

(No Model.)

G. W. LYONS.  
PAPER PULP MACHINE.

No. 564,436.

Patented July 21, 1896.

Fig. 1.  
5

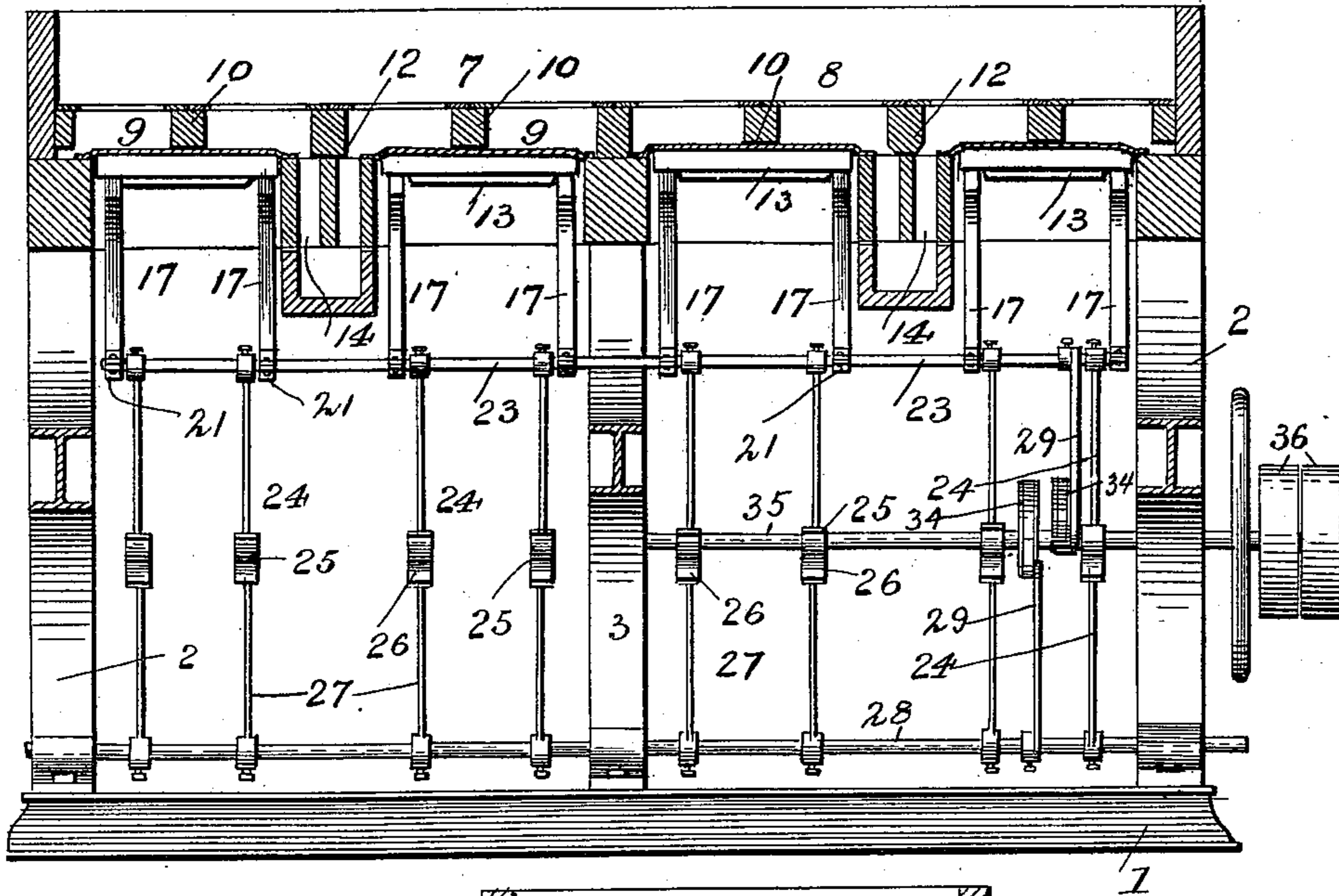


Fig. 2.

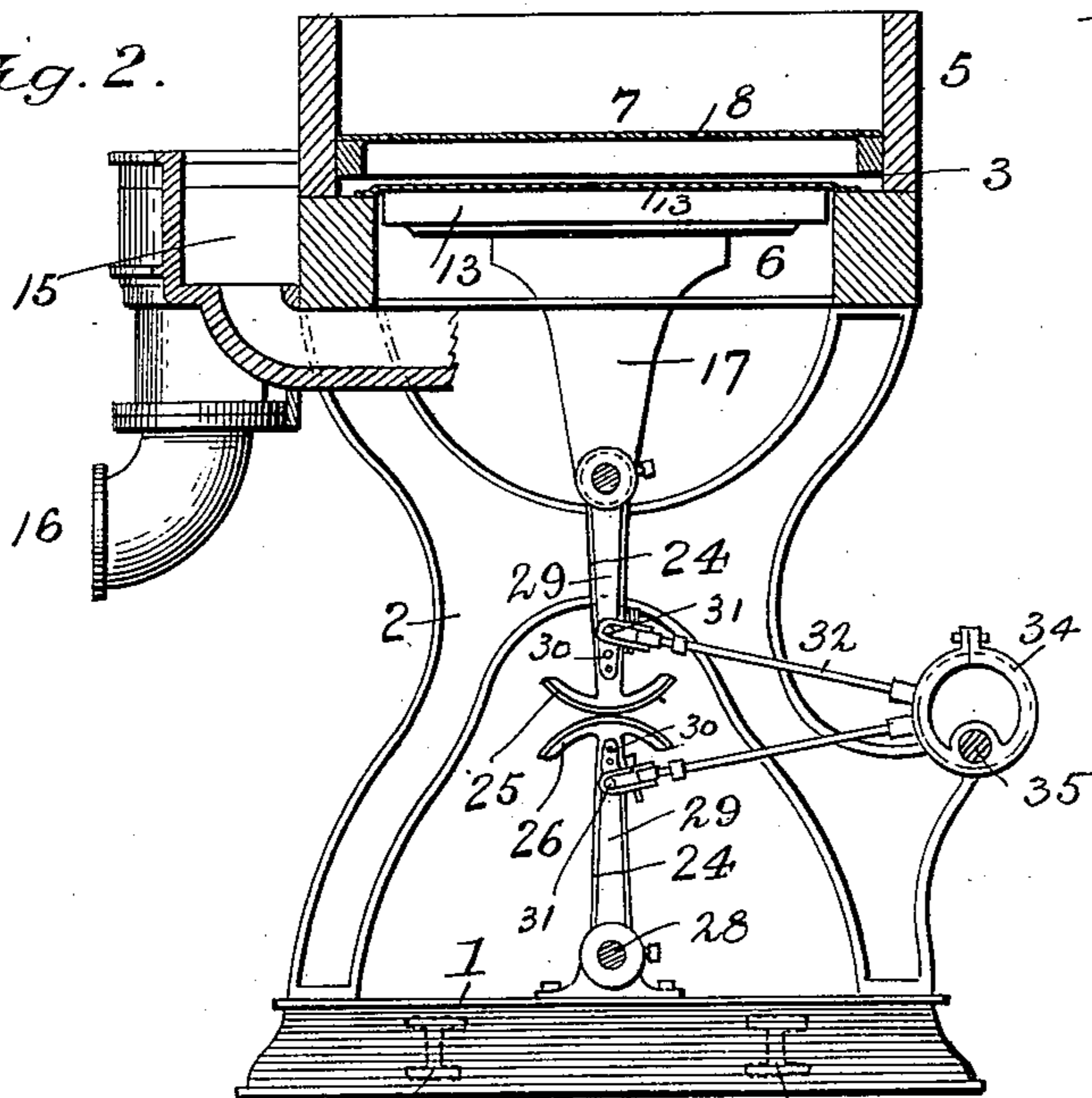
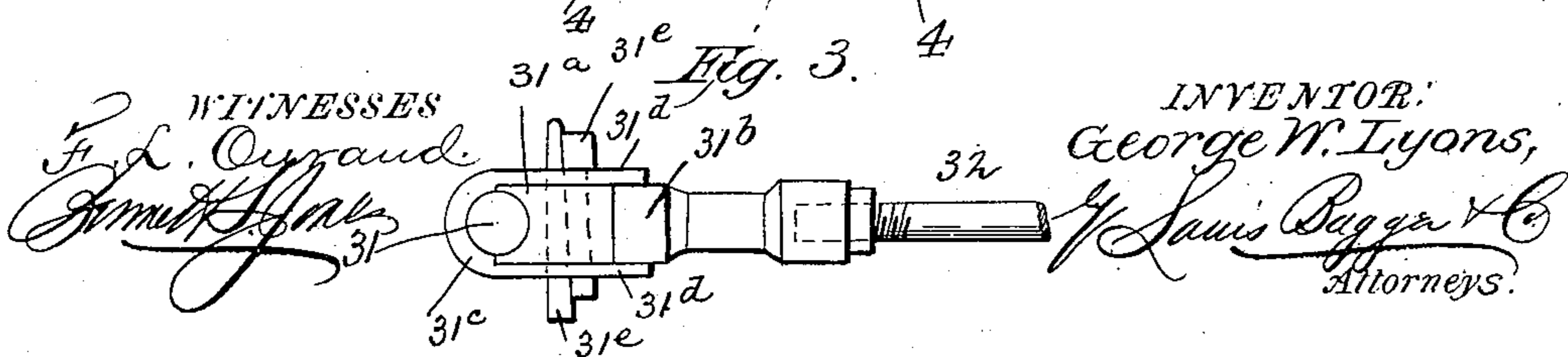


Fig. 3.



WITNESSES  
F. L. Ouyand  
J. M. H. H. H.

INVENTOR:  
George W. Lyons,  
J. Louis Bagge & Co.  
Attorneys.

# UNITED STATES PATENT OFFICE.

GEORGE W. LYONS, OF WATERTOWN, NEW YORK.

## PAPER-PULP MACHINE.

SPECIFICATION forming part of Letters Patent No. 564,436, dated July 21, 1896.

Application filed April 5, 1895. Serial No. 544,604. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. LYONS, a citizen of the United States, and a resident of Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Paper-Pulp Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to paper-pulp machines, and its object is to provide improved means for operating the plungers of the suction-diaphragms, thereby dispensing with the cams now ordinarily employed for such purpose.

The invention consists in the novel construction and combination of parts herein-after fully described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation of a paper-pulp machine or strainer constructed in accordance with my invention. Fig. 2 is a transverse section of the same.

In the said drawings, the reference-numeral 1 designates the frame of the machine, provided at its opposite ends with standards 2 and with a central standard 3, which are connected together by tie-bars. (Not shown.) Said frame comprises upper and lower sections 5 and 6, the former of which is formed with a vat 7 for receiving the unstrained material, and at the base of the vat is a screen-plate 8, beneath which is a series of stationary suction-chambers 9, separated by partitions consisting of packing-strips 10 and cross-bars 12, and at the base of the suction-chambers are diaphragms 13.

The numeral 14 designates outlet-passages, connected with the outlet-chamber 15, provided with outlet-pipe 16. The diaphragms are forced up and down by plungers 17.

The machine so far described forms no part of my present invention, which relates solely to the means for elevating the plungers to actuate the diaphragms.

The lower ends of the plungers are formed with boxes 21, in which is journaled a rock-

shaft 23, provided with a series of downwardly-depending arms 24, eight being shown in the present instance, although more or less may be employed, if desired. These arms at their lower ends are formed with segments 25, which contact with similar segments 26 on arms 27, secured to a lower rock-shaft 28, journaled to the machine-frame. Also secured to said rock-shafts are two oppositely-extending rods 29, the free ends of which are formed with a series of holes 30. Engaging with these holes are headed screw bolts or pins 31, which pass therethrough. These pins also fit in half-round boxes 31<sup>a</sup> of blocks 31<sup>b</sup>, connected with pitmen 32, and are held in place in said boxes by half-round boxes 31<sup>c</sup>, formed integral with straps 31<sup>d</sup>, formed with opposite apertures for the passage of keys 31<sup>e</sup>, which also pass through similar apertures in the blocks 31<sup>b</sup>. These pitmen are connected with eccentrics 34 on a driving-shaft 35, provided with a fast and loose pulley 36.

The operation is as follows: As the driving-shaft is rotated the rock-shafts will be oscillated, which in turn will oscillate the segment-arms, and the segments contacting with each other will, as they move inward, elevate the plungers of the diaphragms. On their outward movements the plungers will be depressed by the coiled springs. By means of the slots in the rods secured to the rock-shafts the stroke of the plungers can be regulated.

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

In a paper-pulp machine, the combination with the frame, the vat, the screen, the suction-diaphragm and the plungers, of the vertically-movable rock-shaft to which said plungers are pivoted, the depending oscillatory arms, the upper ends of which are secured to said rock-shaft and the lower ends formed with segments eccentric to the axis of said arms, the lower rock-shaft, pivotally connected with the frame of the machine, the upwardly-extending arms the lower ends of which are secured to said lower rock-shaft and the upper ends formed with segments eccentric to the axes of said arms, the oppositely-extending bars secured to said rock-shafts,

the adjustable pitmen secured to the upper  
and lower ends thereof, respectively, the ec-  
centrics and straps with which said pitmen  
are connected and the driving-shaft on which  
5 said eccentrics are mounted substantially as  
described.

In testimony that I claim the foregoing as

my own I have hereunto affixed my signature  
in presence of two witnesses.

GEORGE W. LYONS.

Witnesses:

W. W. KELLEY,  
F. D. PIERCE.