

J.P. & D.W. Hoyt

Water Wheel,

N^o 21,757.

Patented Oct. 12, 1858.

Fig. 1.

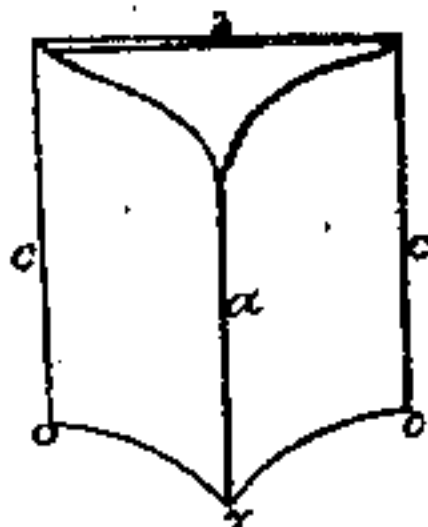
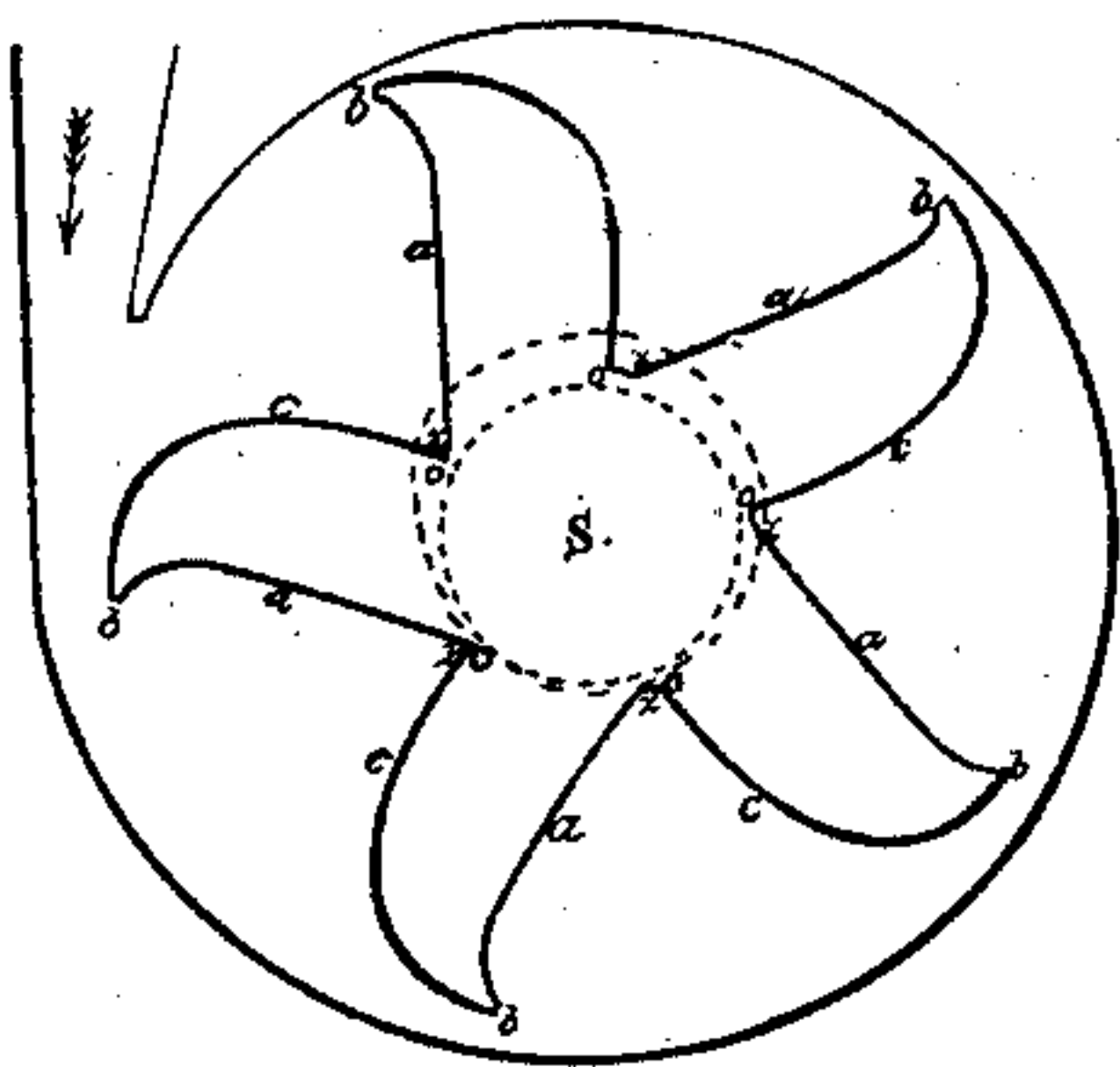


Fig. 2.

Fig. 3.

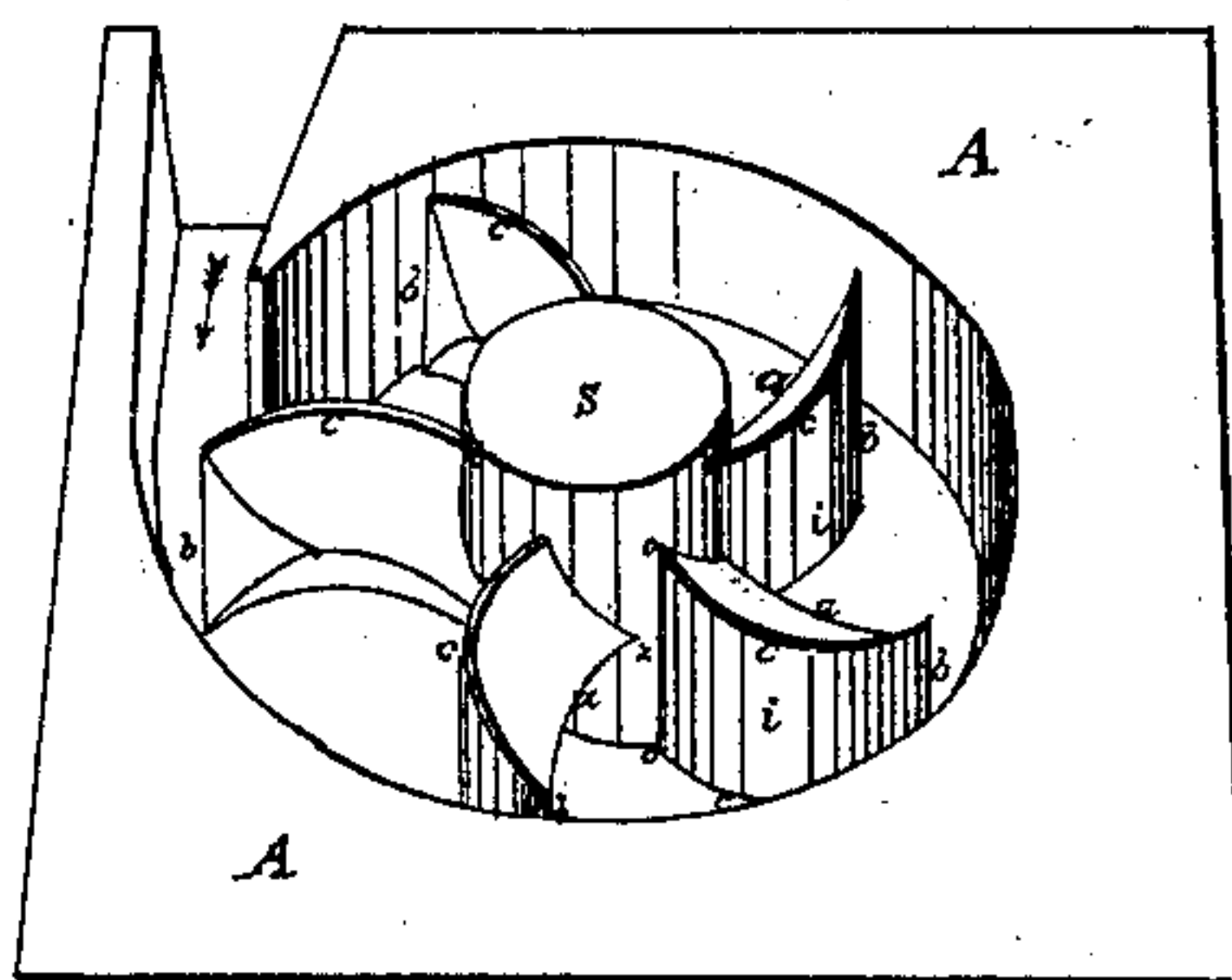


Fig. 5.

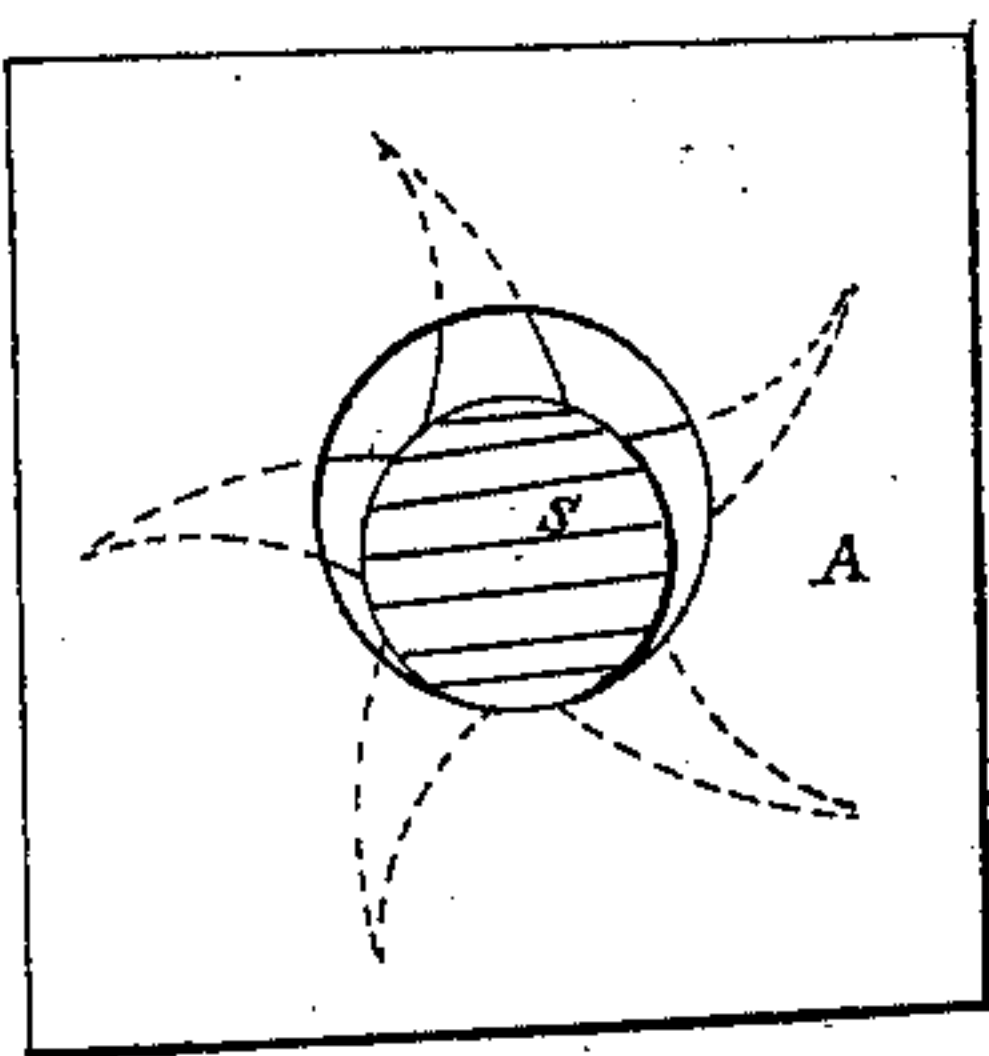
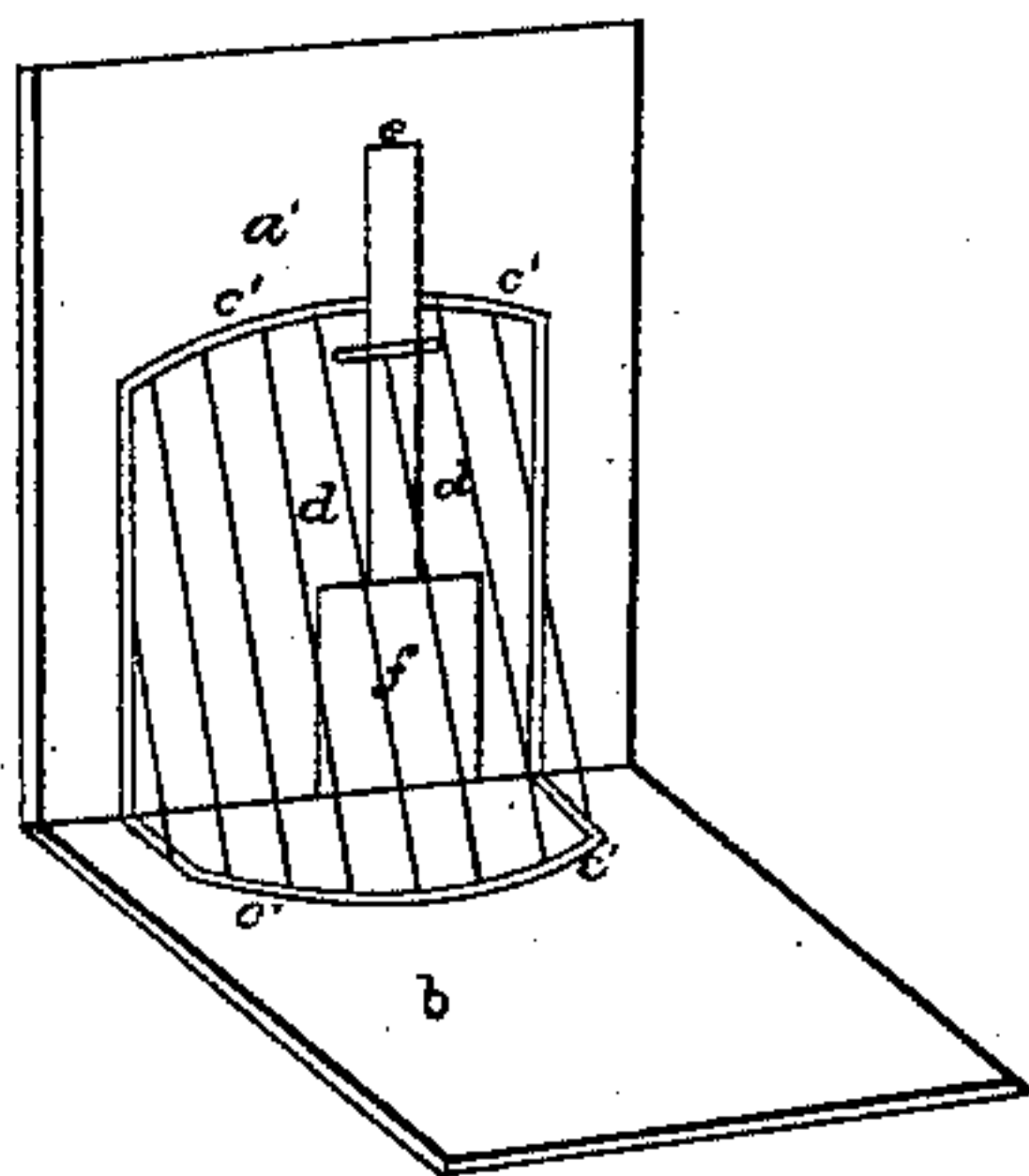


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN P. HOYT AND DAVID W. HOYT, OF LUMBER CITY, PENNSYLVANIA.

IMPROVED WATER-WHEEL.

Specification forming part of Letters Patent No. **21,757**, dated October 12, 1858.

To all whom it may concern:

Be it known that we, JOHN P. HOYT and DAVID W. HOYT, of Lumber City, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Water-Wheels; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists in the combination of a water-wheel as constructed, with the external casing as constructed, so arranged that the water will be received on the back of the bucket and be driven out when its force is spent by the front of the bucket between the shaft of the wheel and the casing, as will be hereinafter described.

The wheel and the casing stand in a vertical position, the water being admitted to the wheel through the channel indicated by the arrow seen in Figure 3.

S represents the shaft of the wheel, and A represents the casing. The shaft has its bearings in the sides of the casing. The aperture in the casing through which the shaft passes is made larger than the shaft and may be in an elliptical form. The shaft bears upon the bottom of these openings in the casing, as will be seen by referring to Fig. 5. The form of the bucket will be seen by referring to the several figures. They may be thicker, as shown in Fig. 1, than what they are represented to be in Fig. 5. This is not material, as a little difference of thickness in that direction will not injure the operation of the wheel.

The buckets, as will be seen, are in a curved form, their backs *i i i* being broad and their front running off to an edge at *a* and diminishing in thickness each way as they approach

the end of the bucket. These buckets, if cut in two near the shaft, the sections would be in the shape of an equilateral triangle. If we let the wheel remain at rest and draw a horizontal line across from side to side, it will be seen that that bucket which is on the side where the water is admitted will present its back, a broad surface, to the water; but the bucket on the other side, instead of having its broad side up, will have its sharp or edged side up, thus throwing the water which acted upon the back of the bucket immediately in front of it off on both sides of it through the openings in the casing. The backs of the buckets receive the water by percussion in part at its ingress, and that portion of the water between the point of the bucket and casing acts in a cuneiform manner, and all or a majority of the buckets below a horizontal line receive a great percentage of the power of the water.

Fig. 4 represents a screen and gate, which are intended to prevent trash from getting in the casing, and thus preventing the successful operation of the wheel.

Having thus fully described our invention, we claim—

The combination of a wheel as constructed with the casing as constructed, when the two are so arranged that the water will be received on the broad backs of the buckets and be discharged by their inclined fronts between the casing and the shaft of the wheel, in the manner herein specified, and for the purpose set forth.

JOHN P. HOYT.
DAVID W. HOYT.

Witnesses:

ALEXANDER BEDEL,
JOS. HOOVER.