W. L. PARSONS.

REVOLVING FISH SCREEN.

APPLICATION FILED JULY 18, 1913.

1,166,628.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

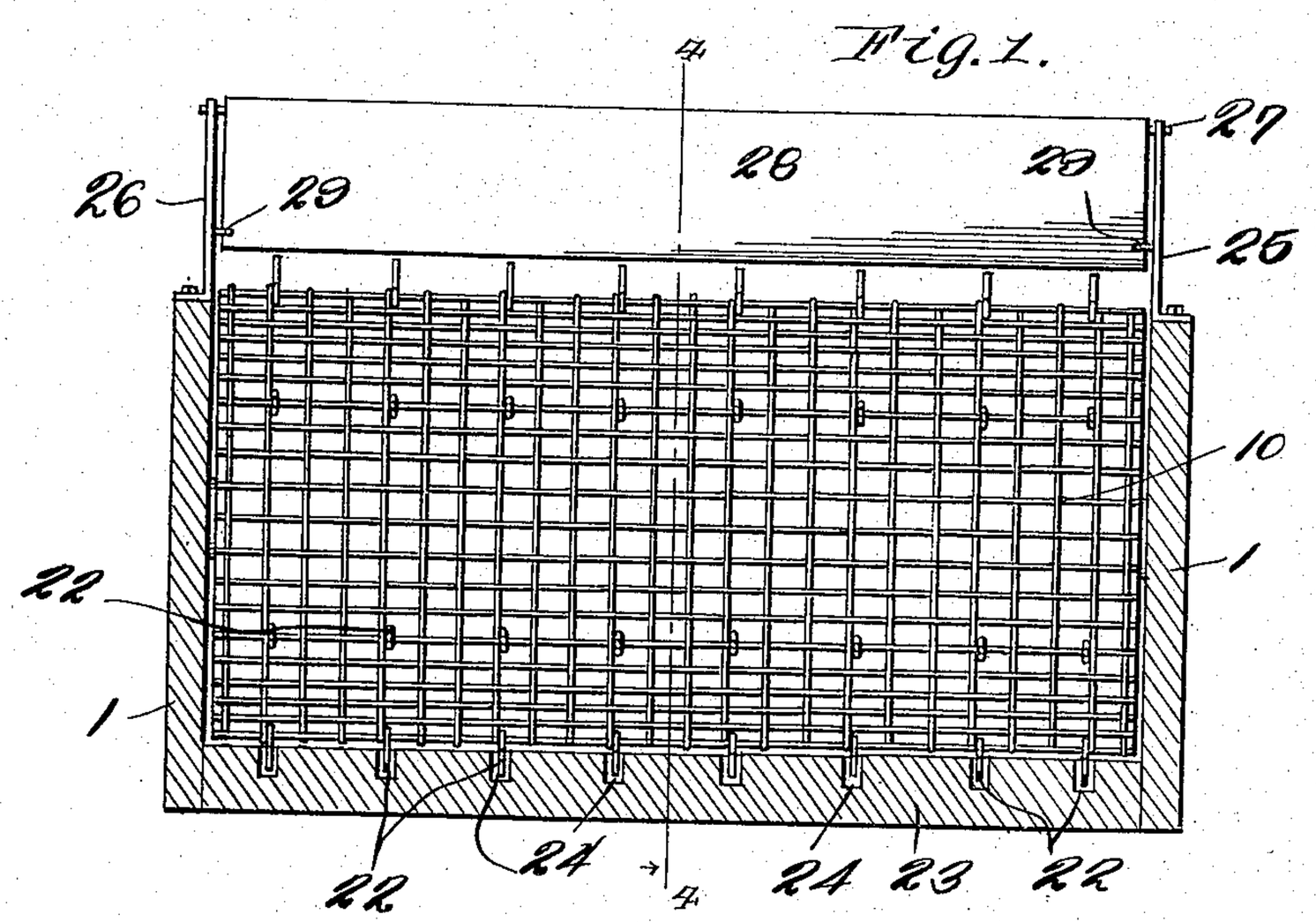
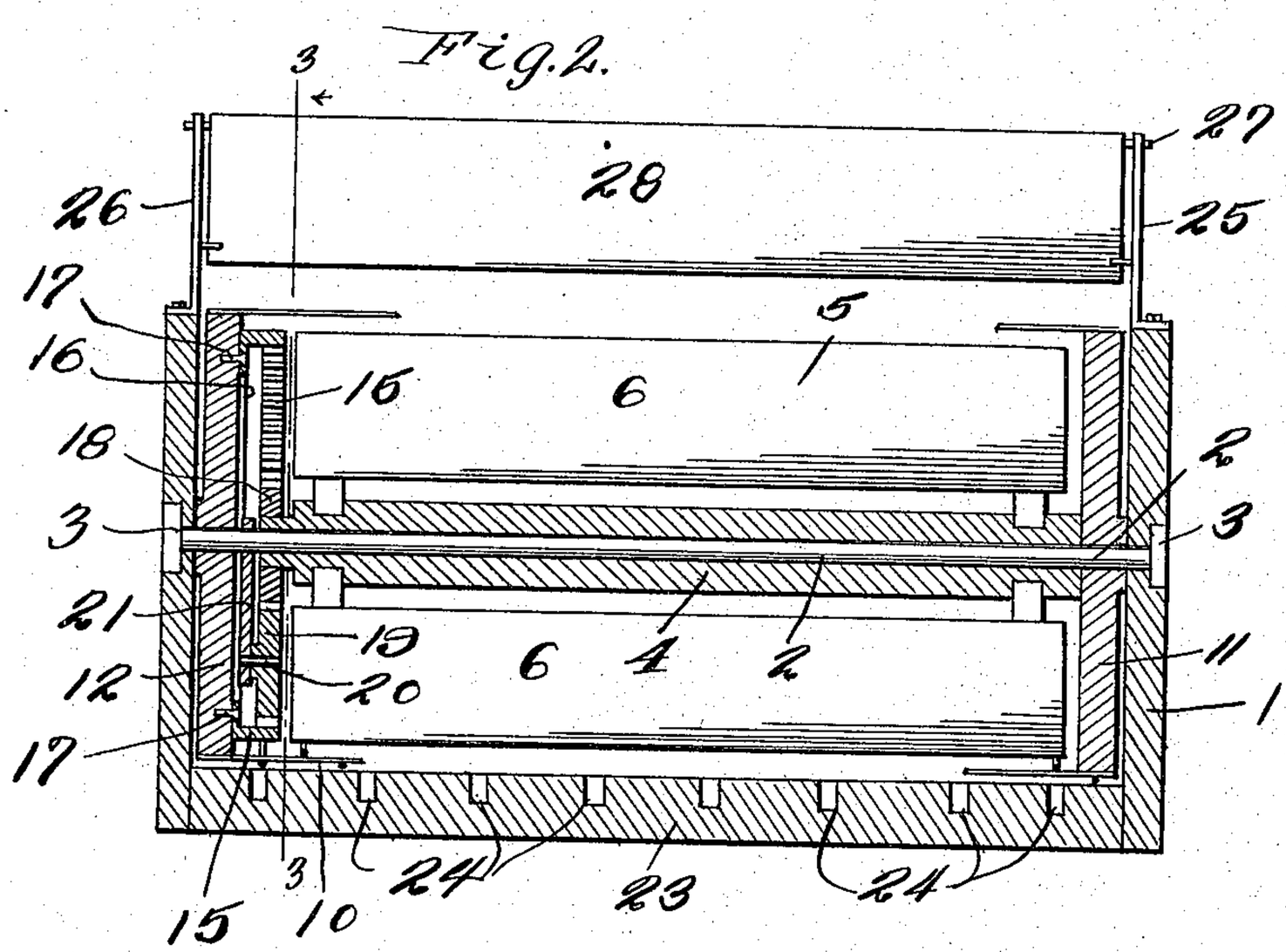


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

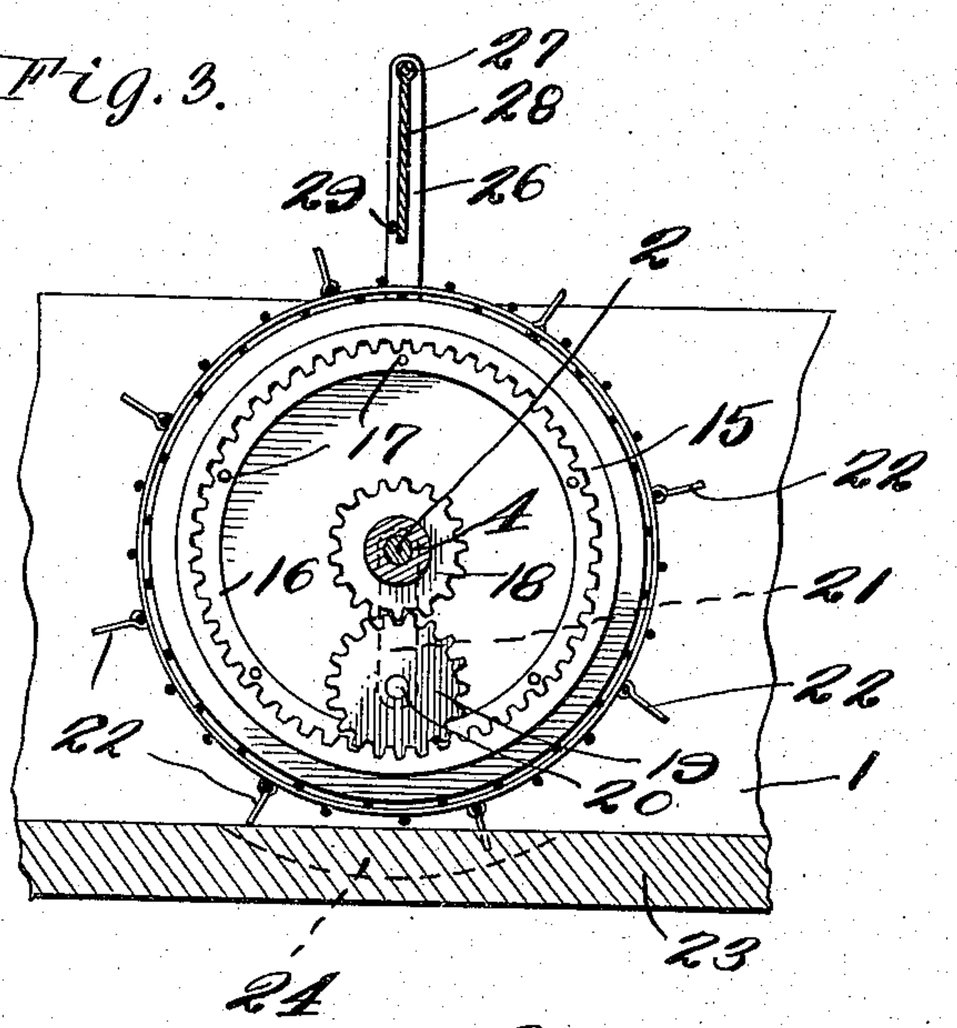
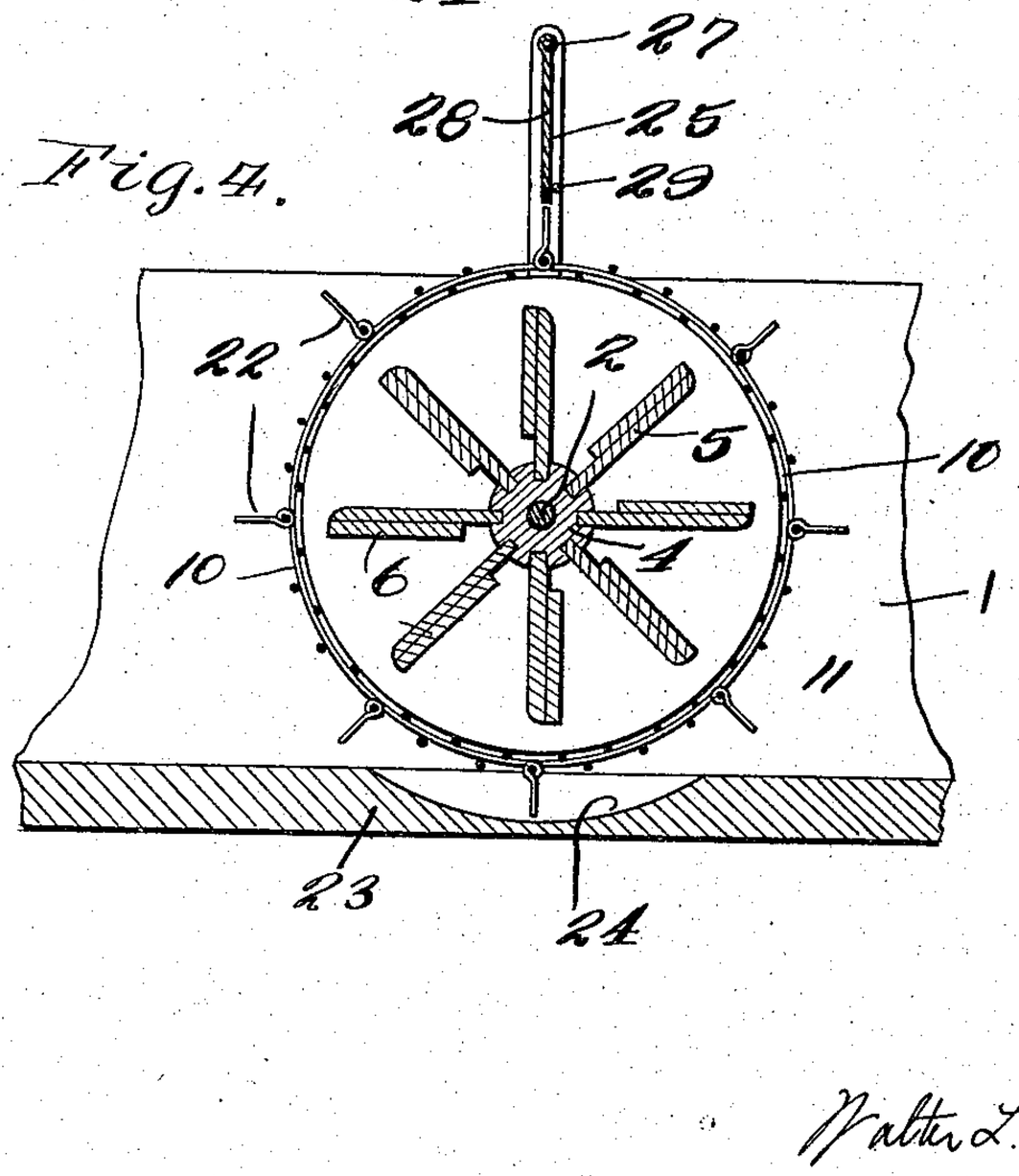


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER L. PARSONS, OF FORT BIDWELL, CALIFORNIA.

REVOLVING FISH-SCREEN.

1,166,628. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed July 18, 1913. Serial No. 779,699.

To all whom it may concern:

Be it known that I, WALTER L. PARSONS, a citizen of the United States, residing at Fort Bidwell, in the county of Modoc and State of California, have invented certain new and useful Improvements in Revolving Fish-Screens, of which the following is a specification.

This invention relates to fish screens such as are used in irrigating ditches, canals, flumes or the like for preventing fish from following the course of the ditch and being lost or stranded upon the land at the termination of the ditch or in any of the small outleading or tributary ditches, and more particularly to a revolving screen of this nature which is furnished power for its rotation by the current of the water passing through the ditch or the like.

An object of this invention is the provision of a fish screen having a water wheel rotatably mounted within the screen and associated therewith so that the rotation of the water wheel, caused by the current of the passing water, will rotate the screen in an opposite direction to the rotation of the wheel.

Another object of this invention is the provision of means carried by the revolving screen for engaging drift wood, weeds or the like and carrying them over the screen thereby preventing the clogging and stopping of the screen.

With the foregoing and other objects in view, this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing this invention in detail, reference will be had to the accompanying drawings wherein like characters of reference designate like or corresponding parts throughout the several views, and in which,

Figure 1 is a side elevation of the improved screen; Fig. 2 is a central sectional view through the revolving screen on the water wheel; Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 2; and Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 1.

Referring more particularly to the drawings, the numeral 1 designates the flumes or in case of irrigating ditches a box which is made so as to fit compactly within the ditch and which has a shaft 2 journaled in bearings 3 carried by the side members of the flume or box 1. The shaft 2 extends longitudinally through the box 1 and has the hub 4 of a water wheel 5 mounted thereupon. The hub 4 of the water wheel 5 is loosely mounted upon the shaft 2 and has a plurality of paddles 6 extending radially therefrom. In Fig. 4 of the drawings the paddles 6 are shown as constructed of outwardly extending cross pieces which have boards or planks connected to their outer ends and extending parallel to the longitudinal length of the hub 4.

The shaft 2 has rotatably mounted thereupon a revolving screen 10 which has its ends 11 and 12 constructed of solid material and its sides of foraminated material such as meshed wire or the like. The revolving screen is revolubly mounted upon the shaft 2 and its ends 11 and 12 are seated so as to be very close to the inner surfaces of the sides of the box 1 so as to prevent fish or the like from passing between the solid ends 11 and 12 of the revolving screen 10 and the sides of the box 1.

The end 12 of the revolving screen 10 has an internal gear 15 securely attached thereto by means of a flange 16 formed integral with the gear and bolts or rivets 17. The corresponding end of the hub 4 has a gear 18 mounted thereupon with which meshes a second gear 19. The gear 19 is mounted upon a pin 20 which pin is carried by the lower end of an arm 21. The arm 21 is loosely mounted about the shaft 2 so as to permit the gear to move about the inner periphery of the internal gear 15 and in this manner the rotation which is imparted to the water wheel 5 by means of the paddles 6 and the current of the water passing through the ditch, will be imparted to the revolving screen 10 and cause the same to rotate in an opposite direction to the rotation of the water wheel 5. It is of course to be understood that the weight of the gear 14 and the resistance of the internal gear after it has been started serve to prevent the movement of the gear 19 about the entire periphery of the internal gear. By this arrangement of the arm supported gear which is permitted to move in an arc incident to the rotation of the screen, the clogging of the teeth upon the gears, as is usually the case in devices of this character, will not

prevent the efficient meshing thereof and greatly facilitates the efficient rotation of the screen.

The revolving screen 10 has a plurality of pins 22 mounted upon its outer periphery which pins are provided for the purpose of engaging drift wood, weeds or the like, which come into the ditch with the traveling of the water, and carry them up and over the screen 10 depositing them on the opposite side of the same and preventing the drift wood and the weeds from clogging the revolving screen 10 and wheel 5 and rendering them inoperative. The bottom 23 of the box 1 is provided with a plurality of cut out portions 24 formed therein which receive the pins 22 during the rotation of the screen 10 and allow the screen to be placed near the upper surface of the bottom 23 so as to prevent small fish from passing thereunder. The ends 11 and 12 of the revolving screen are circular in plan thus forming a cylindrical screen when the meshed wire or other foraminated material is mounted thereupon which cylindrical screen encompasses the water wheel 5.

The sides of the frame 1 have angle irons 25 and 26 connected thereto which have a bar 27 passing from one to the other and rigidly seated in the upper ends of the same. The bar 27 has a plate 28 which is preferably constructed of sheet metal loosely mounted thereupon so as to swing back and forth to permit the drift wood, weeds or the like to be thrown over the revolving screen and it is provided for the purpose of preventing fish from jumping over the revolving screen 10. Pins 29 are carried by the angle irons 25 and 26 and form rests for limiting the swinging movement of the plate 28.

From the foregoing description taken in connection with the accompanying drawings the advantages of construction and of the method of operation of the improved revolving fish screen will be readily apparent to those skilled in the art to which this invention appertains and, while in the foregoing description, the principle of the operation of this invention has been described together with the various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:

1. In a fish screen, a box, a shaft journaled in said box, a water wheel rotatably mounted upon said shaft, a cylindrical screen rotatably mounted upon said shaft and encompassing said water wheel, an internal gear carried on the inner surface of one end of said screen, a gear mounted upon said shaft, an arm loosely mounted upon said shaft and positioned within the screen, a gear carried by the free end of said arm and meshing with said internal gear and said first named gear for operating said screen in an opposite direction to the rotation of said wheel, said arm supported gear being movable in an arc incident to the rotation of said screen for facilitating the effective operation of the screen.

2. In a fish screen, a box, a shaft journaled in said box, a water wheel rotatably mounted upon said shaft, a cylindrical screen rotatably mounted upon said shaft and encompassing said water wheel, an internal gear carried on the inner surface of one end of said screen, a gear mounted upon said shaft, an arm loosely mounted upon said shaft and positioned within the screen, a gear carried by the free end of said arm and meshing with said internal gear in said first named gear for operating said screen in an opposite direction to the rotation of said wheel, said arm supported gear being movable in an arc incident to the rotation of said screen for preventing the teeth of said gears from becoming clogged, means carried by said screen for conveying drift wood or the like thereover, angle irons upon the upper edge of said box, and a plate swingably mounted upon said rod, said plate forming means for preventing fish from jumping over said screen.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER L. PARSONS.

Witnesses:
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