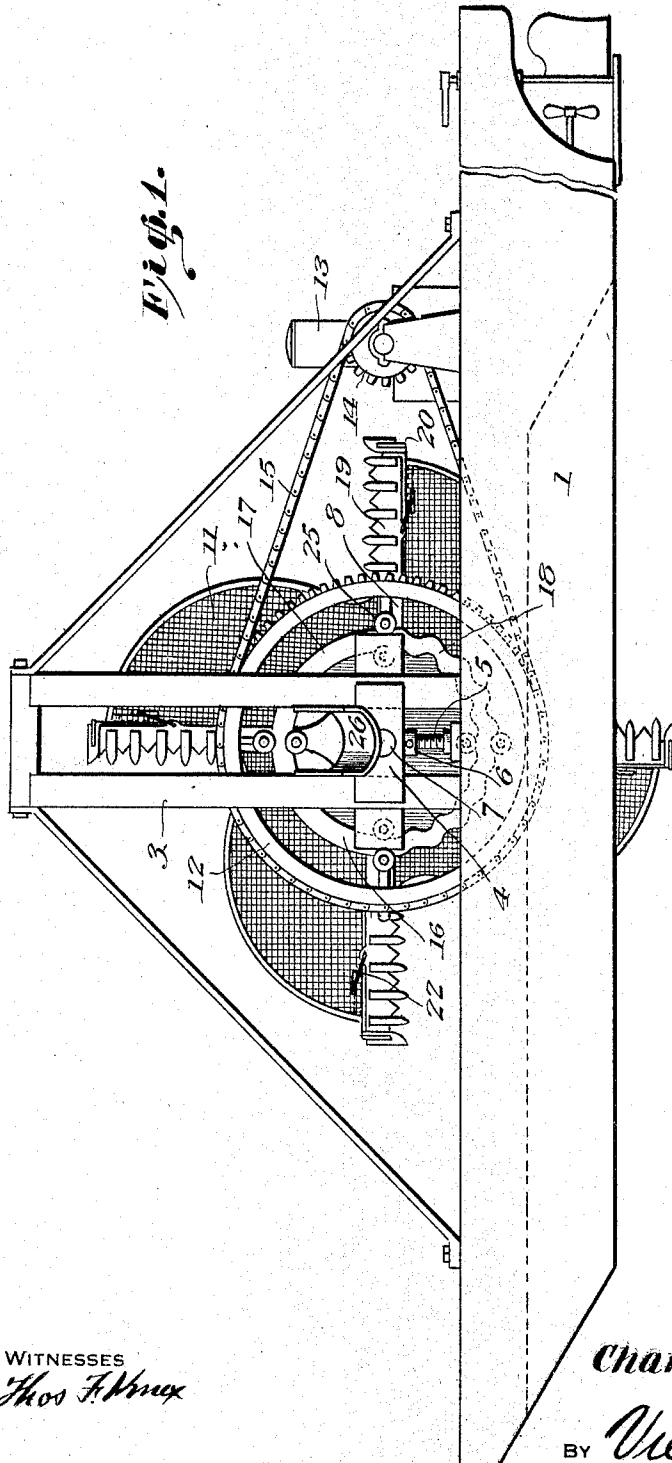


1,237,313.

C. L. DONEY.
KELP HARVESTER.
APPLICATION FILED MAR. 6, 1917.

Patented Aug. 21, 1917.
3 SHEETS—SHEET 1.



WITNESSES
Thos. F. Wmex

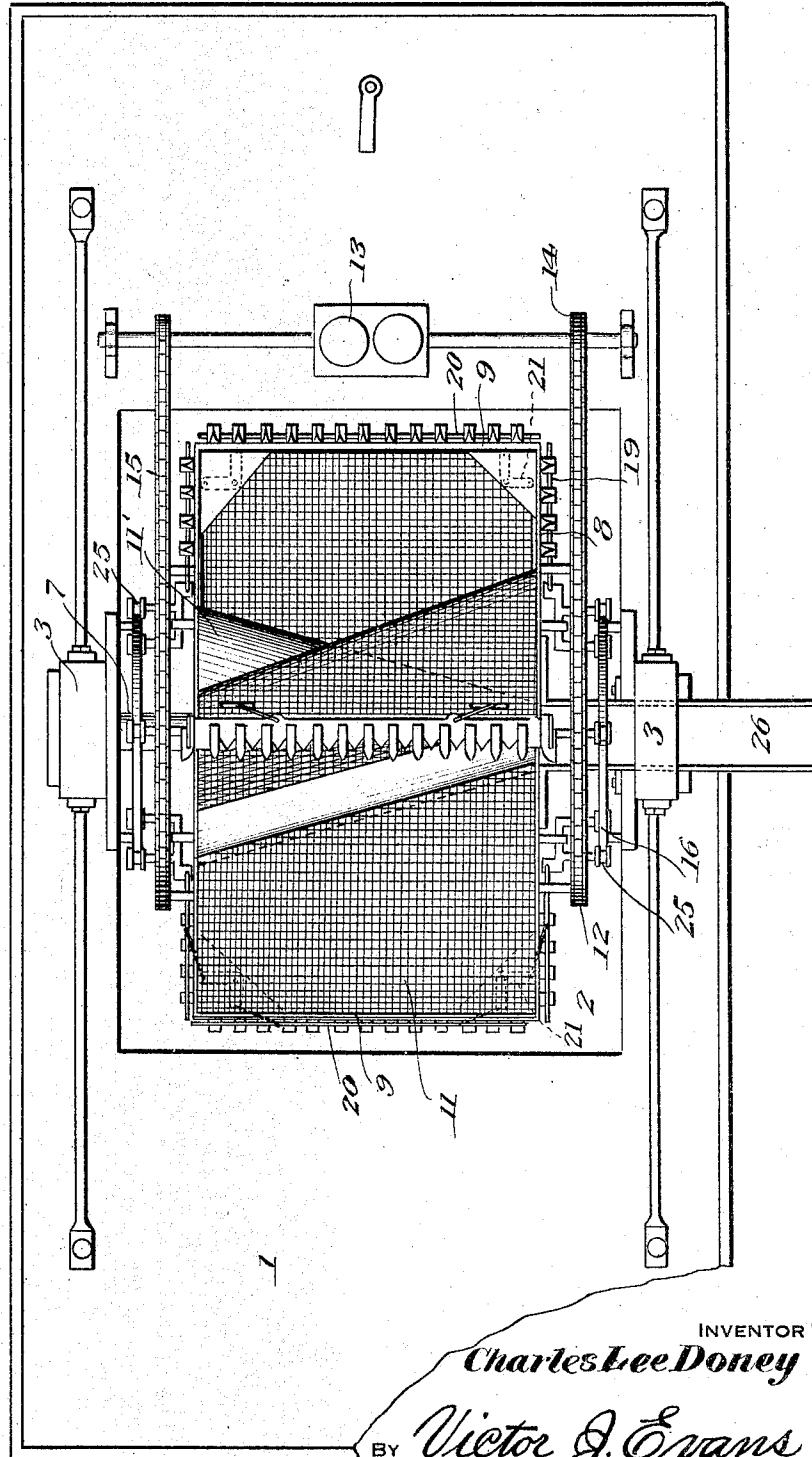
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Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 4.

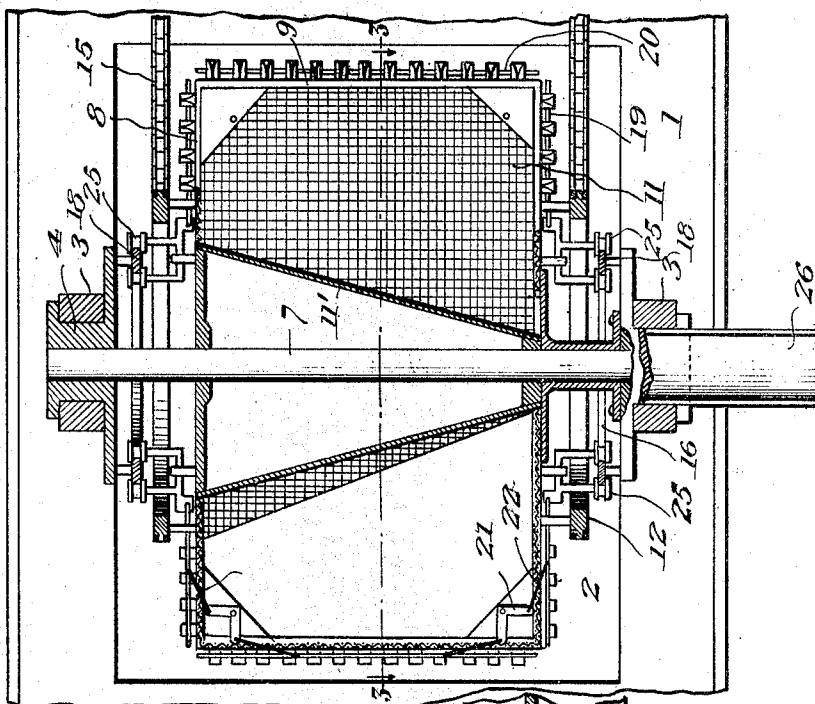
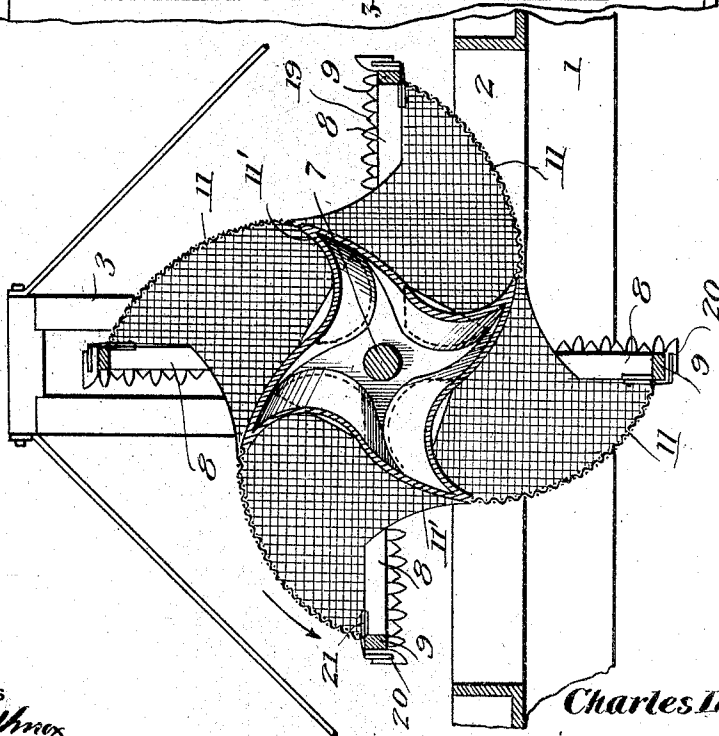


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES L. DONEY, OF CHULA VISTA, CALIFORNIA, ASSIGNOR OF ONE-THIRD TO
ALEXANDER HENRY McCARTNEY, OF SAN DIEGO, CALIFORNIA.

KELP-HARVESTER.

1,237,313.

Specification of Letters Patent.

Patented Aug. 21, 1917.

Application filed March 6, 1917. Serial No. 152,678.

To all whom it may concern:

Be it known that I, CHARLES L. DONEY, a citizen of the United States of America, residing at Chula Vista, in the county of San Diego and State of California, have invented new and useful Improvements in Kelp-Harvesters, of which the following is a specification.

This invention relates to kelp harvesters and it consists in the novel features hereinafter described and claimed.

An object of the invention is to provide an apparatus of the character stated which may be operated in water for harvesting the kelp in a manner to offer minimum resistance and therefore requiring minimum power for operating the same.

A further object of the invention is to provide such an apparatus which will harvest a maximum quantity of kelp without loss thereof and which requires a minimum number of operators during the harvesting.

With these objects in view the harvester comprises a scow having an opening at the intermediate portion thereof and guides at the sides thereof. Blocks are adjustably mounted in the guides and a shaft is journaled in the blocks. Wheels are mounted upon the shaft and carry gatherers and cutting apparatus. Suitable means are provided for operating the cutting apparatus whereby the kelp as it is cut is deposited in the gatherers. The gatherers elevate the kelp and deposit the same in chutes from which it may gravitate into the body of the scow or receptacle provided for its reception.

In the accompanying drawings:—

Figure 1 is a side elevation of the kelp harvester;

Fig. 2 is a top plan view of the same;

Fig. 3 is a fragmentary vertical sectional view of the same cut on the line 3—3 of Fig. 4;

Fig. 4 is a similar horizontal sectional view.

The harvester comprises a scow 1 provided at a point between its ends with an opening 2. Vertically disposed guides 3 are mounted at the sides of the said scow and blocks 4 are mounted for movement between the said guides 3. Jack screws 5 engage the blocks 4 and are threaded through nuts 6 which are attached to the fixed parts of the shaft. By turning the

said jack screws the blocks 4 may be raised and lowered between the guides 3. A shaft 7 is journaled for rotation in the blocks 4 and carries at its ends radially disposed spokes 8. Inwardly disposed arms 9 are carried at the outer ends of the spokes 8. Concave gatherers 11 of foraminous material are connected with the spokes 8. Sprocket wheels 12 are mounted upon the shaft 7 and an engine 13 is mounted upon the scow 1. Sprocket wheels 14 are mounted upon the shaft of the engine 13 and sprocket chains 15 are trained around the sprocket wheels 14 and 12 and serve as means for transmitting rotary movement from the shaft of the engine to the shaft 7. Links may be added to or removed from the chains 15 when the jack screws 5 are operated.

Rings 16 are fixed to the blocks 4 and the said rings include upper arcuate portions 17 and lower waved portions 18.

Knife bars 19 are mounted for movement on the spokes 8 and knife bars 20 are mounted for movement along the arms 9. Bell crank levers 21 are pivoted adjacent the adjoining ends of the spokes 8 and arms 9 and the said bell crank levers are provided with links 22 connected with the knife bars 19 and 20. The bars 19 are provided with extensions which carry journaled pulleys 25 which lie at the opposite sides of the rings 16. A chute 26 is mounted on one of the blocks 4 and extends in an inclined position over the side edge of the scow 1.

The operation of the harvester is as follows:

The scow 1 may be moved through the water by any suitable means and simultaneously the shaft 7 is rotated from the engine 13 as hereinafter described. As the spokes 8 are carried around the rings 16 the rollers 25 at the inner ends of the bars 19 are moved around the said rings. When the pulleys 25 are moving along the upper arcuate portion 17 of the rings the bars 19 do not move longitudinally but when the rollers 25 move along the waved portions 18 of the said rings the bars 19 are moved longitudinally whereby they are reciprocated. Inasmuch as these bars are then below the surface of the water they encounter the kelp and cut the same. As the bars 19 reciprocate the bell crank levers 21 are turned

upon their pivots whereby the knife bars 20 are reciprocated and the blades carried by the said bars encounter the kelp and cut the same substantially horizontally.

5 The kelp which is thus cut is caught by the gatherers 11 and elevated above the surface of the water. As the gatherers pass over the shaft 7 the kelp falls upon the closed inclined portions 11' and slides down into
10 the chute 26 and over the side of the scow.

From the foregoing description taken in conjunction with the accompanying drawing, it will be seen that a kelp harvester of simple and durable structure is provided
15 and that the same may be economically used for efficiently harvesting kelp or other vegetable matter which may grow below the surface of a body of water.

Having described the invention what is
20 claimed is:—

1. A harvester comprising a float, a shaft journaled thereon, means for rotating the shaft, spokes carried by the shaft, knife bars slidably mounted upon the spokes,
25 gatherers carried by the spokes and having bottoms inclined from one set of spokes to

the other and means for reciprocating the knife bars as the spokes turn about the shaft.

2. A harvester comprising a scow, a shaft 30 journaled thereon, means for rotating the shaft, spokes carried by the shaft, knife bars mounted for movement along the spokes, means for moving the knife bars, gatherers connected with the spokes and
35 a chute adapted to receive the material from the gatherers as the gatherers move over the shaft.

3. In a harvester a scow, blocks movably mounted thereon, a shaft journaled in the 40 blocks, means for rotating the shaft, spokes carried by the shaft, knife bars movably mounted upon the spokes, rings fixed to the blocks and having upper arcuate portions and lower waved portions, rods connecting 45 the knife bars with the rings and having rollers journaled at the opposite sides of the rings, and gatherers connected with the spokes.

In testimony whereof I affix my signature. 50

CHARLES L. DONEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."