

J. Granger.
Chain Propeller.

No. 22510.

Patented. Sep. 29/1868

Fig. 1.

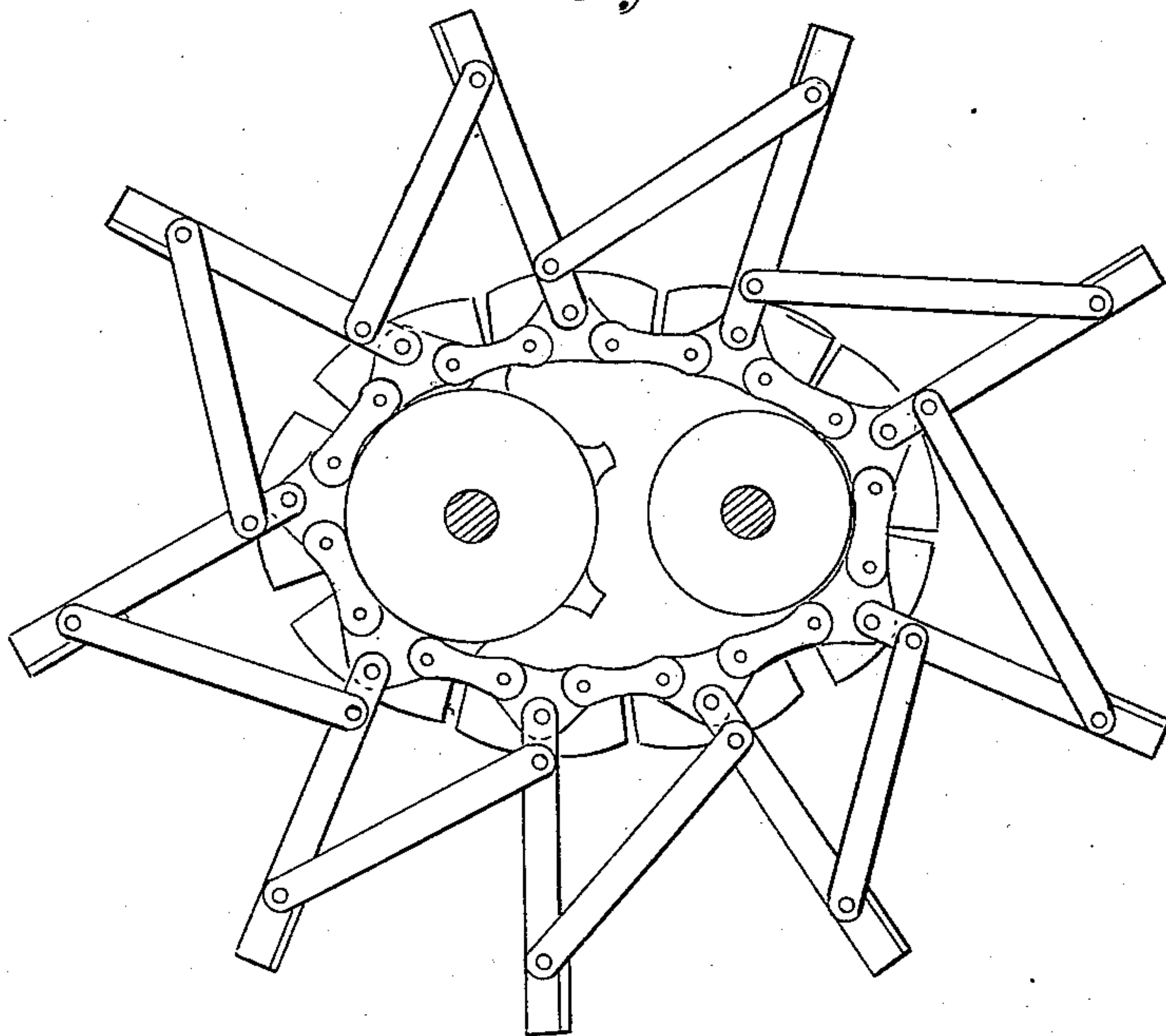


Fig. 2.

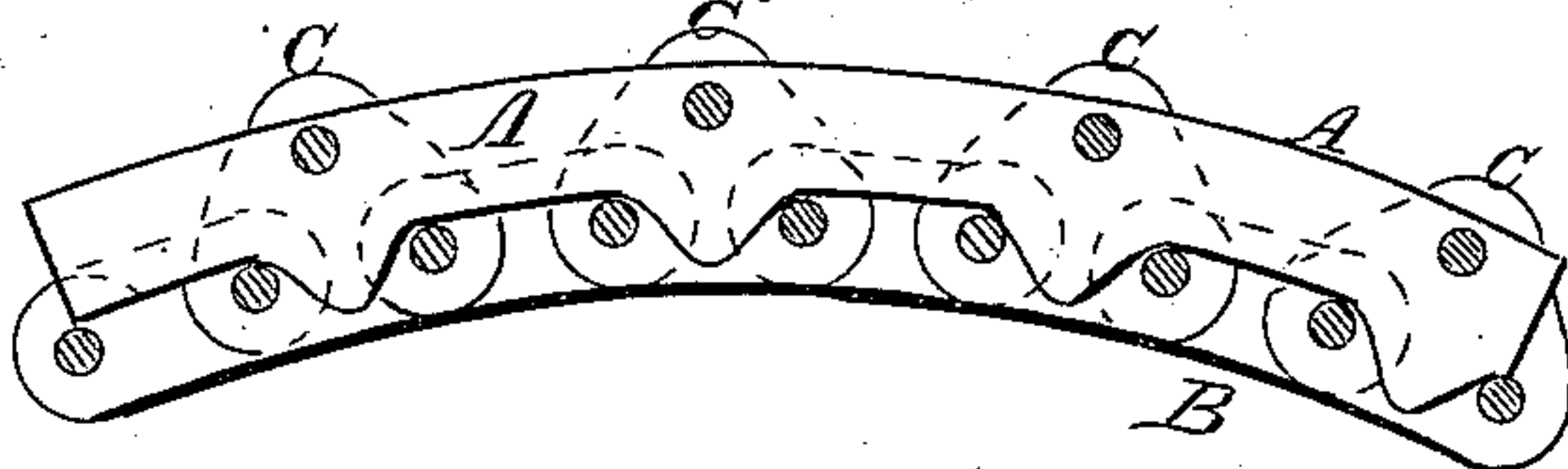
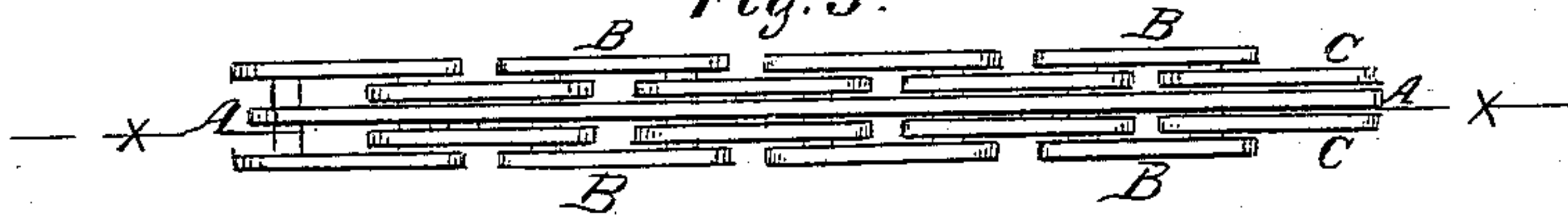


Fig. 3.



WITNESSES
Wm A Morgan
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Attorney

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JAMES GRANGER, OF ZANESVILLE, OHIO.

Letters Patent No. 82,516, dated September 29, 1868.

IMPROVEMENT IN PROPELLING-APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES GRANGER, of Zanesville, in the county of Muskingum, and State of Ohio, have invented a new and useful Improvement in Steamboat Paddle-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to an improvement on a steamboat propelling-wheel, for which wheel I have already secured Letters Patent of the United States; and the invention consists in providing a travelling-bridge for the chain to which the buckets are attached, which shall prevent the chain from sagging, and otherwise support and keep the chain in place.

Figure 1 represents the wheel, constructed according to my present patent, it being a side elevation, showing the propelling-shafts, and the method of rotating the wheel.

Figure 2 is a vertical longitudinal section of the chain, with my travelling-bridge applied, showing the manner of its connection with the links, the section being through the line *x x* of fig. 3.

Figure 3 is a top view of the chain.

Similar letters of reference indicate corresponding parts.

In the wheel, as shown in fig. 1, there is no particular provision made for preventing the chain from sagging, there being no bridge sufficiently lengthy for that purpose.

A is the improved bridge, which is designed to cover any suitable number of the links B, (which are seen in fig. 2 in dotted lines,) and on the outside in fig. 3.

C represents two series of connecting-plates, to which the links, as well as the arms of the buckets, are attached.

It will be seen that the bridge A is placed between these series of plates, and its action is such that when the chain is elongated so as to bring the greatest desirable number of buckets into use at one and the same time, the bridge will support the chain and keep it in place.

The lugs on the driving-wheel operate against the plates C when the wheel is in motion, the same as shown in fig. 1.

I claim as new, and desire to secure by Letters Patent—

The travelling-bridge A, constructed substantially as shown and described, in combination with a chain propelling-wheel, and for the purposes set forth.

JAMES GRANGER.

Witnesses:

MOSES M. GRANGER,

GILBERT D. MUNSON.