

No. 725,409.

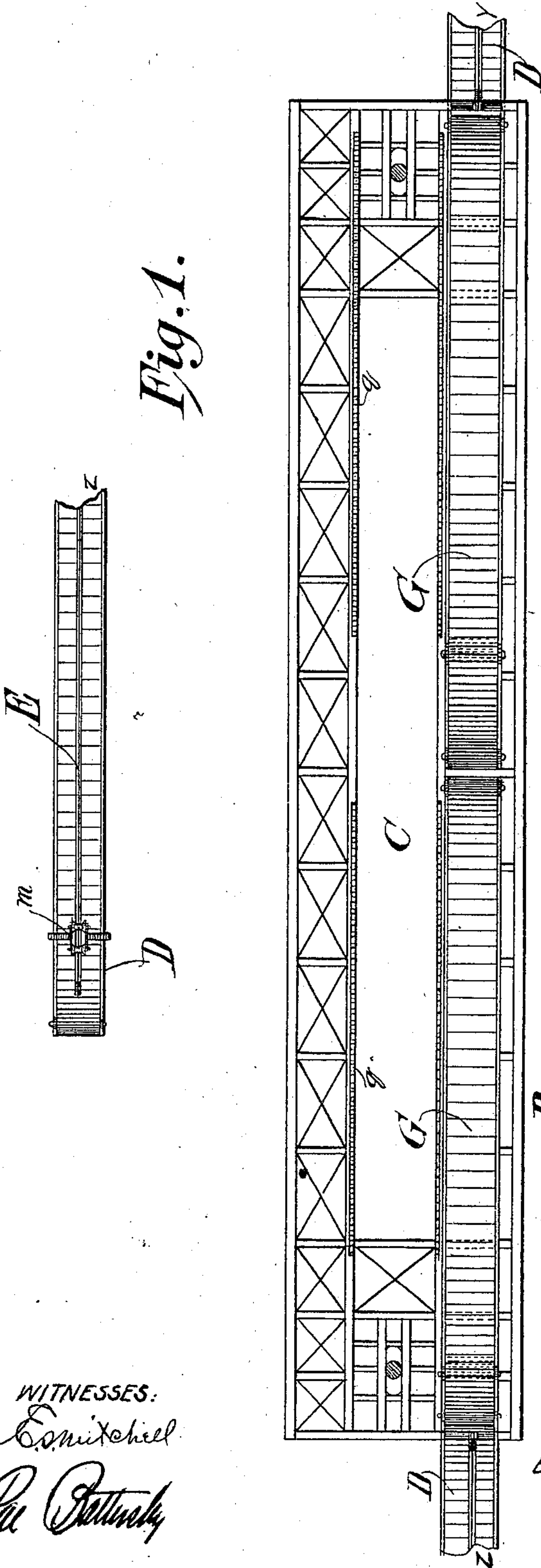
PATENTED APR. 14, 1903.

E. CHAQUETTE.
CANAL DREDGER.

APPLICATION FILED DEC. 28, 1901.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:
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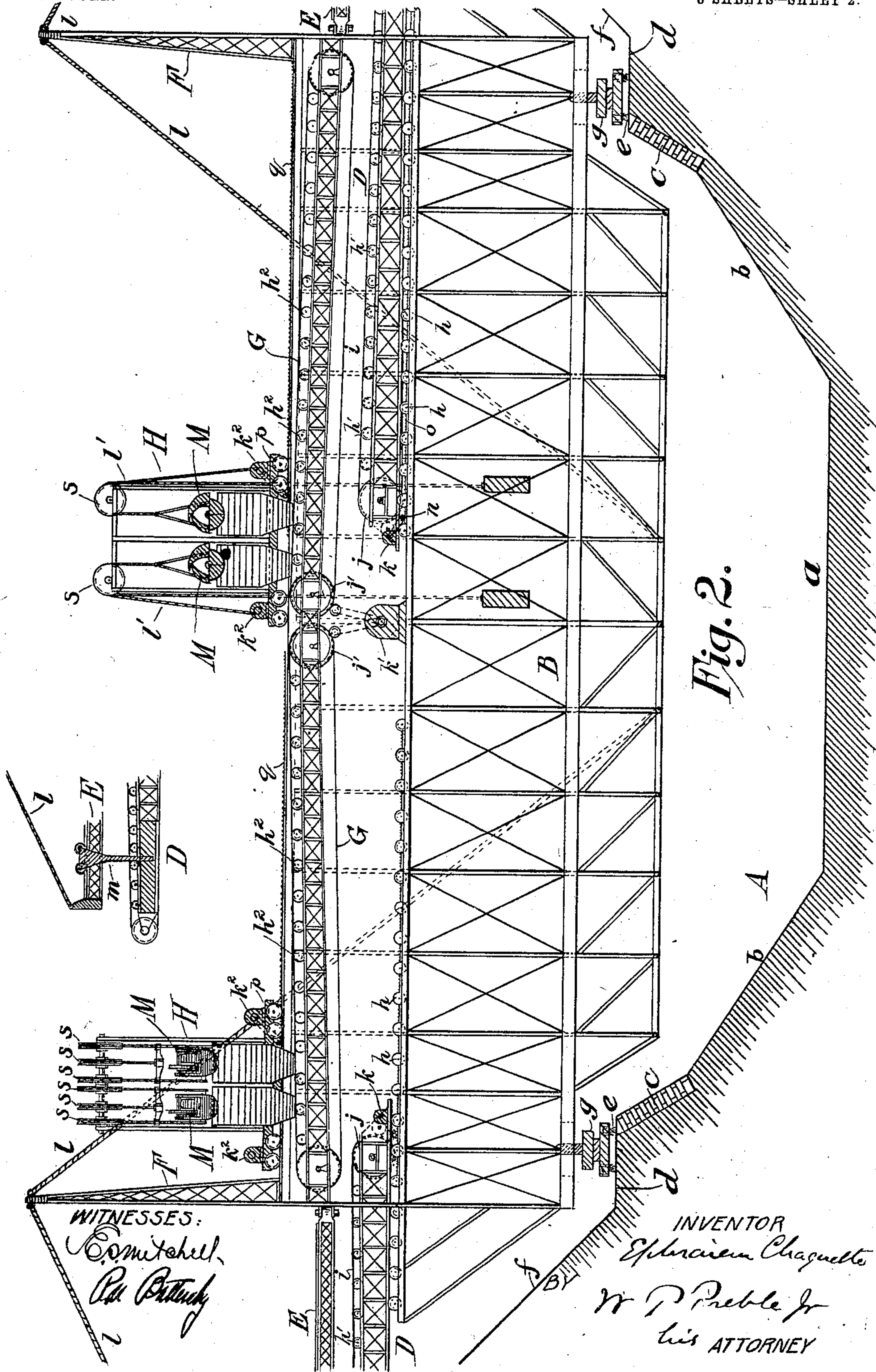
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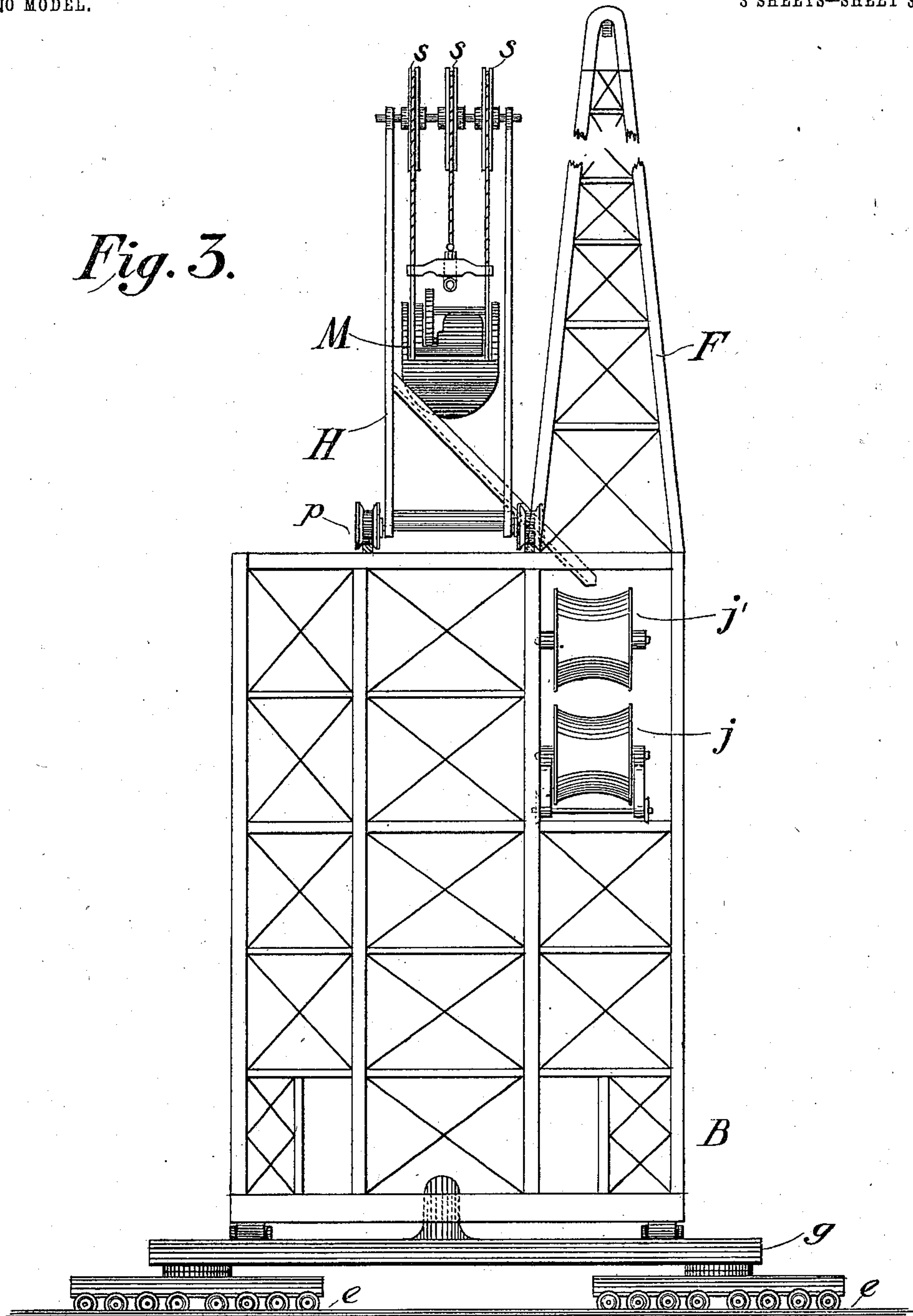
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3 SHEETS—SHEET 3.

Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EPHRAIEM CHAQUETTE, OF NEW ROCHELLE, NEW YORK.

CANAL-DREDGER.

SPECIFICATION forming part of Letters Patent No. 725,409, dated April 14, 1903.

Application filed December 28, 1901. Serial No. 87,543. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIEM CHAQUETTE, a citizen of the United States, and a resident of New Rochelle, county of Westchester, State of New York, have invented certain new and useful Improvements in Canal-Dredgers, of which the following is a specification.

My invention relates to that class of canal-dredgers in which the dredging apparatus is carried on a movable bridge or platform somewhat longer than the width of the trench or canal to be excavated and which is moved bodily lengthwise of the canal as occasion requires.

Heretofore the dredging apparatus has been suspended from the side of the bridge and has been fed along the bridge across the canal, the action of the dredge itself being at right angles to the line of feed. This way of dredging is subject to great disadvantages, one disadvantage being that the individual cuts or scoops made by the dredge are in the nature of holes or pockets which are apt to be disconnected from each other. Unless the feeding motion is accurately adjusted to the size and location of the unseen pocket an uncut wall is left between the pockets by feeding too far or waste motion occurs by overlapping if fed too little. To overcome this and other objections, my invention consists, primarily, of a canal-dredger composed of a longitudinally-slotted bridge extending across the canal provided with mechanism whereby the bridge may be moved lengthwise of the canal and a dredging apparatus carried on said bridge and operating through said longitudinal slot and provided with mechanism whereby said dredging apparatus is fed constantly forward in said slot during the cutting operation, whereby a continuous strip of material of uniform width may be cut for the full width of the canal.

When occasion requires, two or more dredging apparatus may be mounted side by side or otherwise, so as to operate in the longitudinal slot, and thereby economy of labor effected by making the cut of double width or with greater speed before the position of the bridge has to be changed for a new cut.

One application of my invention is shown in the accompanying drawings, in which—

Figure 1 is a top view of the bridge without the dredging apparatus and showing the

delivery ends of the bridge detached, the left-hand delivery apparatus being above and the right-hand delivery apparatus below the central figure. Fig. 2 is a side elevation, the delivery apparatus of each end being broken off and the outer end of the delivery apparatus at one side being shown detached. Fig. 3 is a side elevation of the dredging apparatus on a larger scale, showing a single dredge.

Same letters indicate similar parts in the different figures.

A represents the canal or trench, which is usually excavated dry, but may be excavated wet, if desired. This canal is preferably so cut as to have a horizontal bottom *a*, with inclined side banks *b b*, the upper portion of which may be reinforced by the brickwork *c c*. On each side of the canal is the tread-surface *d d*, upon which a track *e e* is laid, and along the track the bridge is drawn to form constantly-new sections of the canal. The excavated material may be deposited, as hereinafter described, so as to form the protective banks *f f*, if desired.

B is the bridge, which stretches across the canal and is composed of strong framework mounted upon the trucks *g g*, adapted to run upon the tracks *e e*.

It will be understood that in order to dig a canal or trench by the apparatus a shallow excavation of required width and deep enough to receive the part of the framework depending below the trucks *g g* is made by ordinary laborers or otherwise and the tracks *e e* laid in advance of the apparatus. It will also be understood that to provide a continuous construction of the canal along the route surveyed this preliminary marking, digging, and track-laying should always have sufficient lead over the canal-dredger not to interfere with its progress and that after the dredger has passed a given point the track may be removed. It will also be understood that the brick-work *c c* may also be erected in advance of the dredger, if desired.

The bridge B is provided with a longitudinal slot or opening C, which extends substantially the full width of the canal to be dug. Two feeding devices D D are provided, each of which consists of a car sliding on rollers *h h* and extending substantially half the length of the bridge B. These cars carry an

endless apron *i*, held up by the rollers *h' h'* and turned by the drum *j j* under the control of the motor *k k*, carried upon the car.

The apron or belt *i* receives the excavated material from the dumping-apron and discharges it at the side of the canal to form the bank *f*. One bank is formed by one of the cars and the opposite bank by the opposite car. When the cars are inboard, as shown in Fig. 1, they are out of operation. As soon as the apparatus begins to operate the car D on that half of the bridge on which the dredge happens to be at the time is thrust forward, so that the end of the car overhangs the end of the bridge, and can therefore discharge the excavated material to begin the formation of the bank *f*. As the bank grows it becomes necessary for the car D to move farther and farther out. To support its outer end, therefore, the bridge is provided with a supporting-arm E, held up by the rope *l*, which passes over the upright F, secured to the bridge. The forward end of the car D is provided, as shown in the detached portion of Fig. 2, with a supporting-bracket *m*, the upper part of which is equipped with rollers adapted to move along said arm. By this means the car is supported until it reaches the end of its outward motion, as shown at the left of Fig. 2. The forward-and-back motion of the car D is accomplished from the motor *k* through the pinion *n* driven thereby and meshing with the rack *o*.

The excavated material is received by the apron of the car D from another apron, as follows: Two dumping-aprons G G are provided, each extending substantially half the length of the bridge, turned by the drums *j j* under the control of the motor *k'*, mounted upon the bridge and adapted to operate either or both of said drums. These aprons G are supported during the upper or feeding portion of their path by the rollers *h²*, journaled in the framework of the bridge and, having a slight decline toward the end of the bridge, are always in position to discharge the excavated material conveyed by them upon the apron of the corresponding dumping-car D, whether the latter is inboard or outboard. Above these aprons is mounted the dredging apparatus H, supported on and carried by the truck or dredge-carriage *p*, which moves along the rack *q* under the control of the motor *k²* in the way previously described for the motor *k*. This motor *k²* also serves to raise and lower the dredging apparatus carried on said truck. There may be a single truck or dredge-carriage, in which case it moves the entire length of the slot C, discharging on one of the aprons G G during one half its travel and the other during the other half, or two trucks may be provided, each carrying a dredging apparatus, in which case both banks *f f* may be formed at the same time by discharging the excavated material from both dredges simultaneously each upon its appropriate apron.

Whether one dredge-carriage or more is used it may carry a single dredge, as shown in Fig. 3, or a double dredge, as shown in Fig. 2. In the latter case the equipoise is best preserved by having one dredge descend as the other ascends.

The specific form of dredge to be used in my improved canal-dredger is immaterial, as it may be a bucket-dredge apparatus or a clam-dredge or any other form which can rise and descend through the slot C and at the same time be fed forward longitudinally of said slot.

In the drawings I have selected the clam-dredge for the purpose of illustration, the clams M M being shown in end elevation in the right half of Fig. 2 and in side elevation in the left half. These clams are supported from the pulleys *s s* by the ropes *l' l'* and are raised and lowered, as before stated, by the motors *k²*. The clams may be of any well-known and usual construction or may be of the form described in my pending application, Serial No. 82,997, filed November 20, 1901, and need not, therefore, be more fully described here.

I claim—

1. The above-described canal-dredger which consists of a longitudinally-slotted bridge adapted to extend across a canal and provided with mechanism whereby the bridge may be moved lengthwise of the canal; a dredging apparatus carried on said bridge and operating through said longitudinal slot; mechanism whereby said dredging apparatus is fed constantly forward in said slot during the cutting operation; a pair of traveling aprons mounted on cars and adapted to receive the excavated material and means whereby said cars are moved outboard and inboard at opposite ends of said bridge.

2. The above-described canal-dredger which consists of a longitudinally-slotted bridge adapted to extend across a canal and provided with mechanism whereby the bridge may be moved lengthwise of the canal; a dredging apparatus carried on said bridge and operating through said longitudinal slot; mechanism whereby said dredging apparatus is fed constantly forward in said slot during the cutting operation; a pair of dumping-aprons extending lengthwise of said bridge, and adapted to receive the excavated material from said dredging apparatus and convey the same to opposite ends of said bridge; a pair of traveling aprons mounted on cars on said bridge below said dumping-aprons and means whereby said cars are moved outboard and inboard at opposite ends of said bridge and caused to discharge at varying distances therefrom the excavated material received from said dumping-aprons.

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Witnesses:

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