

No. 615,277.

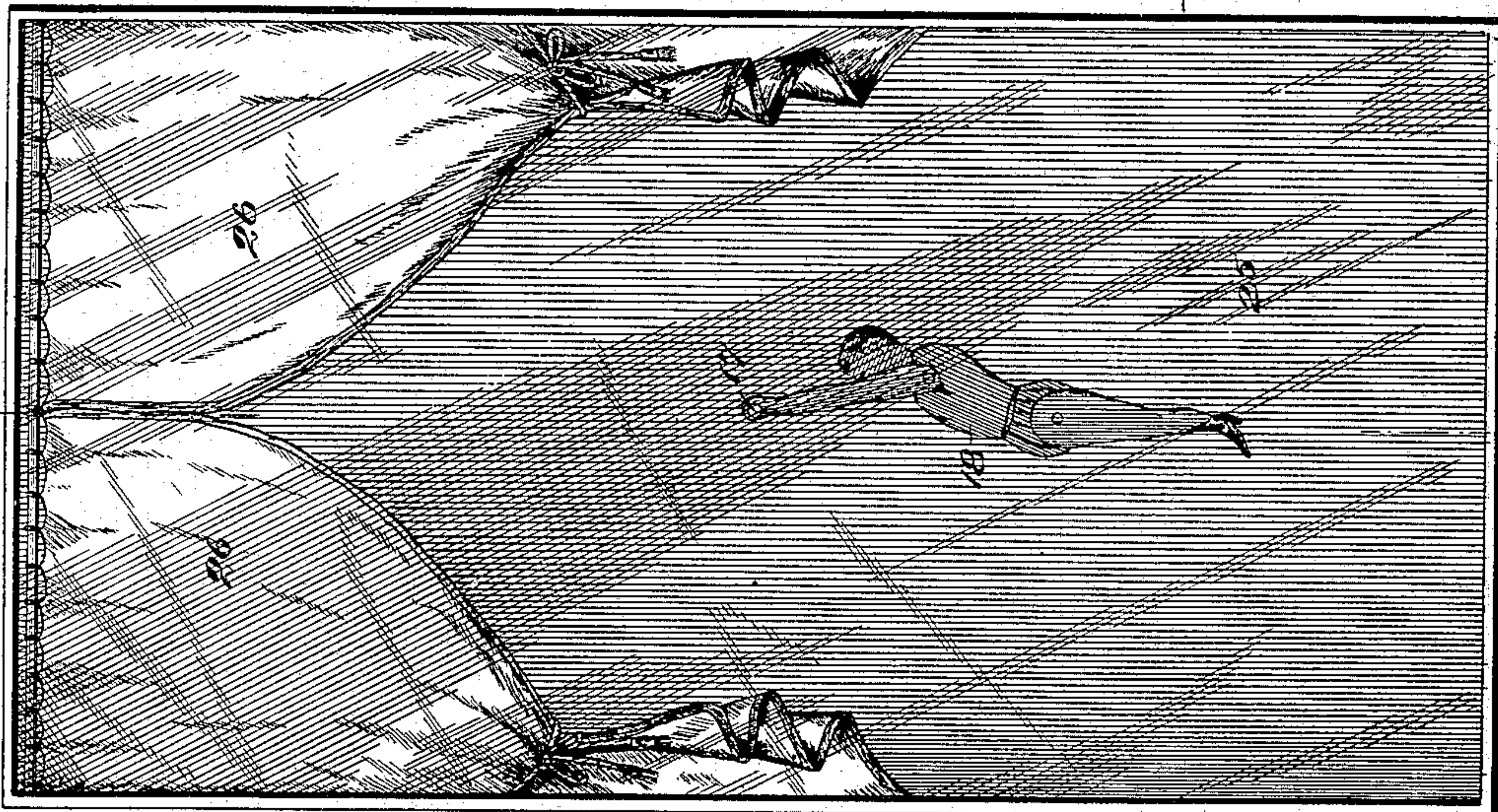
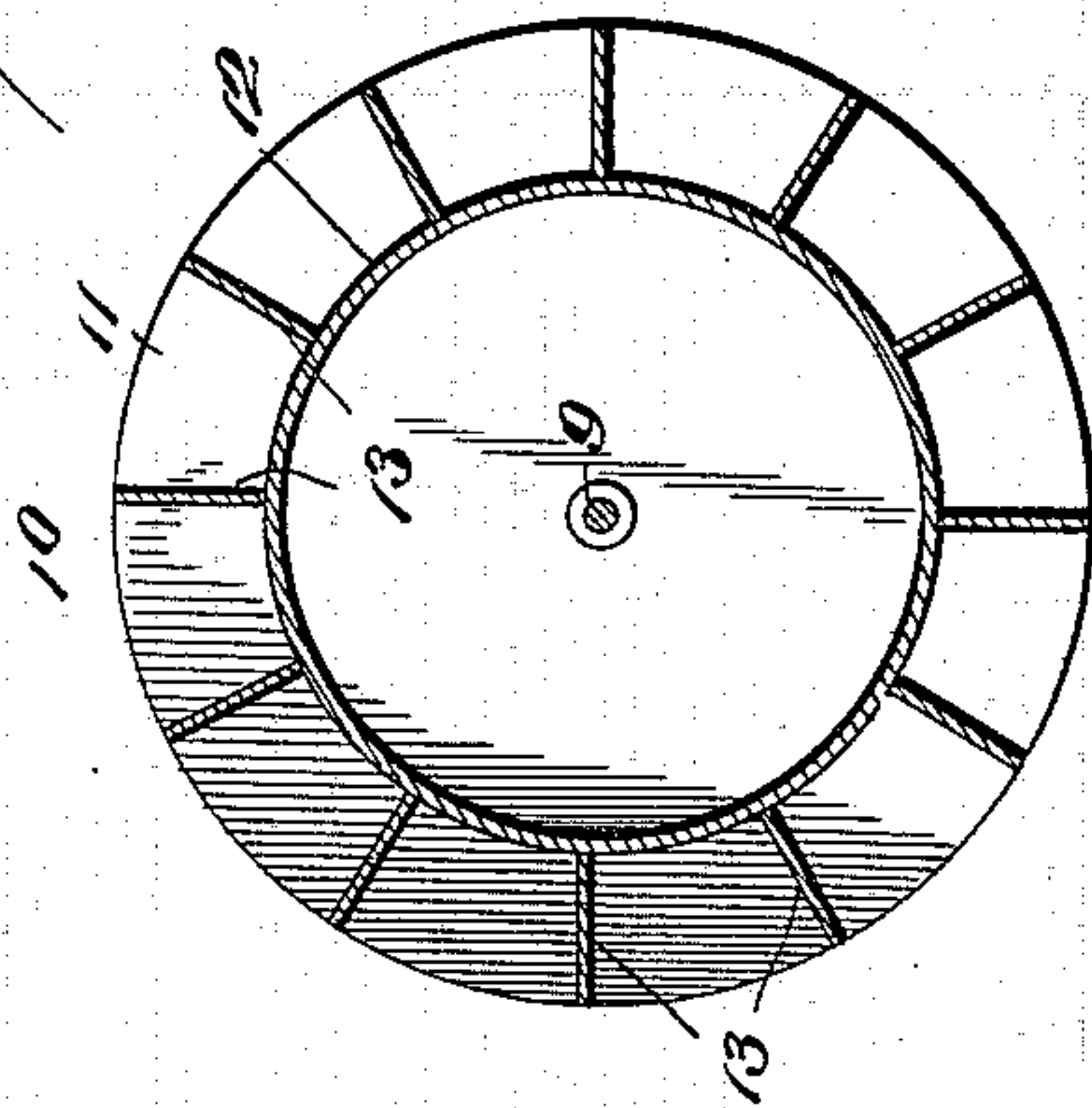
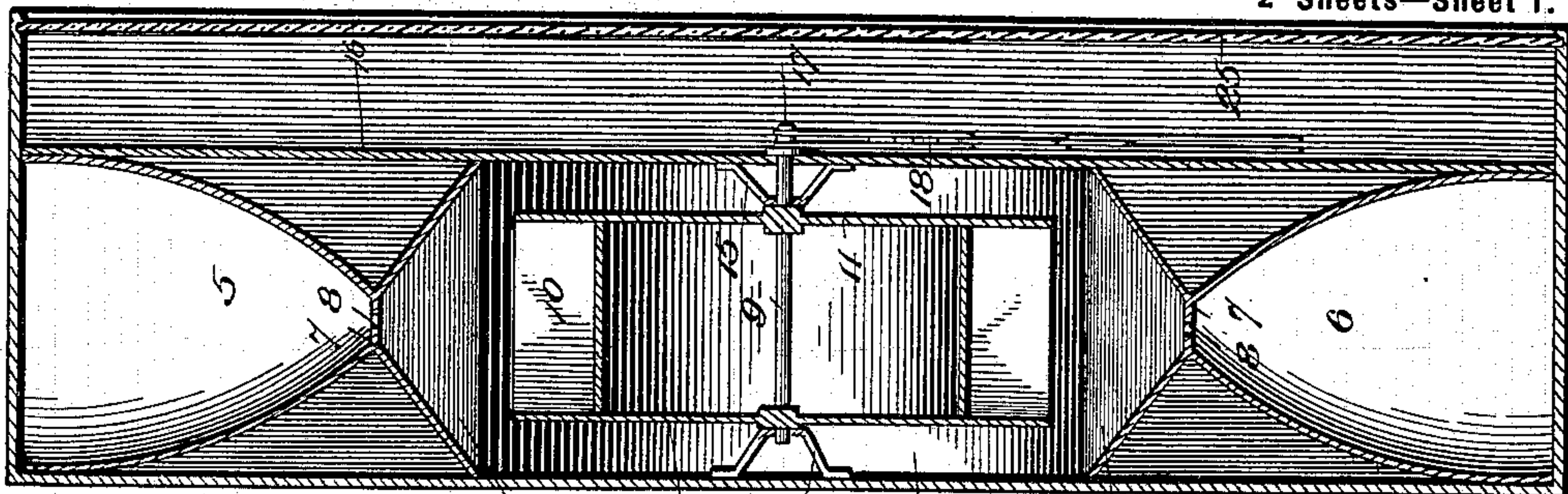
Patented Dec. 6, 1898.

W. H. HYDE.  
AUTOMATIC TOY.

(Application filed Dec. 3, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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Inventor  
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his Attorney.



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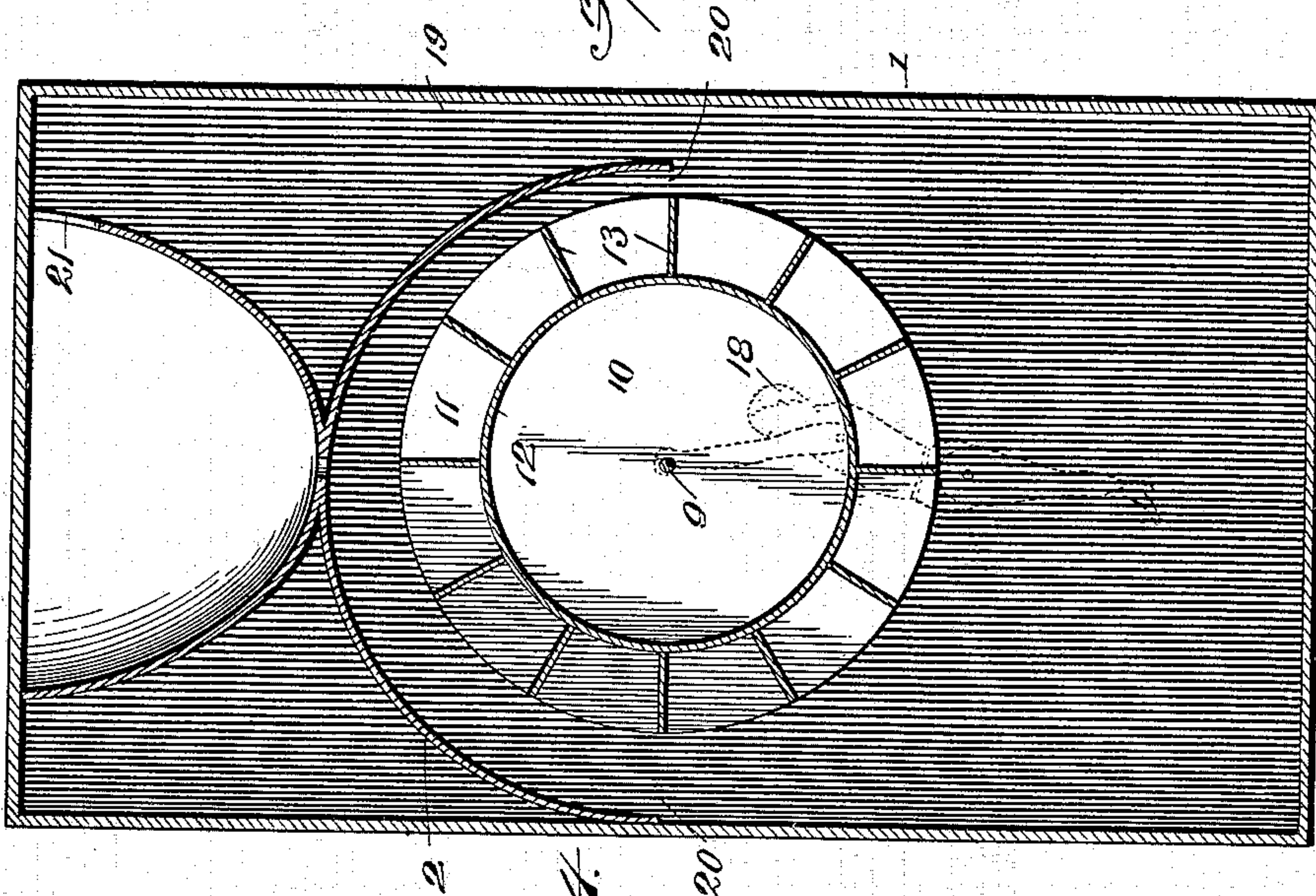
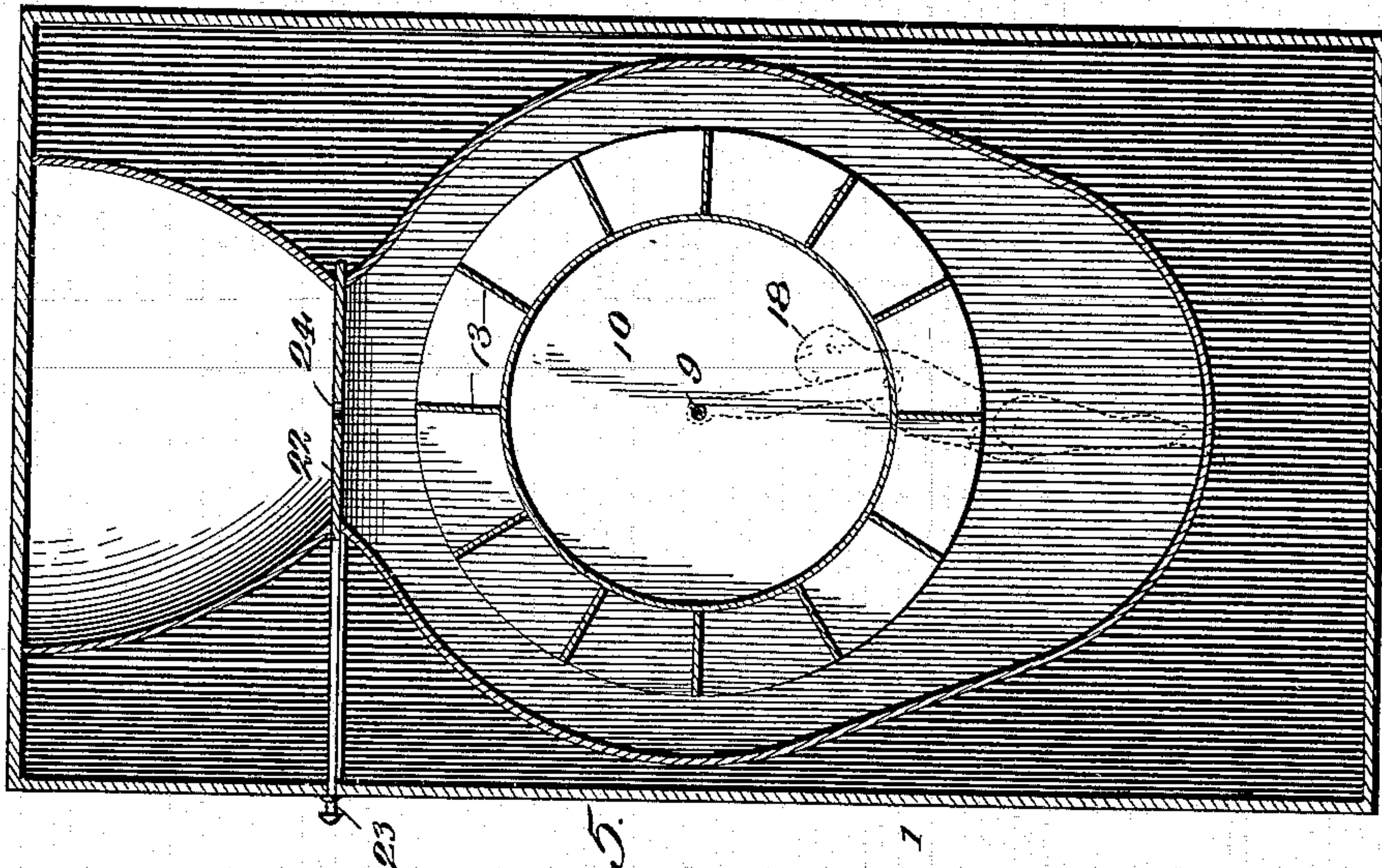
Patented Dec. 6, 1898.

W. H. HYDE.  
AUTOMATIC TOY.

(Application filed Dec. 3, 1897.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WALTER H. HYDE, OF NEW YORK, N. Y., ASSIGNOR TO LEVI H. THOMAS,  
OF SAME PLACE.

## AUTOMATIC TOY.

SPECIFICATION forming part of Letters Patent No. 615,277, dated December 6, 1898.

Application filed December 3, 1897. Serial No. 660,698. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER H. HYDE, a subject of Her Majesty the Queen of Great Britain and Ireland, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Toys; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to toys, the object being to utilize sand as a motive power to drive an overshot wheel and revolve a shaft carrying a toy figure or other device.

A characteristic feature of the invention is the construction and relative arrangement of the wheel and sand-hopper, which permits the shaft to revolve alternately in opposite directions.

The invention will be fully described hereinafter and defined in the appended claims and is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the device. Fig. 2 is a vertical section thereof on the line 2 2 of Fig. 1. Fig. 3 is a view of the wheel detached. Fig. 4 is a front elevation, partly in section, of a modified construction of the invention; and Fig. 5 is a sectional front elevation of another modification.

The reference-numeral 1 indicates a rectangular box inclosing the working parts of the device.

2 designates a circular shell or casing provided at its top and bottom with oppositely-arranged hoppers 3 and 4, to which are connected the discharge ends of supply-hoppers 5 and 6. Between each pair of hoppers 3 and 5 and 4 and 6 is arranged a partition, plug, or block 7, having a central orifice 8, through which sand will pass in a fine stream.

Within the casing 2, upon a shaft 9, is mounted a wheel 10, comprising parallel disks 11 and a rim 12, provided with radial wings or partitions 13. The shaft 9 is supported at

its inner end by a bracket-bearing 14, secured to the back of the box 1, and at its outer end in a bearing 15, formed in a cover-plate 16, secured to the box. The front end 17 of this shaft projects beyond the cover 16 and supports a toy figure 18, which is fixed upon the shaft to turn therewith.

The openings 8 in the partition-blocks of the hoppers are arranged in the vertical plane of the shaft 9, and as the partitions of the wheel all radiate at the same angle the direction of revolution of the wheel is determined by the dropping of the sand upon one or the other side of the buckets formed by the partitions 13. The weight of the toy figure or device 18 to an extent influences the direction of movement of the wheel and shaft, as said toy constitutes a load carried by the shaft and at certain points or times in the revolution of the wheel may serve as the preponderating element which determines the direction of revolution.

The mouths of the hoppers 5 and 6 are closed by the end walls of the box 1, sand having been first supplied to one of said hoppers.

The operation of the toy is obvious from the drawings. The sand falls through the orifice 8 in a fine stream, and thus revolves the wheel 10 and its shaft, causing the toy figure 18 to gyrate and assume various attitudes for the amusement of children or others. The sand falls on one side or the other of the line marking the vertical plane of the shaft 9, and hence drives the wheel in opposite directions. This feature of the operation of the device is important, as it varies the movement of the toy 18 and avoids the monotony of a continuous rotary movement in one direction.

It will be understood that the direction of rotation of the wheel is determined by the contact of the sand with one or the other side of the partitions or wings. The latter being in radial planes with relation to the axis and the axis being in the vertical plane of the discharge-orifice from the hopper it is clear that the sand may fall against either side of any one of the partitions, accordingly as the latter happen to incline in one or the



other direction as they are beneath the stream of sand. The weight of the toy figure also contributes to vary the movement of the wheel, as above described.

5 It will be apparent that the device may be inverted end for end, and while I prefer the double-ended construction shown it is obvious that a single hopper might be used and the wheel revolved therefrom, as illustrated  
10 in Figs. 4 and 5.

In the form shown in Fig. 4 spaces 19 are left between the casing 2 and the sides of the box 1, and openings 20 are provided in the casing 2 to permit the sand to be returned to  
15 the hopper, the latter having a slot 21 at one side near its upper end for this purpose.

The modification shown in Fig. 5 differs from that illustrated in Fig. 4 in the means provided for the return of the sand to its hopper.  
20 In this instance the partition-block between the hoppers is omitted and the passage between the hoppers is closed by a slide-valve 22, provided with a handle 23 and having a contracted opening 24 for the escape of sand.

25 After the sand has all escaped the valve is pulled out by its handle to open the hopper for the return of the sand. The opening 21 of Fig. 4 being unnecessary in the construction shown in Fig. 5 is omitted.

30 The wheel and hoppers are preferably concealed by the cover-plate 16, leaving only the figure 18 and the front end of the shaft visible, and an outer transparent cover 25 is secured upon the box 1.

35 Any suitable ornamentation or finish may be applied to either the inner cover 16 or the outer glass cover 25. In Fig. 1 I have shown an ornamental drapery 26 applied to the inner surface of the glass cover.

40 Instead of the single toy figure 18 a plurality of toys or other devices may be secured upon the shaft, and I would have it understood that the invention is not restricted to any specific device or attachment for the

shaft, but includes any desired attachment 45 adapted to be revolved by the shaft.

I claim—

1. A toy comprising a sand-box, an overshoot wheel, and means for revolving said wheel alternately and irregularly in opposite 50 directions.

2. A toy comprising a sand-hopper and an overshoot wheel mounted upon a shaft below said hopper, the discharge-orifice of said hopper being in the vertical plane of the shaft of 55 the wheel.

3. A toy comprising a circular casing, provided at top and bottom with hoppers, supply-hoppers joining the hoppers of the casing, an overshoot wheel supported upon a shaft 60 within said casing, a figure supported upon said shaft, the discharge-orifices of said hoppers being in the vertical plane of said shaft.

4. A toy comprising a sand-hopper, an overshoot wheel provided with radially-arranged 65 wings or partitions, a shaft upon which said wheel is mounted, and a device carried by said shaft.

5. The combination with the casing and hoppers, of an overshoot wheel having radi- 70 ally-projecting wings or partitions, a shaft upon which the wheel is mounted, a rotating device carried by said shaft, the discharge-orifice of said hopper being in the vertical plane of said shaft. 75

6. The combination with a sand-hopper and overshoot wheel mounted on a shaft, of a slide-valve provided with an opening for the escape of sand from the hopper, said opening being in the vertical plane of the shaft. 80

Signed at New York city, in the county of New York and State of New York, this 2d day of December, A. D. 1897.

WALTER H. HYDE.

Witnesses:

HERMAN GUSTOW,  
GEORGE ISAKSEN.