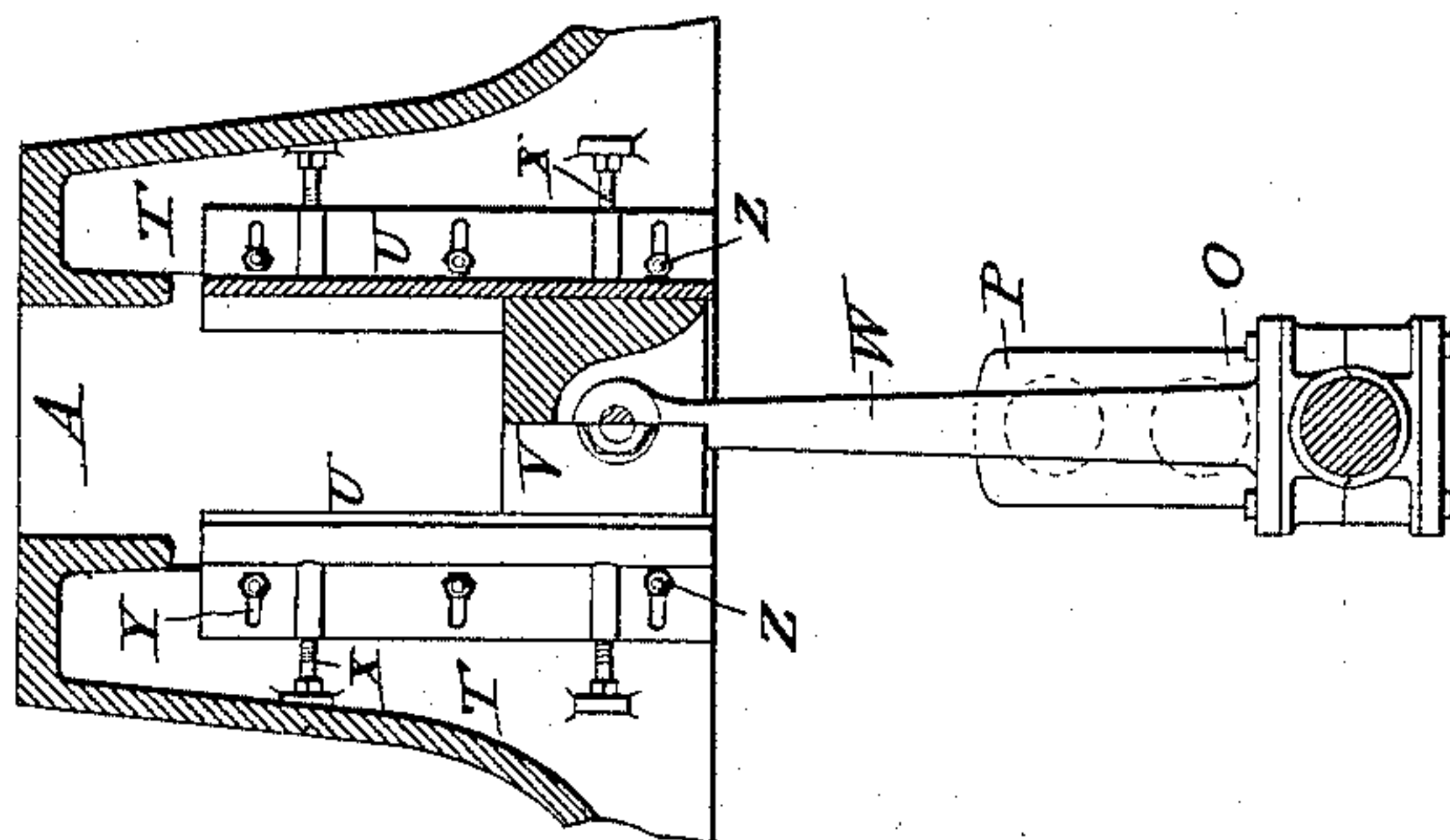
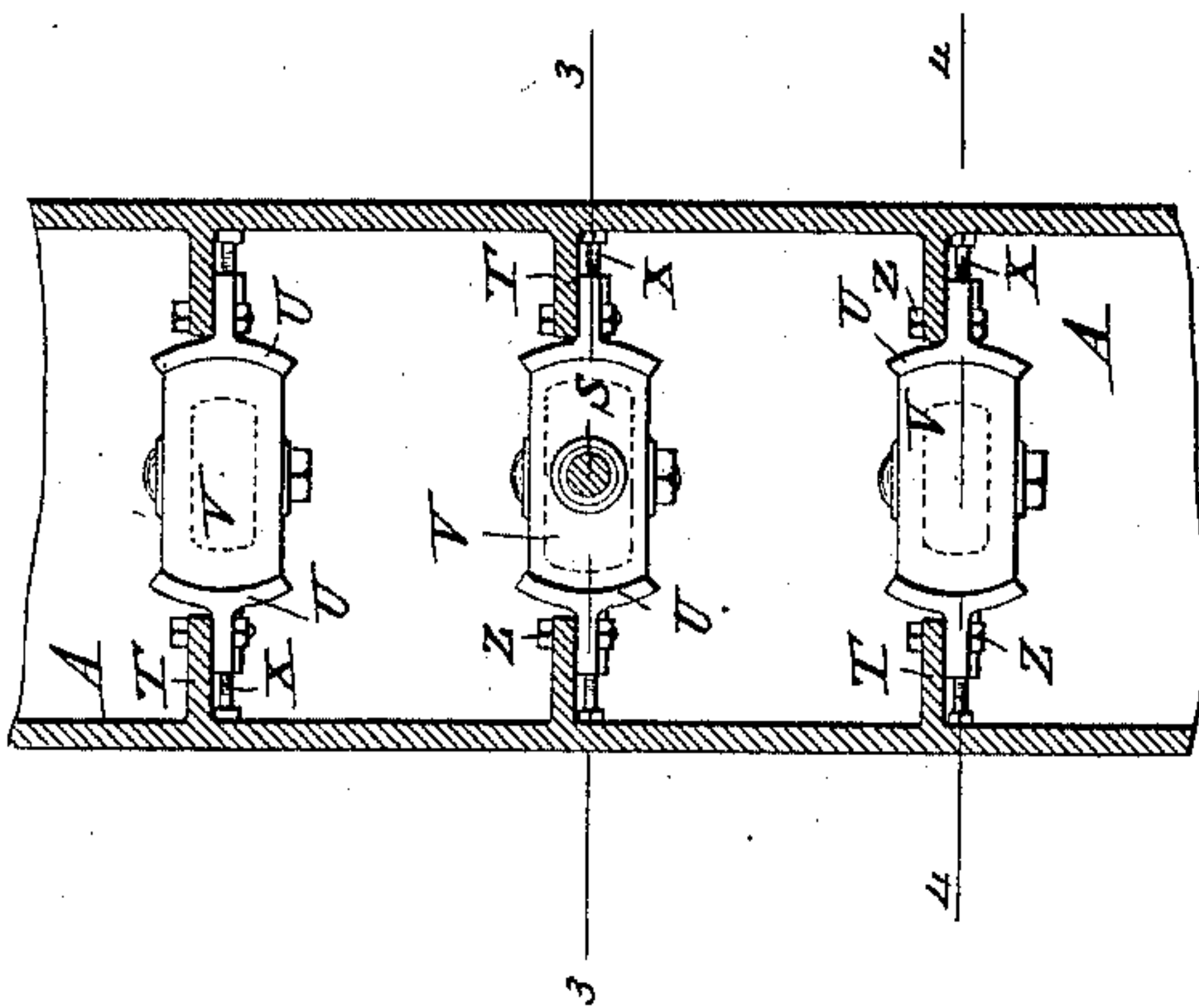
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# UNITED STATES PATENT OFFICE.

THEODORE S. WILKIN, OF MILWAUKEE, WISCONSIN.

## BAND-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 432,682, dated July 22, 1890.

Application filed March 1, 1890. Serial No. 342,247. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE S. WILKIN, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Band-Saw Mills, of which the following is a specification.

My invention relates to band-saw mills, and has for its object the production of a strong, compact, cheap, and easy-running mill that shall occupy a small amount of floor-space; and to this end the invention consists in various features and details, hereinafter set forth and claimed.

In the drawings, Figure 1 is a side elevation of my improved band-saw mill; Fig. 2, a front face view of the same; Fig. 3, a vertical sectional view on the line 3 3 of Fig. 1; Fig. 4, a vertical sectional view on the line 4 4, Fig. 1; and Fig. 5, a horizontal sectional view on the line 5 5 of Fig. 3.

The main frame comprises a body portion A, between the upper and lower shafts B C, a comparatively narrow portion or neck D, which extends outwardly between the saw-carrying wheels E F, and an upright arm G, which extends from the lower shaft nearly to the upper shaft, as will be clearly seen upon reference to Figs. 1 and 2. Behind the wheel E there is also an upright post or standard H, which receives the upper saw-guide arm I and the pedestal J, to which is pivotally secured one of the boxes or bearings K for the upper saw-wheel shaft, the opposite end of the shaft B being supported in a box or bearing K, carried by a pedestal J, which is designed to work through the upper end of the arm G.

Mounted upon the main portion of the frame A is a cylinder L, which is designed to receive a supply of steam, compressed air, or other motive power, said cylinder being provided with an oscillating valve actuated by means of a rod or pitman M, connected with an eccentric or crank N upon the outer end of the lower shaft C, as clearly shown in Fig. 1. The shaft C is also provided with three cranks O, P, and Q, the cranks O and Q being set diametrically opposite to the crank P, as will be readily understood upon reference to Figs. 1, 3, and 4. The crank P is connected by means of a rod or pitman R with the piston-rod S of the steam-cylinder, the upper face of the

main frame being open at the point of attachment of the cylinder to permit the piston-rod to work up and down through the frame, as will be seen upon reference to Fig. 3.

At suitable points on the inner faces of the side walls of the main frame are formed upright ribs or flanges T, to which are bolted curved or grooved plates or guides U, fashioned to receive blocks V. One of the blocks V forms the connection between the pitman R and the piston-rod S, while the remaining blocks V are secured to the upper ends of pitmen W, secured, respectively, to the cranks O and Q. The plates U are made adjustable toward and from each other by means of set-screws X, as clearly shown in Figs. 3, 4, and 5, and are guided in their movements by means of slots Y and bolts Z, passing through said plates and flanges T.

The blocks V, to which I have before referred, and which are illustrated in Figs. 3, 4, and 5, are designed to act as counter-weights and to equalize or counteract the thrust of the piston-rod and cause the lower shaft C to rotate at a uniform rate of speed, the counter-weights actuated by the pitmen W W alternating in their movement with the counter-weight actuated by means of the pitman R.

By placing the cylinder upon the main frame and connecting the piston directly with the shaft C, I obviate the use of belts, which are a constant source of annoyance in saw-mills and necessarily result in a waste of power.

I am aware that it has been proposed to mount the circular saw of a portable saw-mill upon the engine-shaft; that it has been proposed to mount an engine-cylinder upon the main frame of a reciprocating-saw mill and connect the sliding sash with the piston-rod; and, finally, that a counter-balance has been used in connection with a reciprocating sash. To these features, singly or combined, I make no claim herein.

In the use of band-saw mills which have heretofore been driven (I believe exclusively) by belting, a difficulty has presented itself which cannot arise either in a circular or a reciprocating saw mill, and that is, that unless the speed of the saw-carrying wheels be kept uniform, the down-going side of the band-saw will buckle immediately above the log being sawed, and thereby cause a breakage of



the saw and the endangering of the lives of the attendants. To obviate this difficulty, and to overcome other objections which have interfered heretofore with the general use of band-saw mills, I have designed the mill herein described and shown, and as I am the first, so far as I am aware, to mount the engine for driving the band-saw upon the main frame of the mill, the first to connect the saw-carrying-wheel shaft directly to the engine, omitting intermediate connections, and, finally, the first to apply a counter-balance to a band-saw mill, I claim these features and combinations broadly.

15 Having thus described my invention, what I claim is—

1. In a band-saw mill, the combination of the following elements, to wit: a main frame, upper and lower saw-carrying wheels mounted therein, and an engine mounted upon the main frame and having its piston-rod connected to the lower saw-wheel shaft, all substantially as shown.

2. In a band-saw mill, the combination of

the following elements, to wit: a main frame, 25 upper and lower saw-carrying wheels mounted therein, an engine mounted upon the main frame and having its piston-rod connected to the lower shaft, and a counter-weight, all combined and arranged substantially as shown 30 and described.

3. In a band-saw mill, the combination, with the main frame and the upper and lower saw-carrying wheels and their shafts, of the cranks O, Q, and P, pitmen W W, connected 35 with the cranks O Q and provided at their upper ends each with a counter-weight, a steam-cylinder L, a piston working therein and provided with a stem S, a block V, secured to said stem, and a pitman R, connecting the 40 block with the crank R, all substantially as shown.

In witness whereof I hereunto set my hand in the presence of two witnesses.

THEODORE S. WILKIN.

Witnesses:

JOHN W. MORRIS,

A. H. SOUTHWELL.