

(No Model.)

2 Sheets—Sheet 1.

G. W. PELTON.
PROPELLER WHEEL.

No. 436,802.

Patented Sept. 23, 1890.

Fig. 2.

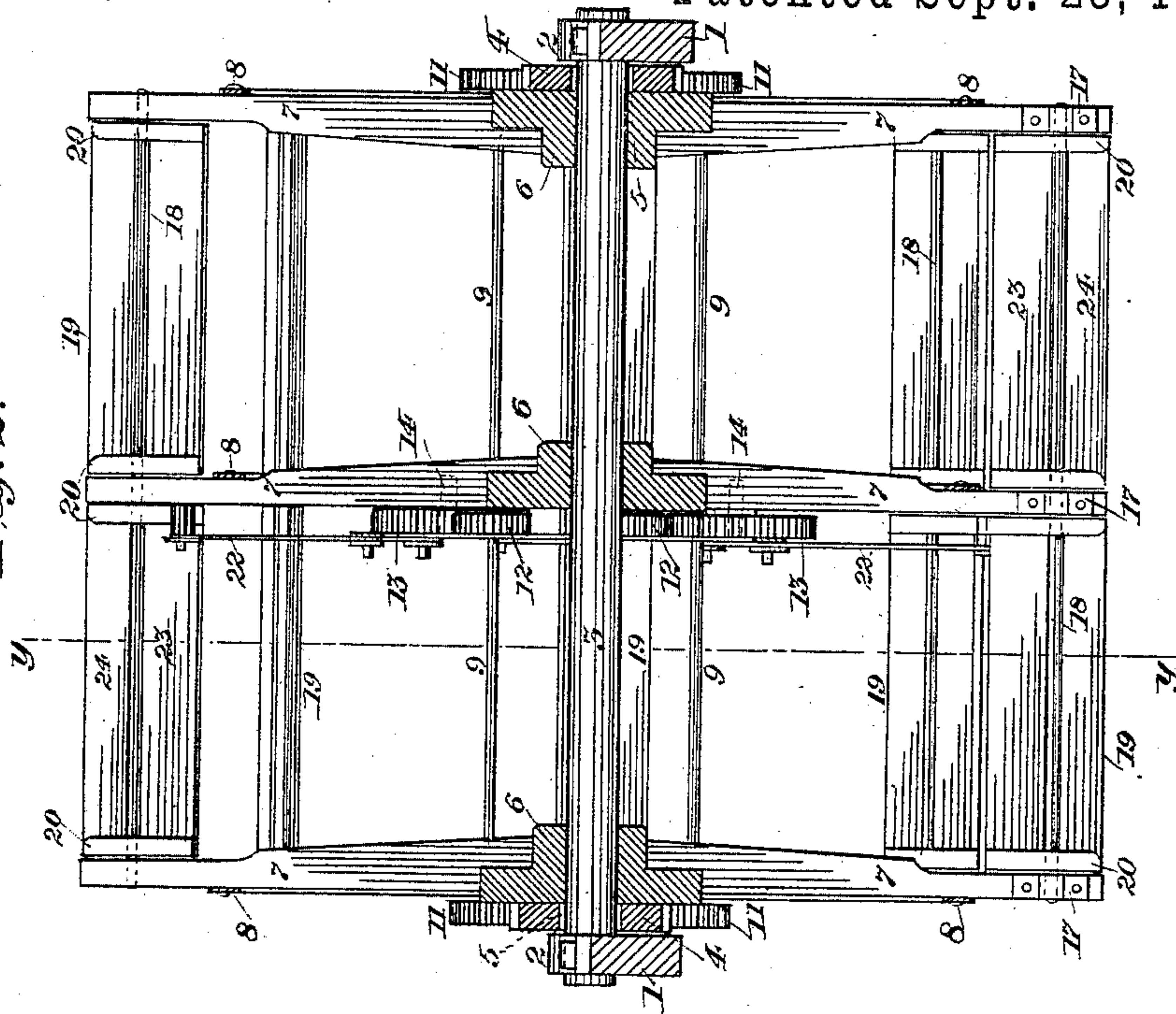
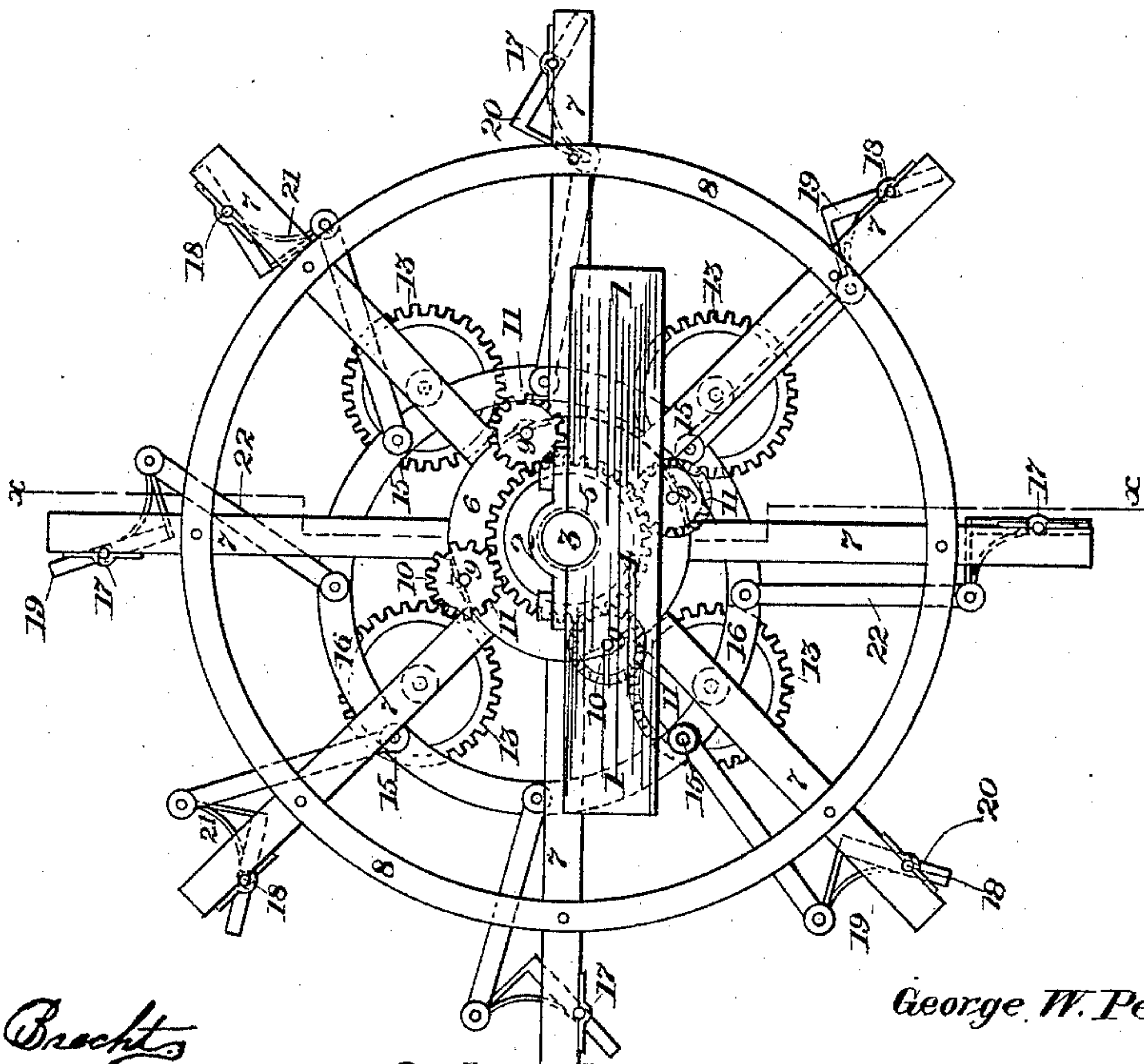


Fig. 1.



Witnesses

J. C. Crockett
Wm. Bagger

By his Attorneys.

Inventor

George W. Pelton

C. A. Snow & Co.

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Fig. 3.

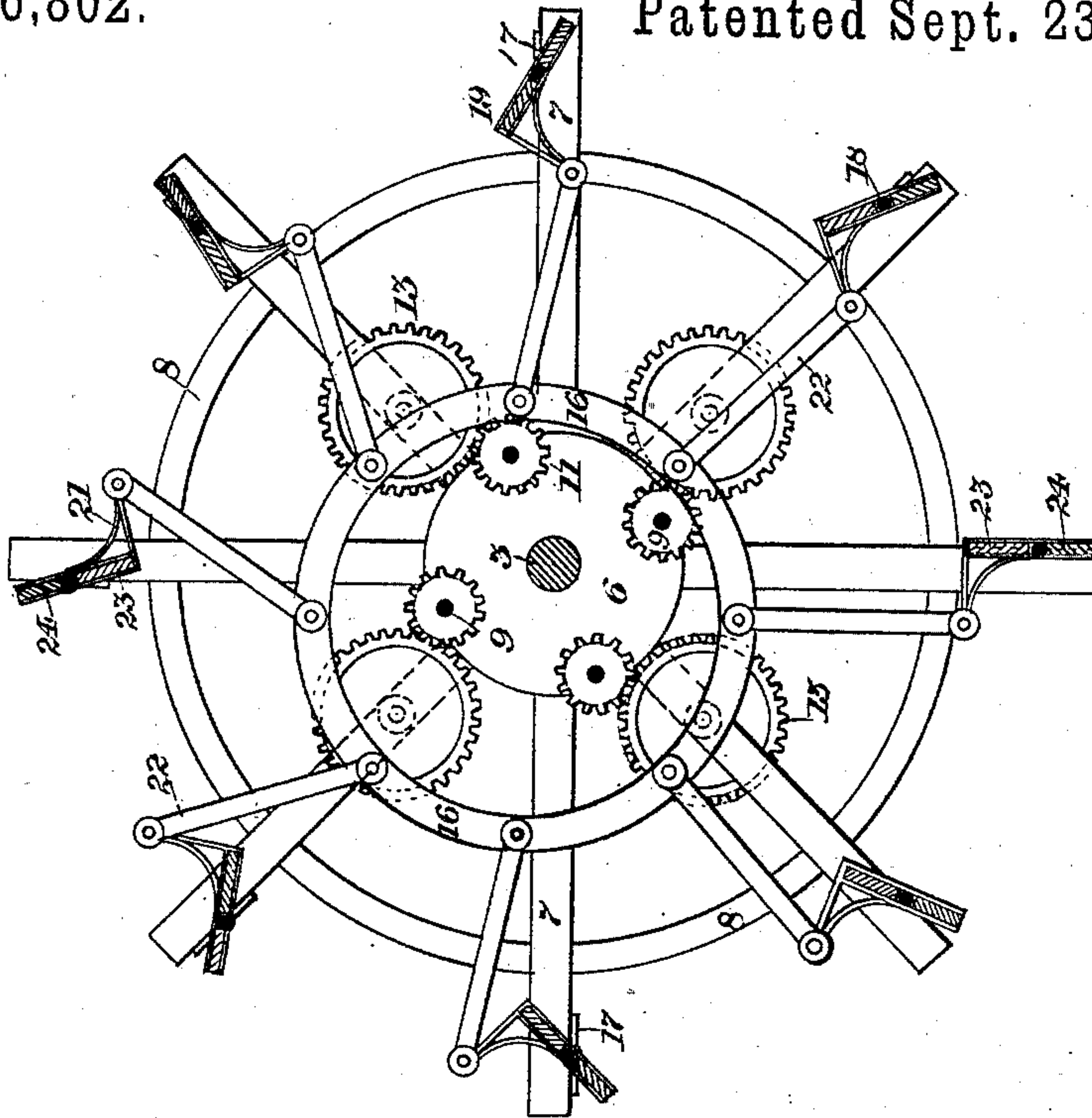
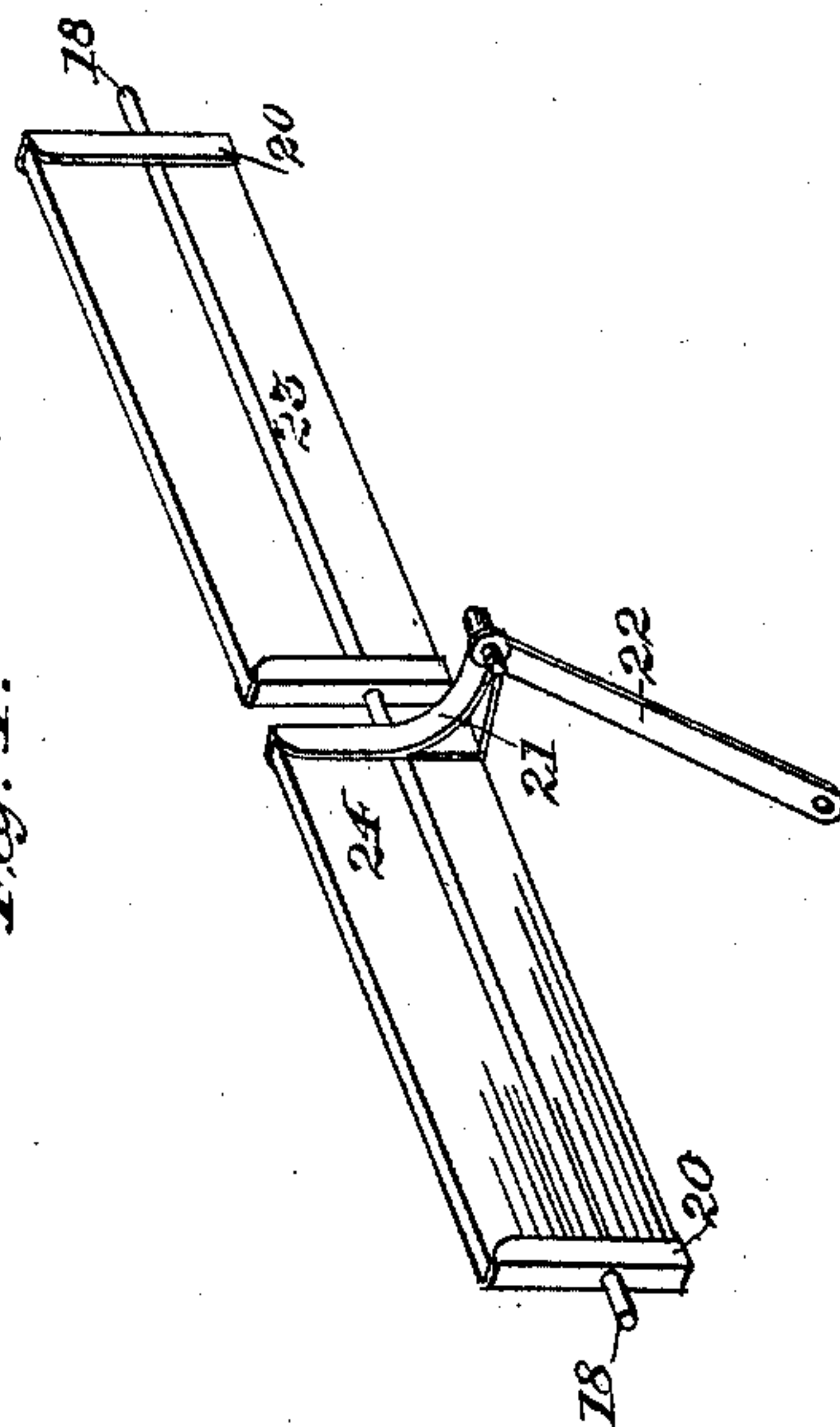


Fig. 4.



Witnesses,

T. C. Brecht.

Wm. Bagger.

By his Attorneys,

Inventor

George W. Pelton

C. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE W. PELTON, OF MUSCATINE, IOWA.

PROPELLER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 436,802, dated September 23, 1890.

Application filed January 28, 1890. Serial No. 338,428. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PELTON, a citizen of the United States, residing at Muscatine, in the county of Muscatine and State of Iowa, have invented a new and useful Propeller-Wheel, of which the following is a specification.

This invention relates to that class of propeller-wheels in which the blades or buckets have what is known as a "feathering motion;" and it has for its object to construct a wheel of this class which shall be simple, durable, and efficient in operation, and which, in case of injury to any of its parts, shall be readily accessible for the purpose of making the necessary repairs.

The invention, which is equally adapted to stern and to side paddle-wheels, consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view of a paddle-wheel or propeller-wheel embodying my improvements. Fig. 2 is a longitudinal vertical sectional view of the same, taken on the line $x x$ in Fig. 1. Fig. 3 is a vertical sectional view taken on the line $y y$ in Fig. 2. Fig. 4 is a perspective view of one of the paddles and a portion of the operating mechanism.

Like numerals of reference indicate like parts in all the figures.

Referring to the drawings, 1 1 designate the timbers having the boxes or bearings 2 2, in which the central or main shaft 3 of my improved propeller-wheel is journaled. Permanently secured to the inner sides of the timbers 1 and concentrically with the bearings 2 are the spur-wheels 4, which are provided with central openings 5, through which the ends of the shaft 3 extend. The shaft 3 is provided with hubs 6, of which there may be two or more, according to the size of the wheel. Two of these hubs are located at the ends of the shaft adjacent to the spur-wheels 4, and the remaining hubs are to be located equidistantly at intermediate points. In the drawings hereto annexed three such hubs have been shown, one of them being located centrally upon the shaft. This will probably be the number of hubs preferably employed in

a wheel of ordinary or moderate size. The hubs 6 are provided each with a series of radiating arms or spokes 7, the number of which corresponds with the number of paddles which it is desired to use. In the drawings hereto annexed eight such arms or spokes have been shown as radiating from each of the hubs. The said arms or spokes may be re-enforced and strengthened by means of circular rings or bands 8.

9 9 designate the series of shafts, four in number, which are journaled in boxes or bearings 10, which are arranged in the angles between the radiating arms or spokes 7. The shafts 9 are provided at their ends with pinions 11, meshing with the fixed spur-wheels 4 upon the timbers 1. Suitably mounted at intermediate points upon the shafts 9, preferably adjacent to the central hub 6, are pinions 12, that mesh with spur-wheels 13, which are journaled upon wrist-pins or stub-axes 14 upon the arms or spokes 7 radiating from the hub, adjacent to which the pinions 12 are mounted. The spur-wheels 13 are provided with wrist-pins 15, upon which is mounted a ring 16, the position of which is eccentric with relation to the hub 6. It will be seen that by the action of the spur-wheels 13, to which it is connected, a rotary movement will be communicated to the said ring 16, eccentrically with relation to the axis of the wheel.

At the outer ends of the arms or spokes 7 boxes or bearings 17 are provided for the transverse rock-shafts 18, carrying the paddles 19. Of these paddles one or more will be mounted upon each shaft, according to the number of hubs. The paddles are constructed each of two separate pieces located on opposite sides of the shaft 18 and connected with the latter by means of caps or clamps 20, which are secured in any suitable manner upon the said shafts. One of the clamps or clasps 20 of each of the transverse shafts is provided with an arm or bracket 21 extending at right angles thereto. The outer end of said bracket is connected by a pivoted rod or pitman 22 with the ring 16. The parts or sections 23 and 24 of which each paddle is composed are of unequal size or width, the lower one (by which is meant the one which first enters the water) being smaller or narrower than the other. This is for the purpose of lessening the re-

sistance and to render breakage less likely to occur by the forcible contact of the paddles with the water.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. The general construction of my improved paddle-wheel is very simple and inexpensive and of such a nature as to insure lightness and strength. It will be obvious that the feathering mechanism, comprising the pinions 12, spur-wheels 13, ring 16, brackets 21, and pitmen 22, may be duplicated at the ends of the wheel, if it shall be thought desirable or advisable to do so. I also reserve the right to any changes or modifications in the construction and arrangement of details which may be resorted to without departing from the spirit of my invention. Having thus described my invention, I claim—

1. The combination of the supporting-timbers, the spur-wheels mounted permanently upon the inner sides of the same, the main shaft extending through said spur-wheels and journaled in boxes upon the said supporting-timbers, the hubs mounted upon said shaft and having radiating arms or spokes, the shafts journaled at the outer ends of said spokes and carrying the paddles, and pinions, spur-wheels, and pitmen for transmitting motion from the said spur-wheels to the said paddles, for the purpose of feathering the latter, substantially as set forth.
2. The combination of the supporting-timbers, the main shaft journaled upon the same, the stationary spur-wheels attached perma-

nently to the supporting-timbers concentrically with the main shaft, the hubs mounted upon the latter and having radiating spokes, the shafts journaled at the outer ends of the latter and carrying the paddles, the shafts journaled between the spokes of the wheel and having pinions meshing with the stationary spur-wheels, the spur-wheels journaled upon the spokes and meshing with pinions mounted intermediately upon the said shafts, the ring mounted upon wrist-pins extending from the said spur-wheels eccentrically to the main shaft, and pitmen connecting said ring with brackets extending from the paddles at right angles to the latter, substantially as set forth.

3. The combination of the main shaft, the hubs having the radiating arms or spokes, the shafts journaled at the outer ends of the latter and carrying the paddles, spur-wheels mounted upon the said spokes, a ring mounted pivotally upon the said spur-wheels eccentrically to the main shaft, means for transmitting motion to the said spur-wheels from stationary spur-wheels mounted upon the supporting-frame of the wheel, and pitmen connecting the said eccentric-ring with the paddles, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE W. PELTON.

Witnesses:

FRANK KILLMER,
LOUIS H. KERN.