

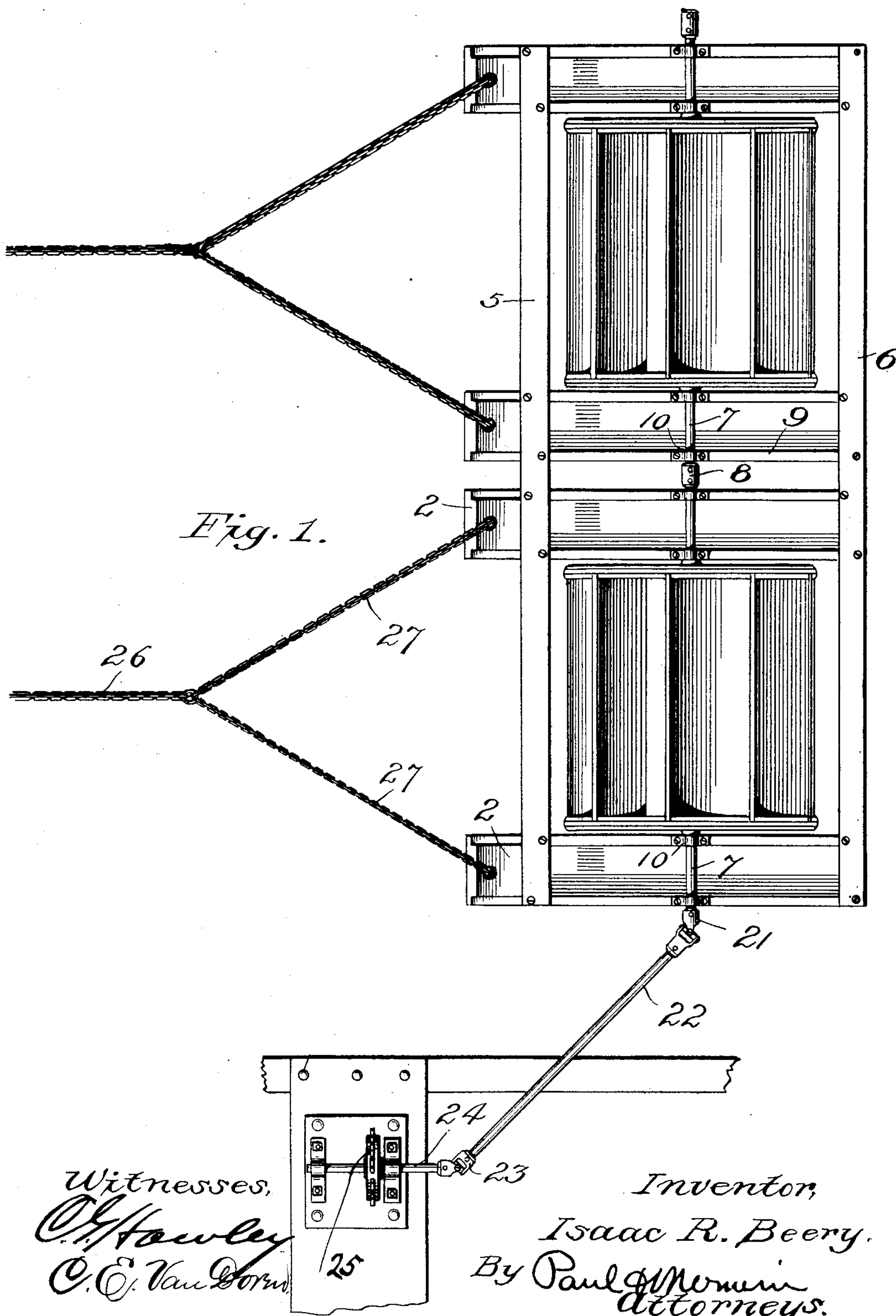
(No Model.)

2 Sheets—Sheet 1.

I. R. BEERY.
CURRENT WATER WHEEL AND MEANS FOR TRANSMITTING
POWER THEREFROM.

No. 482,034.

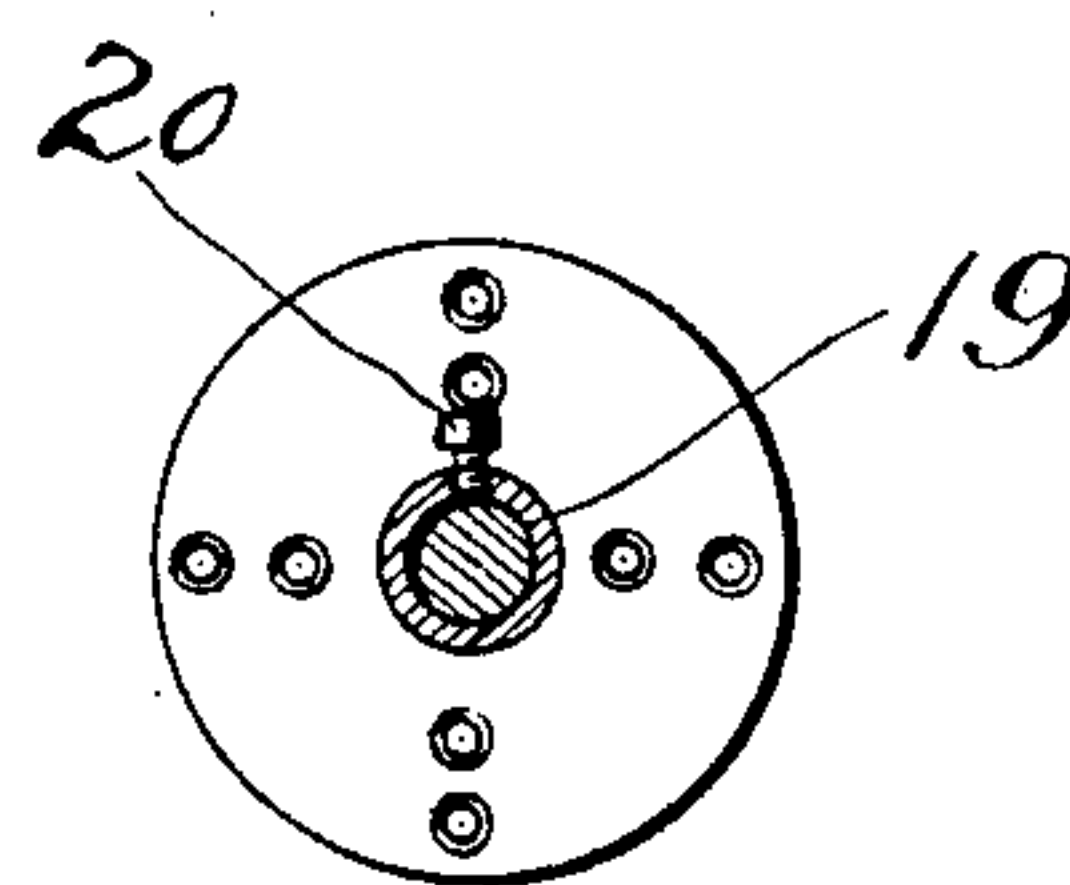
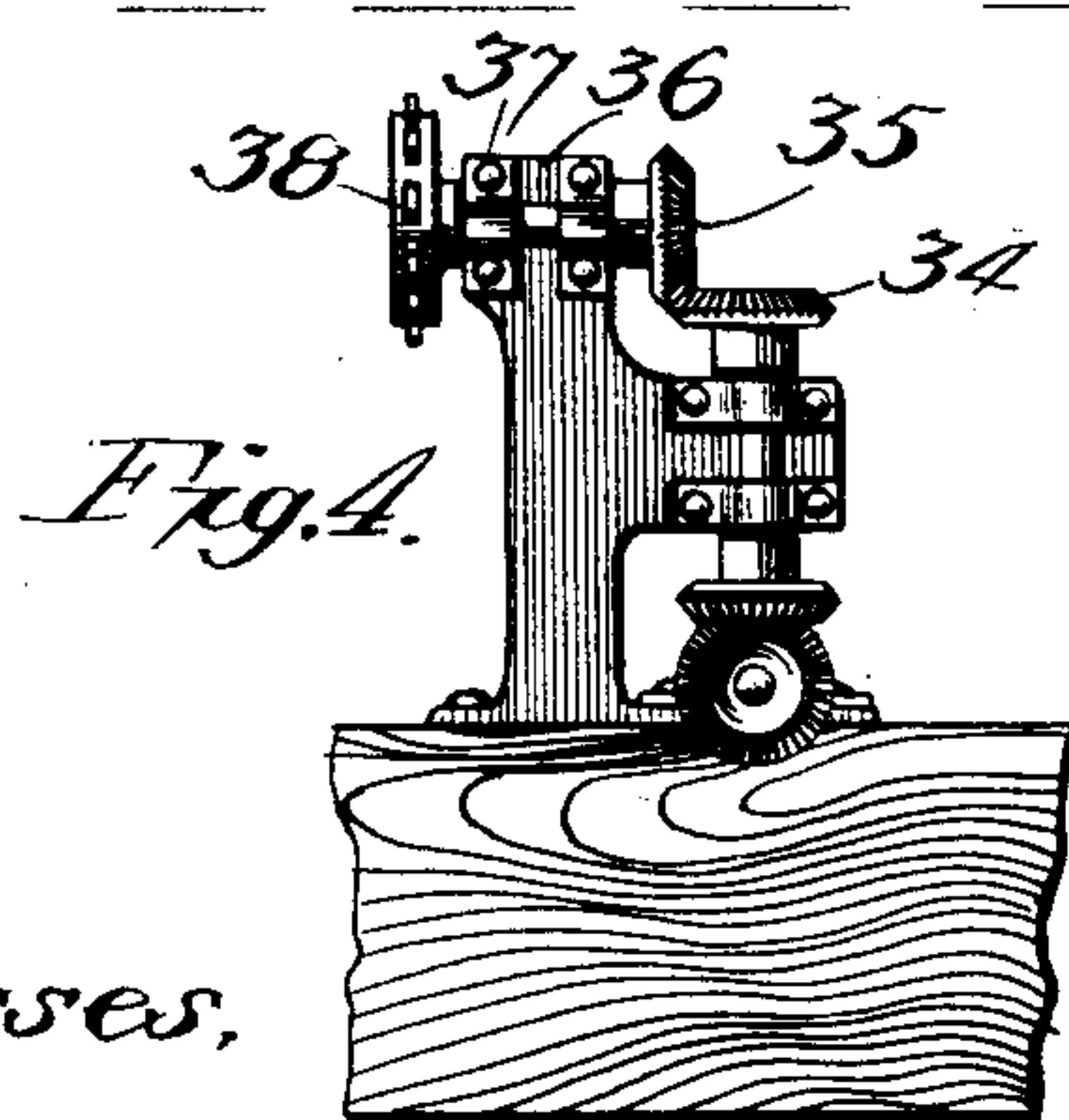
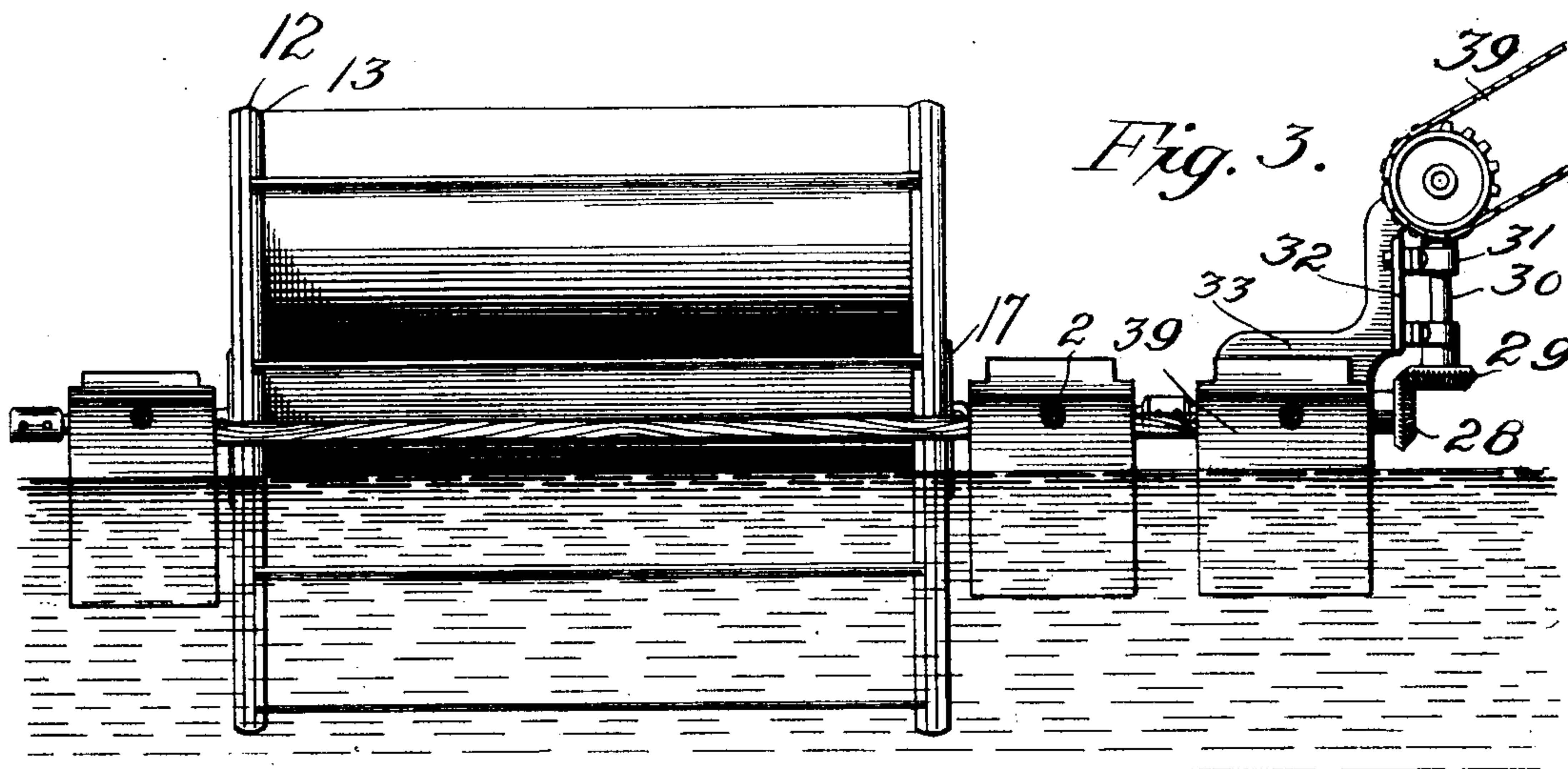
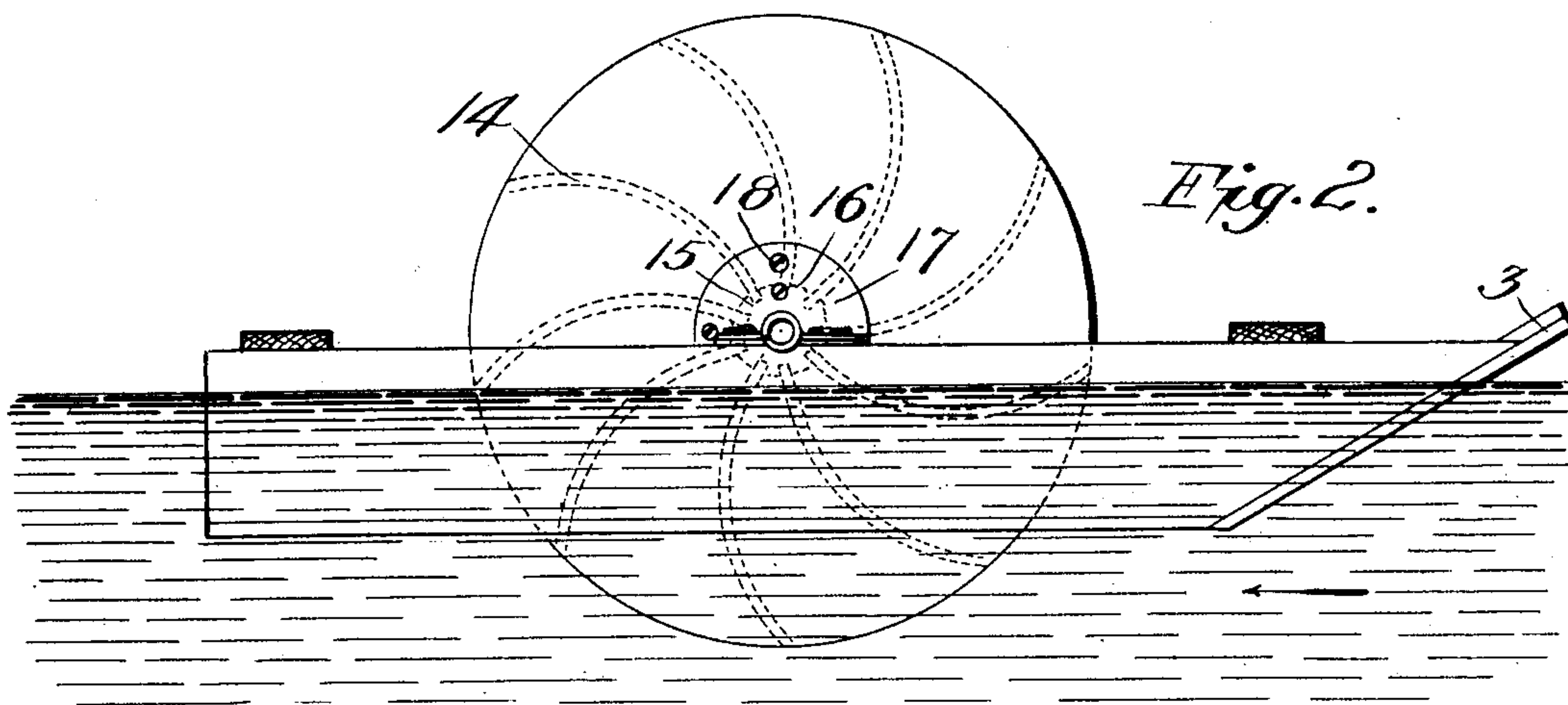
Patented Sept. 6, 1892.



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CURRENT WATER WHEEL AND MEANS FOR TRANSMITTING
POWER THEREFROM.

No. 482,034.

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Witnesses,
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UNITED STATES PATENT OFFICE.

ISAAC R. BEERY, OF MINNEAPOLIS, MINNESOTA.

CURRENT WATER-WHEEL AND MEANS FOR TRANSMITTING POWER THEREFROM.

SPECIFICATION forming part of Letters Patent No. 482,034, dated September 6, 1892.

Application filed April 11, 1892. Serial No. 428,566. (No model.)

To all whom it may concern:

Be it known that I, ISAAC R. BEERY, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Current Water-Wheels and Means for Transmitting Power Therefrom, of which the following is a specification.

My invention relates to current water-wheels adapted to be floated in the stream and to be turned by the current, and to specially-devised means for economically and efficiently transmitting power therefrom.

The object of the invention is to provide a device of this class which, while of a cheaper construction than those heretofore devised, is calculated to develop a greater power than the same.

To this end my invention consists in general in the constructions and combinations hereinafter described, and particularly pointed out in the claim.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a plan view showing an apparatus embodying my invention. Fig. 2 is a partial side view thereof. Fig. 3 shows an end elevation of my current-wheel and a modified power-transmitting device in connection therewith. Fig. 4 is a detail side view of the power-transmitting mechanism shown in Fig. 3. Fig. 5 is a detail showing the manner of securing the wheel upon the shaft.

As shown in the drawings, 2 2 represent the small narrow flat-boats which I employ to support each one of my current-wheels. Each of these flat-boats has its forward end made up of the forwardly-projecting and downwardly-inclined prow 3, and the several floats are secured together by the transverse beams 5, one in front and one in the rear. A transverse shaft 7 extends between each two boats, the two shafts being connected by the separable coupling 8, adapted to adjust itself to any alignment which the shafts may assume. These shafts are secured upon the upper edges of the side boards 9 of the boats by the removable bearing-boxes 10. The end of each wheel is made up of three sections 11, 12, and 13, the first two being cross-grained with respect to one another and the latter being composed of the sector-like pieces arranged between the

several curved wings or blades 14. In this manner I construct an exceedingly strong wheel not apt to be damaged by driftwood or other objects coming in contact therewith. The wings or blades are made up, preferably, of hewn lumber and have their inner edges (shown in dotted lines in Fig. 2) grooved into the main hub 16 of the wheel. This hub has an opening to admit the shaft 7, and the wheel is secured upon the shaft by the separate plates or disks 17, one secured upon each end of the wheels. Each of these disks is secured upon the end of the wheel by screws or bolts 18 and has a short hub or collar 19 secured upon the shaft by a set-screw, key, or pin 20. To the shore end of the shaft or the series of shafts I secure the universal coupling 21, and from this coupling extends the rod 22 to the shore. At this point a second universal coupling 23 is introduced between the tumbling-rod 22 and the stationary shaft 24, upon which the power-transmitting gears, sprocket, or pulley are located. By this means it will be seen that any rise or fall of the current-wheel is accommodated and at the same time a complete power connection maintained between the wheels and the shore. The floats are secured by the chains 26, having the diverging sections 27, passing to the pairs of floats, or a cable stretched between the shore or banks of the stream may be employed.

In place of the universal-joint and tumbling-rod connection I may employ the miter gear-shafts shown in Figs. 3 and 4. As there shown, a miter-gear 28 is secured upon the end of the shaft 7 and meshes with a gear 29, secured upon the vertical shaft 30, which in turn is fastened in the bearings 31, provided upon the vertical part 32 of the bracket 33. Upon the upper end of the shaft 30 is a third miter gear-wheel 34, meshing with the gear-wheel 35 upon the horizontal shaft 36, secured in the bearings 37 and having upon its other end a sprocket-wheel 38, from whence a link belt 39 extends to the shore. The bracket 33 is mounted upon the separate boat 39, secured to the float 2 and adapted to bear the entire weight and strain of the miter-gear device.

My wheel is of such a diameter as to project below the bottoms of the boats, it being my object to obtain the full pressure of water and the benefit of the under-currents.

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

The combination of the boats 2 and the
5 beams 5 and 6, extending between the same
and rigidly connecting them with the trans-
verse shaft 7, extending between said boats,
the water-wheel arranged upon said shaft,
said water-wheel being made up of the parts
10 11, 12, and 13 and the curved blades 14, the
plates 17, arranged upon said ends and hav-

ing hubs secured upon said shaft, the uni-
versal joints 21 and 23, the rod 22, extending
between the same, and the power-shaft ar-
ranged upon the shore in connection with the 15
joint 23, substantially as described.

In testimony whereof I have hereunto set
my hand this 4th day of April, 1892.

I. R. BEERY.

Witnesses:

O. G. HAWLEY,
F. S. LYON.