

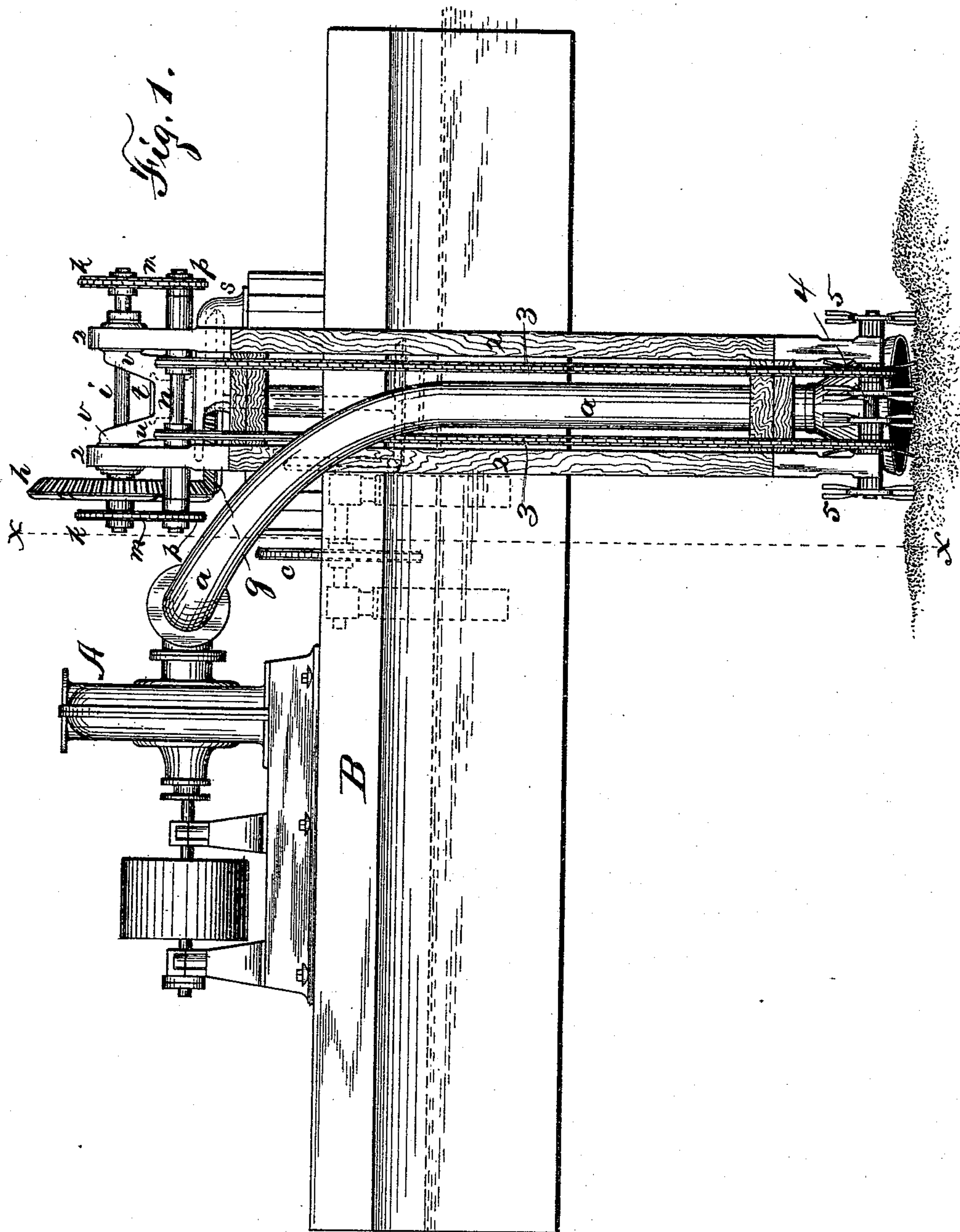
(No Model.)

5 Sheets—Sheet 1.

J. D. McRAE.  
DREDGING PUMP.

No. 479,765.

Patented July 26, 1892.



WITNESSES:

*H. A. Cachant*  
*C. B. Hinne*

INVENTOR,

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his ATTORNEY

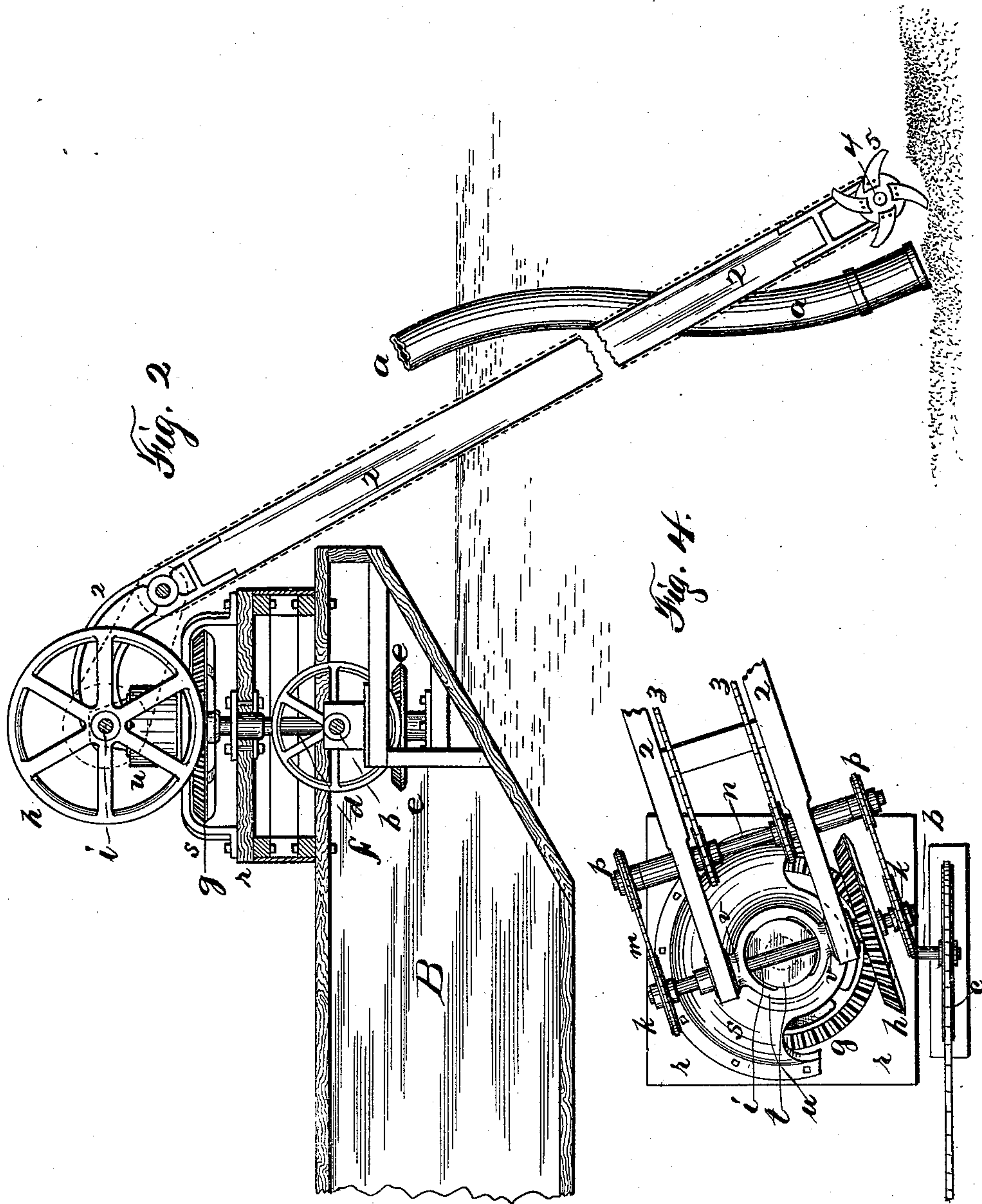
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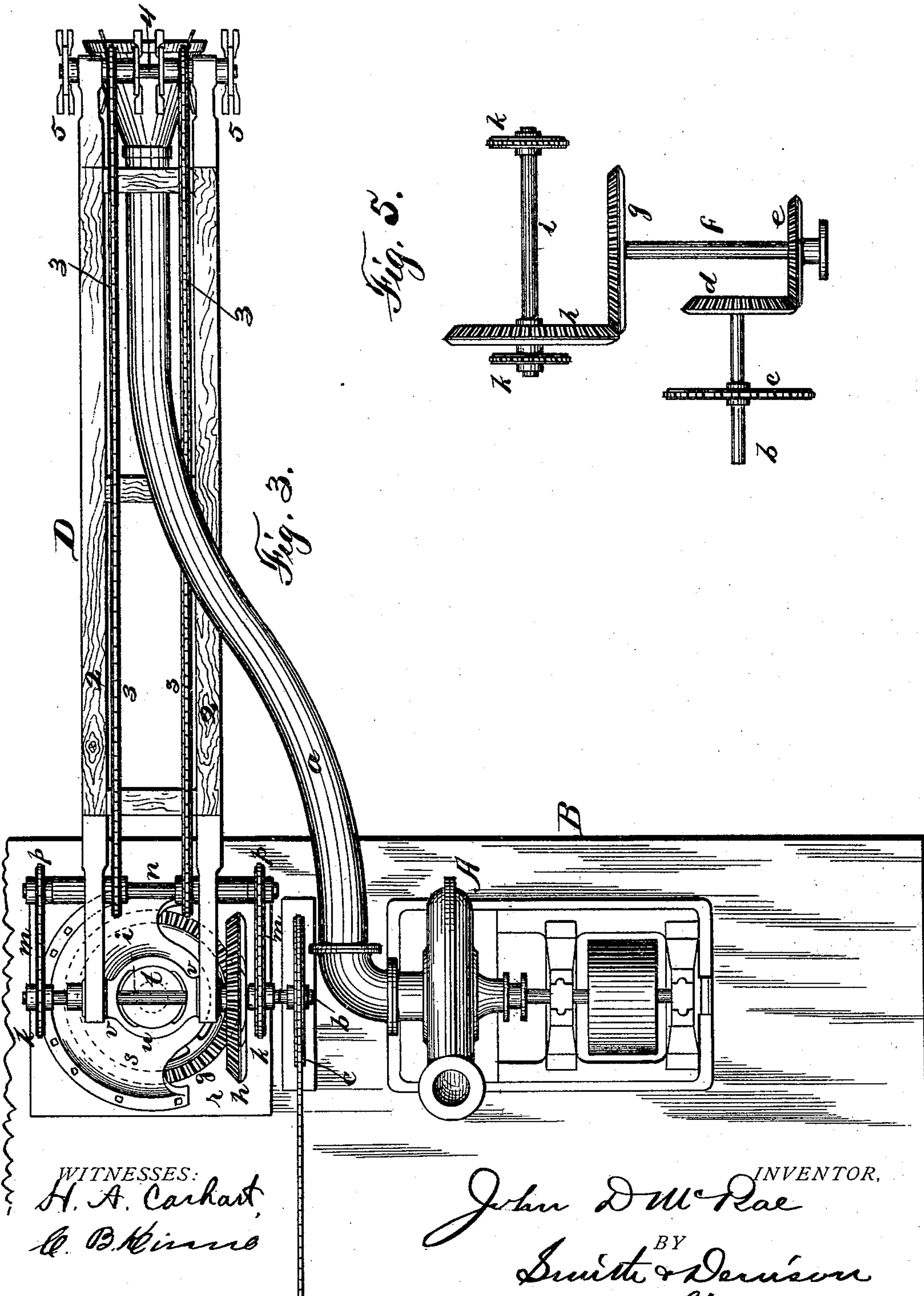
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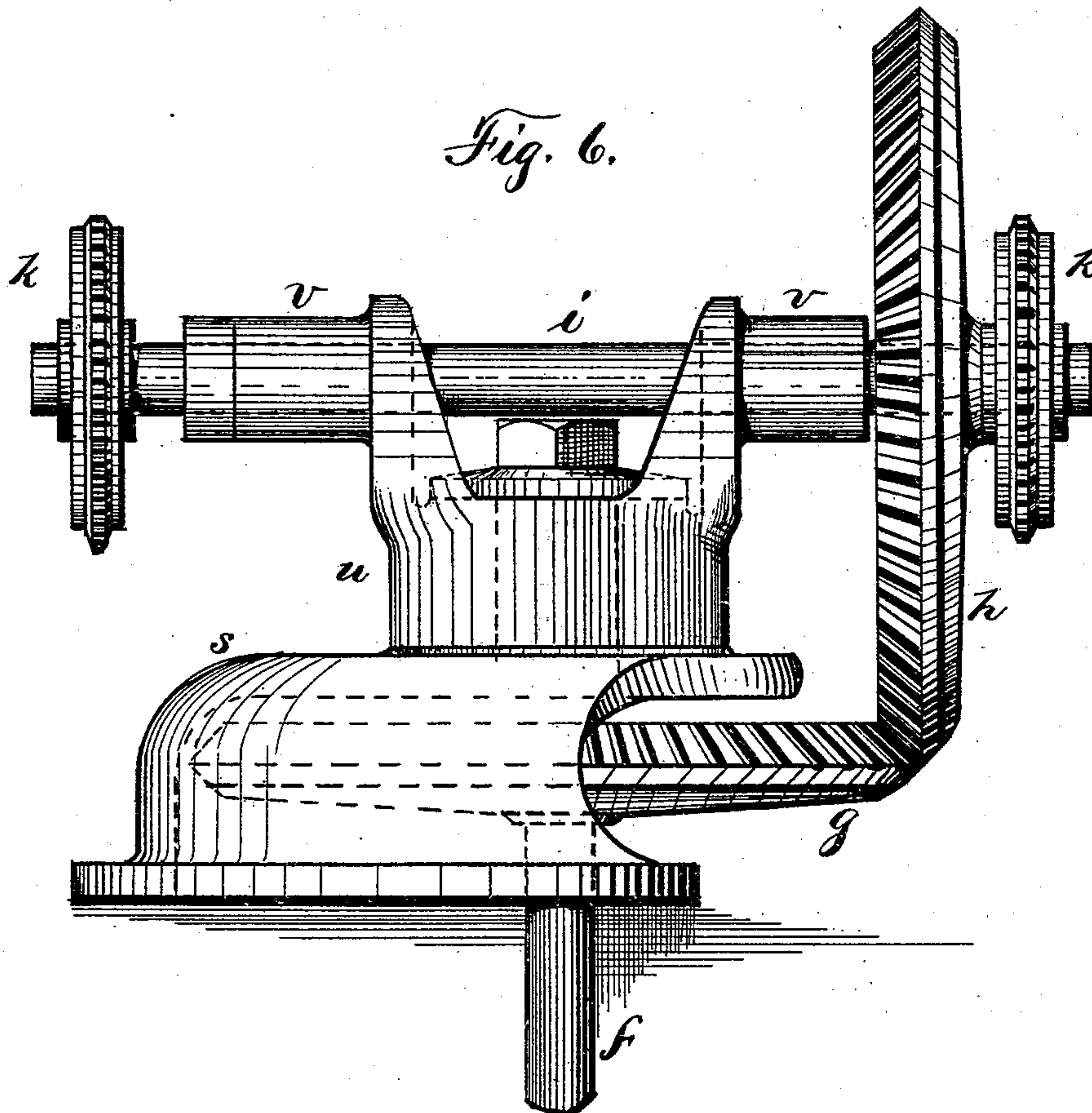
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J. D. McRAE.  
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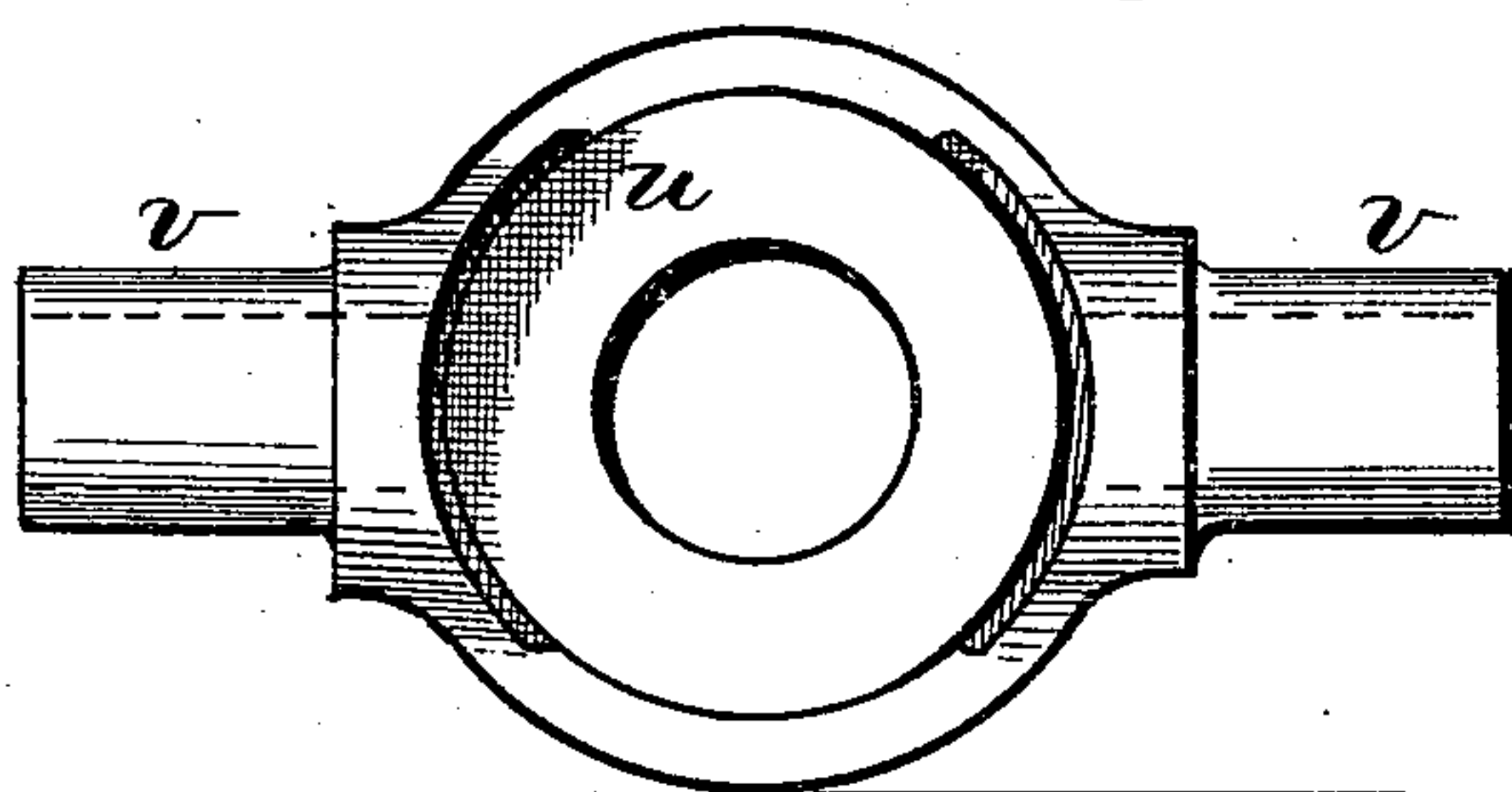
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*Fig. 6.*



*Fig. 7.*



WITNESSES:

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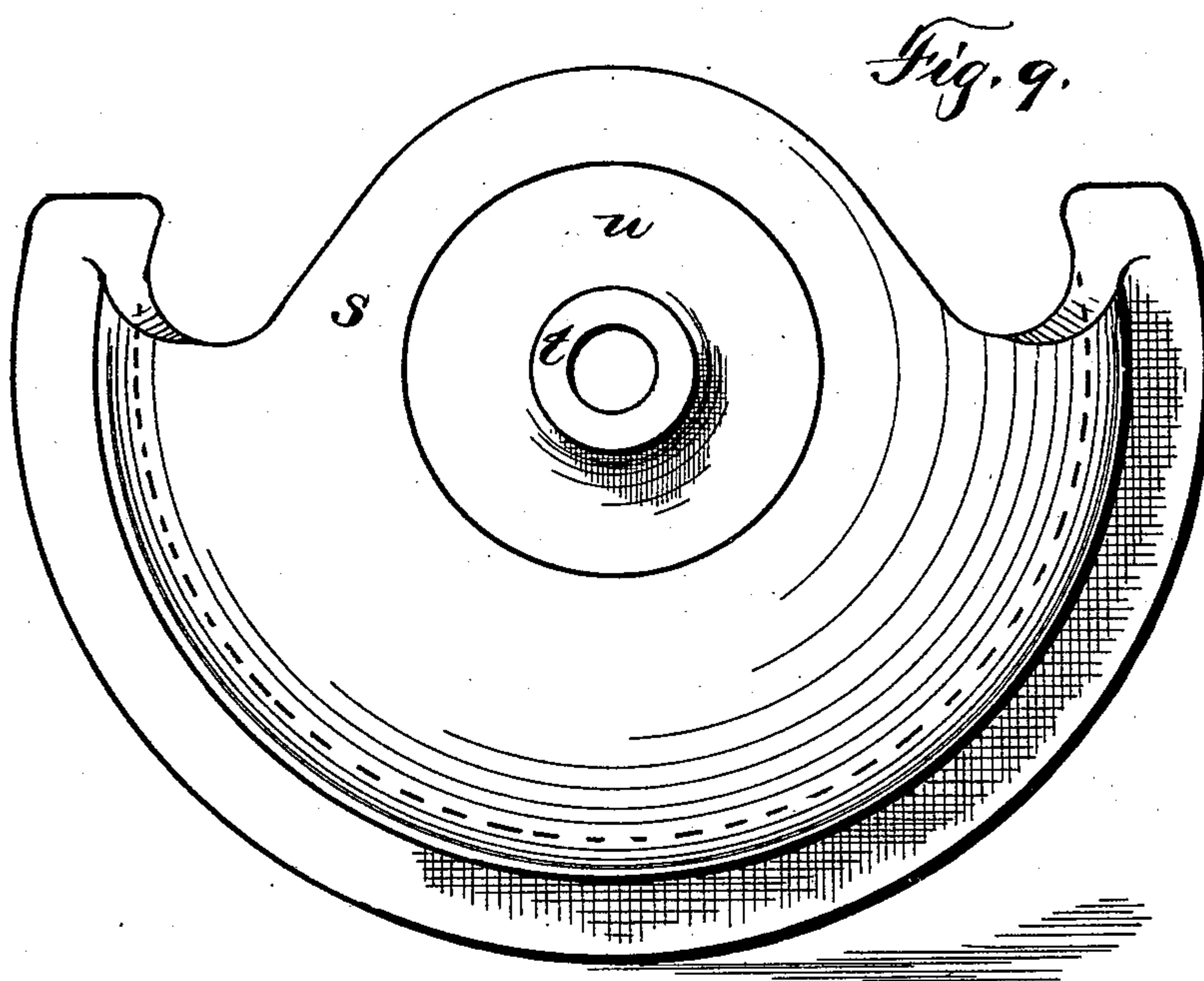
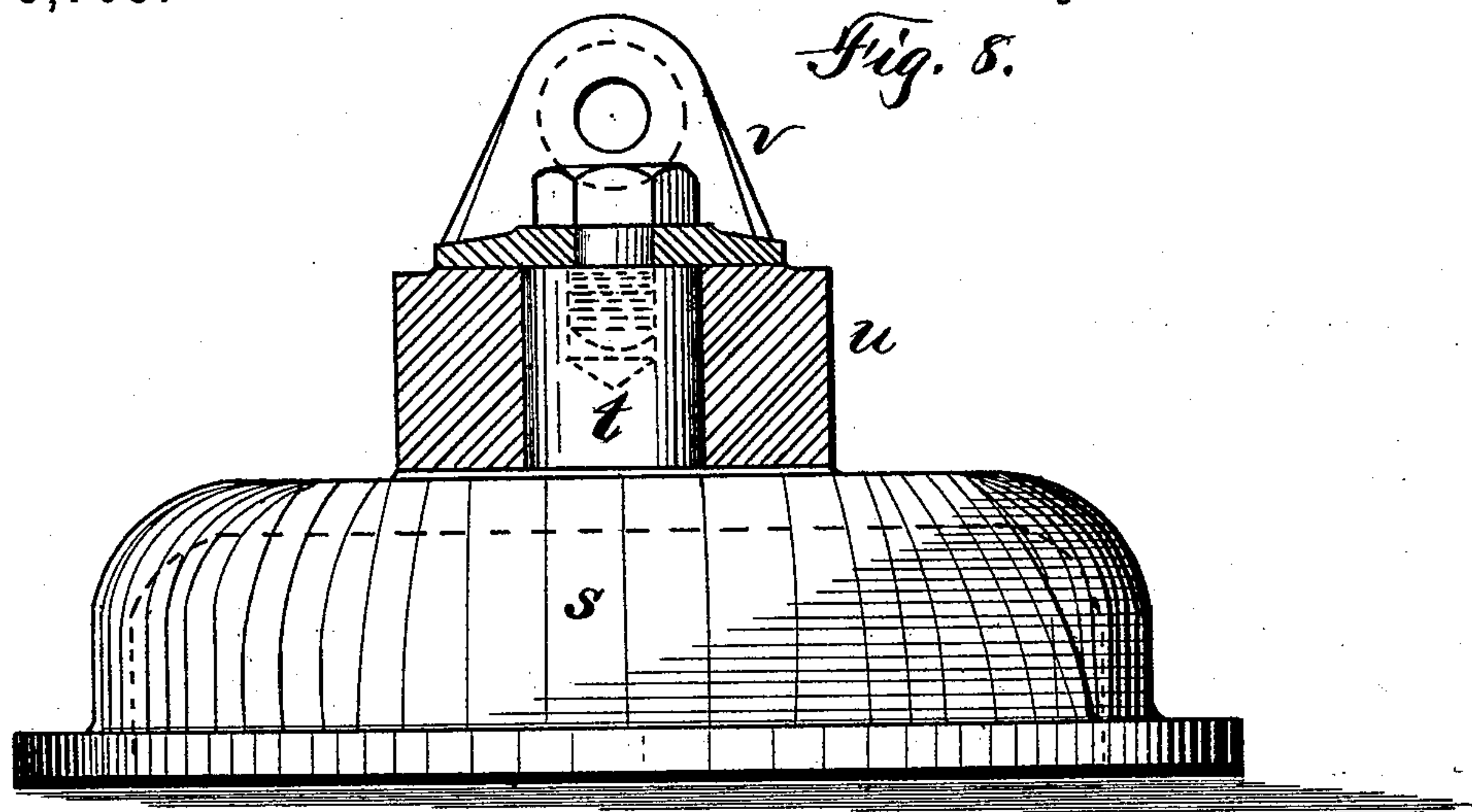
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5 Sheets—Sheet 5.

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# UNITED STATES PATENT OFFICE.

JOHN D. McRAE, OF BALDWINVILLE, NEW YORK.

## DREDGING-PUMP.

SPECIFICATION forming part of Letters Patent No. 479,765, dated July 26, 1892.

Application filed January 2, 1892. Serial No. 416,784. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. McRAE, of Baldwinsville, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Dredging-Pumps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to dredging-pumps, and particularly to the mechanism for shifting the suction-pipe and stirring apparatus and driving the latter.

My object is to produce an improved dredging-pump provided with improved means for shifting the position of the suction-pipe; also, provided with an improved stirring or agitating apparatus and improved means for shifting it laterally, and also adapted to change its position vertically and to stir, agitate, cut, dig up, and loosen the soil at or adjacent to the mouth of the suction-pipe, so that the pump will suck it up.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the apparatus. Fig. 2 is a sectional side elevation thereof on line *xx* in Fig. 1. Fig. 3 is a top plan thereof. Fig. 4 is a top plan of the turntable and part of the stirring mechanism. Fig. 5 is an elevation of the train of gearing for driving the stirring or cutting mechanism and the intermediate gears and drive-shaft. Fig. 6 is an enlarged front elevation of the pivot-joint. Fig. 7 is a top plan of the upper member of this joint detached. Fig. 8 is a front elevation of the lower member thereof and a transverse vertical section of the upper member. Fig. 9 is a top plan of the lower member thereof detached.

A is the pump, of any suitable construction, provided with a flaring or bell-shaped mouth.

B is the boat, upon which the pump is mounted, and also the support of and mechanism to carry and drive the stirrer and agitator. A horizontal drive-shaft *b* is suitably journaled and provided with a drive-gear *c* and a bevel-gear *d*, the latter meshing with a

like gear *e*, secured upon the vertical shaft *f*, said shaft being provided at its upper end with a large bevel-gear *g*, with which the vertical bevel-gear *h* engages, this gear being secured upon the horizontal shaft *i*, which is provided with the sprocket-gears *k* and the belts *m*, the drive-shaft *n*, and the sprockets *p* thereon. A suitable frame is erected upon the boat, and *r* is the top thereof, extending across under the gear *g* and through which the shaft *f* passes and in which it is journaled. This top can be either secured to its supports or adapted to slide around thereon upon said shaft as a pivot. Upon this top a bracket *s* is secured, arching across over the gear *g* and partially inclosing it. Upon this bracket I erect a post *t*, surrounded by a sleeve *u*, said sleeve being provided with lateral arms or wings *v* on opposite sides, in the top of which the shaft *i* is journaled.

D is the stirring or cutting apparatus, comprising a frame composed of the side rails *2 2*, which are pivoted upon the upper ends of the wings *v* of the sleeve *u* and suitably connecting cross-bars. The shaft *n* is journaled in these side rails and is provided with sprockets between said rails, over which the belts *3* pass and extend down to and around sprockets upon the shaft *4*, journaled in the lower end of said side rails, and the stirring, cutting, or digging arms or bars *5* are secured upon this shaft, being of any form desired suitable for the purpose. The suction-pipe *a* is connected to said frame adjacent to its lower end, so that its mouth is contiguous to the digger and so that it will rise and fall with the frame.

The means for raising it are not shown, but may be any ordinary rope or tackle-block mechanism.

It will be readily seen that the frame can be swung laterally upon said sleeve and post as a pivot without changing the relations of the gears *k*, shaft *i*, and the sprocket belts, gears, and shafts for driving the stirrers or cutters, such movement simply changing the position of the gear *h* upon the gear *g*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A frame, a stationary vertical post, a sleeve thereon, wings upon the sleeve, upon which the frame is pivoted, stirrers secured

upon a shaft journaled in said frame, and means to rotate said stirrers, in combination.

2. A drive-shaft and gear, a vertical shaft, bevel-gears upon said shaft, engaging with  
5 each other, a horizontal shaft, bevel-gears upon the latter and upon said vertical shaft, engaging with each other, and sprockets upon the horizontal shaft, a frame, a shaft jour-  
naled therein and provided with sprocket-  
10 gears, belting connecting said gearing and leading to and driving a shaft in the lower end of said frame to rotate the stirrers thereon, and a suction-pipe supported by the frame  
15 carrying the stirrers, in combination, as set forth.

3. The combination, with the pump and its suction-pipe, of a frame to which the pipe is connected, a shaft across the lower end of said frame, a pivot-post, a sleeve around it and wings upon said sleeve, upon which the frame 20 is hinged, a stirring apparatus upon said frame, and gearing and belting leading from a source of power to and actuating the stirring apparatus.

In witness whereof I have hereunto set my 25 hand this 12th day of December, 1891.

JOHN D. McRAE.

Witnesses:

HOWARD P. DENISON,  
C. W. SMITH.