

W. P. BEAVER.

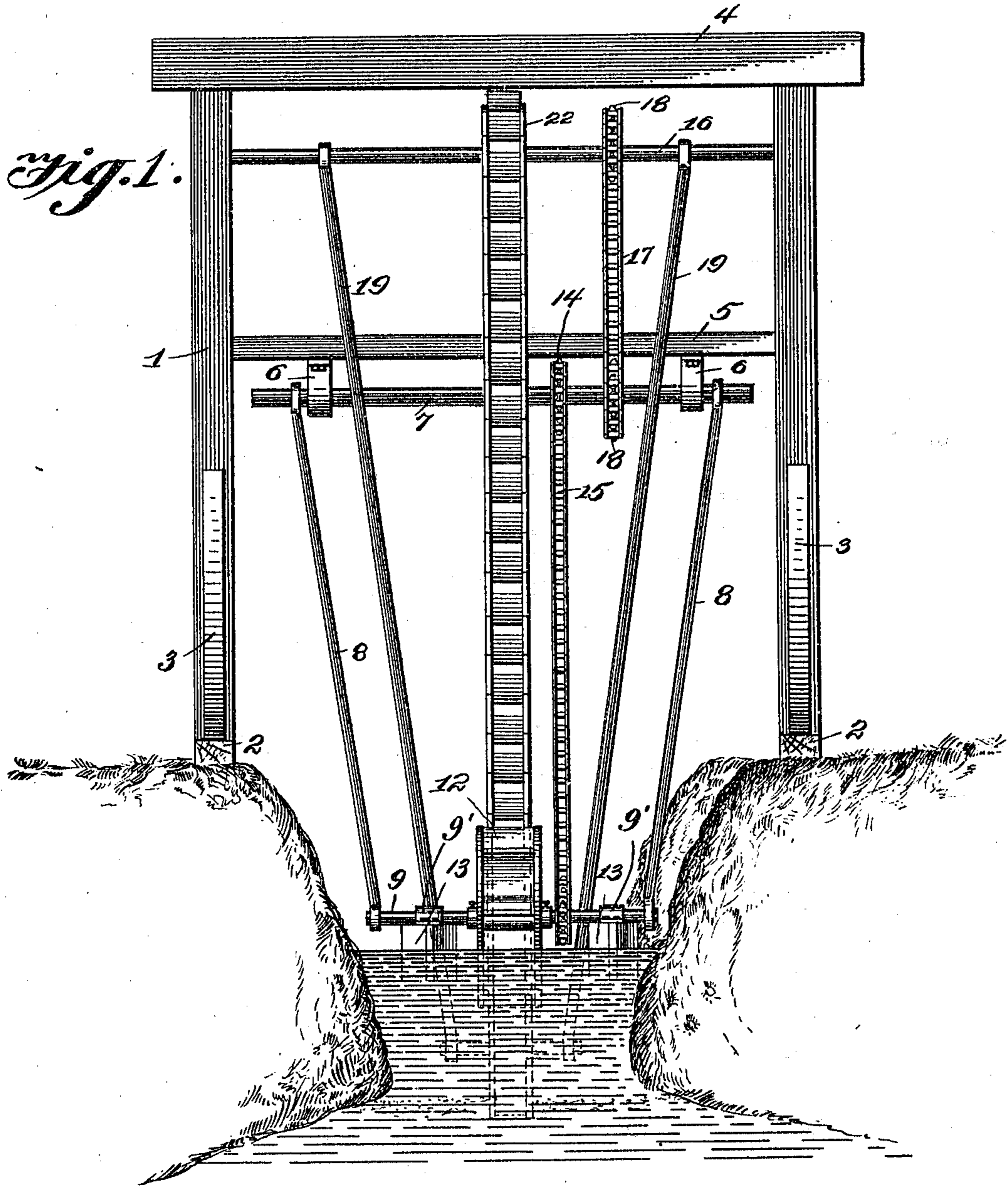
EXCAVATOR.

APPLICATION FILED MAY 14, 1909.

952,974.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.



Inventor

Walter P. Beaver

Witnesses

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D. W. Gould.

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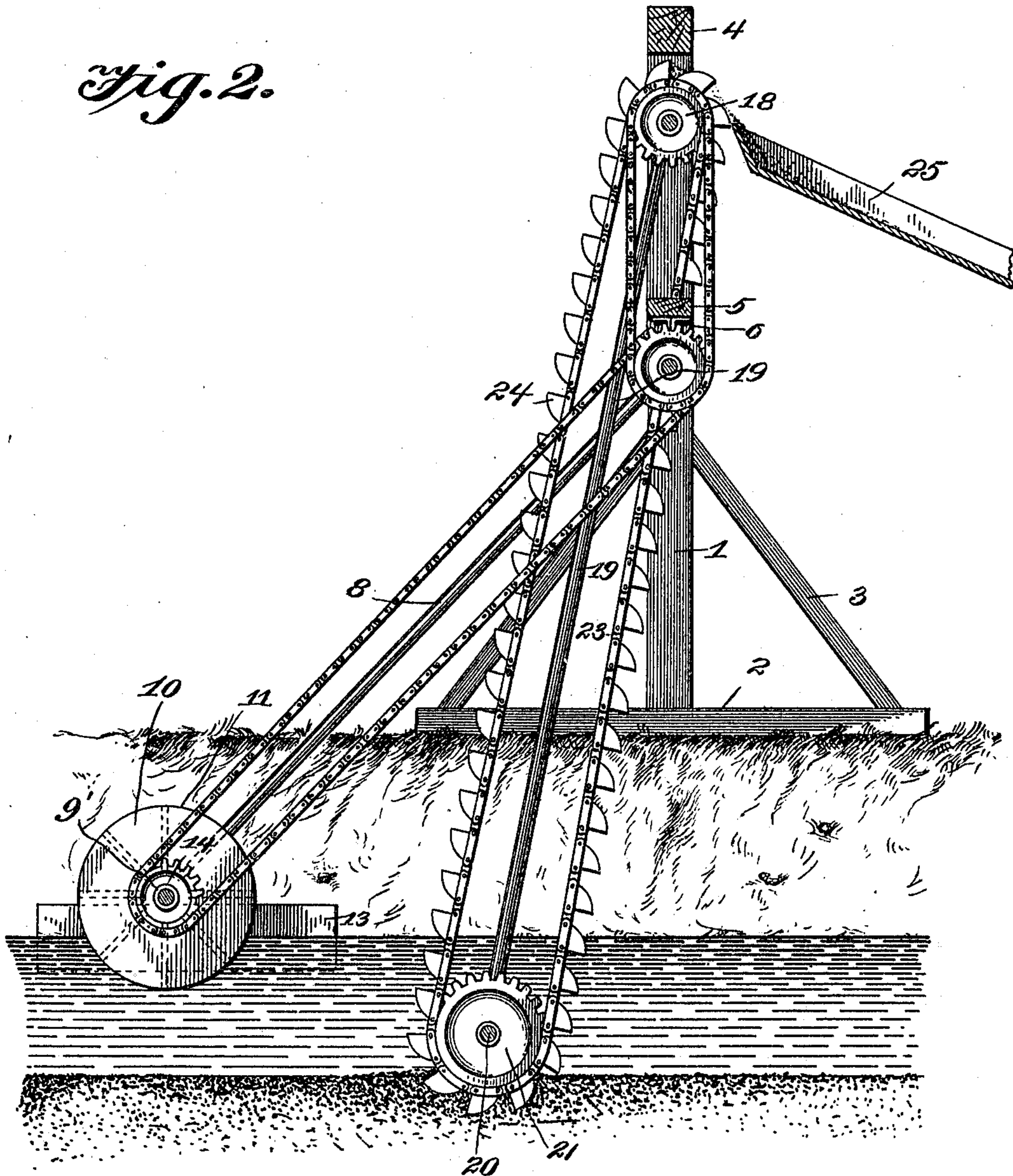
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

WALTER P. BEAVER, OF STATESVILLE, NORTH CAROLINA.

EXCAVATOR.

952,974.

Specification of Letters Patent.

Patented Mar. 22, 1910.

Application filed May 14, 1909. Serial No. 495,868.

To all whom it may concern:

Be it known that I, WALTER PARKS BEAVER, a citizen of the United States, residing at Statesville, in the county of Iredell and State of North Carolina, have invented new and useful Improvements in Excavators, of which the following is a specification.

This invention relates to improvements in excavators, being more particularly directed to a digging machine peculiarly adapted for removing bottom material from narrow waterways as ditches.

The main object of the present invention is the provision of an excavating machine in which the power is derived from the current of the stream with which the excavator is arranged for use, the power element being arranged to automatically accommodate itself to the water level without interfering with the operation of the excavating implements.

The invention will be described in the following specification reference being had to the accompanying drawings in which,

Figure 1 is a front elevation of the improved excavating apparatus showing the same in position for use. Fig. 2 is a vertical section of same.

On referring particularly to the accompanying drawings my improved excavator is supported in a frame work including side uprights 1 extending from bottom cross bars or supports 2 and braced by diagonal brace bars 3 rising from the cross bars. The side frames are designed to be placed upon opposing banks of a waterway such as a ditch, and in use are connected at their upper ends by a transverse member 4, and are further connected at a point about midway their height by an intermediate bar 5. Bearings 6 secured to the under side of the intermediate bar 5 support a drive shaft 7, and rods 8 are revolvably mounted at their upper ends upon the drive shaft beyond the respective bearings. The lower or opposite ends of the supporting rods 8 are connected to a power shaft 9, on which is secured at a point about central of its length a water wheel 10, preferably comprising the usual spaced disks 11 connected by radially arranged blades 12 whereby the current of the waterway is adapted to revolve the wheel and thereby the power shaft 9. Floats 13 are also connected to the power shaft, being preferably provided with bearings 9' in which the shaft rotates. These floats are

so arranged that they will hold the power wheel submerged a proper depth in the stream without regard to the level of the water in the runway, it being understood by the connection of the supporting rods 8 on the drive shaft 7, the power shaft and connected parts are permitted such independent movement as is essential to maintain the power wheel submerged without regard to the level of the water.

Mounted upon the drive shaft 7 and the power shaft 9 are sprocket wheels 14, and a sprocket chain 15 operatively connects said wheels whereby to transmit motion from the power shaft to the drive shaft.

A drive shaft 16 is mounted in the uprights 1 immediately adjacent the cross bar 4, and this shaft is operated from the drive shaft through the medium of a sprocket chain 17 engaging sprocket wheels 18 secured upon the respective shafts, as seen in Fig. 2.

Rods 19 are rotatably mounted upon the driven shaft 16, and at their lower ends support a shaft 20, on which is mounted a sprocket wheel 21. A cooperating sprocket wheel 22 is secured upon the driven shaft 16, and a chain carrying a series of buckets 24 is designed for travel over the sprockets 21 and 22. Supported from the main frame at a point contiguous the discharge point of the buckets I arrange a trough 25 to deliver the material beyond the waterway. The rods 19 converge toward their lower ends so that the sprocket 21 is arranged centrally between the side frames so that the buckets operate centrally between said side frames.

In use the current of the stream operates to drive the water wheel 10 and through the medium of the sprocket chains 15 and 17 to drive the bucket chain and thereby excavate the material in the bottom of the waterway. As the power wheel is movably supported with relation to the main frame, it is obvious that it will rise and fall in accordance with the level of the waterway without in any manner affecting the operation of the device. Furthermore the excavating portion of the apparatus is also movably mounted with relation to the main frame and hence it will also accommodate itself to the level of the bottom of the waterway. Therefore the device will automatically maintain an effective operation until the device has excavated to the full limit of its capacity after which it may be arranged

in a new position by manually adjusting the main frame on the banks.

Claims.

1. An excavating device comprising a
5 main frame a drive shaft mounted therein
power mechanism movably supported on the
drive shaft, and driving connection between
the power mechanism and the drive shaft,
a driven shaft supported in the main frame
10 and driving connection between the drive
shaft and the driven shaft and an excavat-
ing device operated from the driven shaft
and mounted for automatic adjustment of
its excavating point with relation to the
15 driven shaft.

2. An excavating device comprising a
main frame a drive shaft mounted therein, a

water wheel, supporting rods movably con-
necting the water wheel and drive shaft, a
driving connection between the water wheel 20
and drive shaft, and floats coöperating with
the water wheel, a driven shaft mounted in
the main frame, rods rotatably mounted on
said shaft and supporting a sprocket shaft,
a sprocket on said shaft, a coöperating 25
sprocket on the driven shaft, a chain oper-
ating over said sprockets, and buckets se-
cured on the chain.

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

W. P. BEAVER.

Witnesses:

J. E. BOYD,

R. F. ARMFIELD.