

(No Model.)

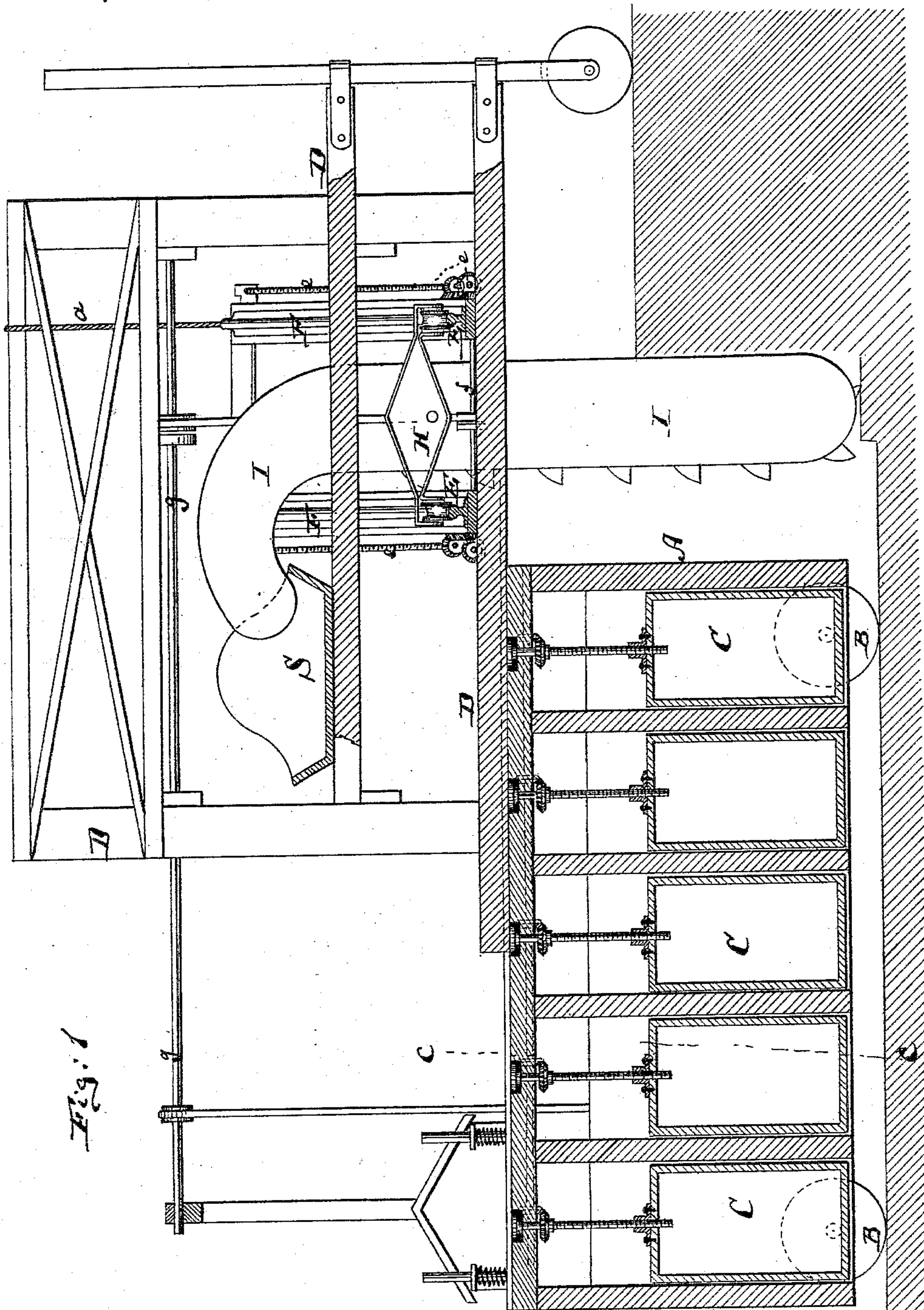
3 Sheets—Sheet 1.

A. D. FOX.

DREDGING AND EXCAVATING APPARATUS.

No. 286,691.

Patented Oct. 16, 1883.



Witnesses
John M. Spear.
August C. Schlarbaum.

Inventor:
A. D. Fox
by his attorneys
Brisson & Setty

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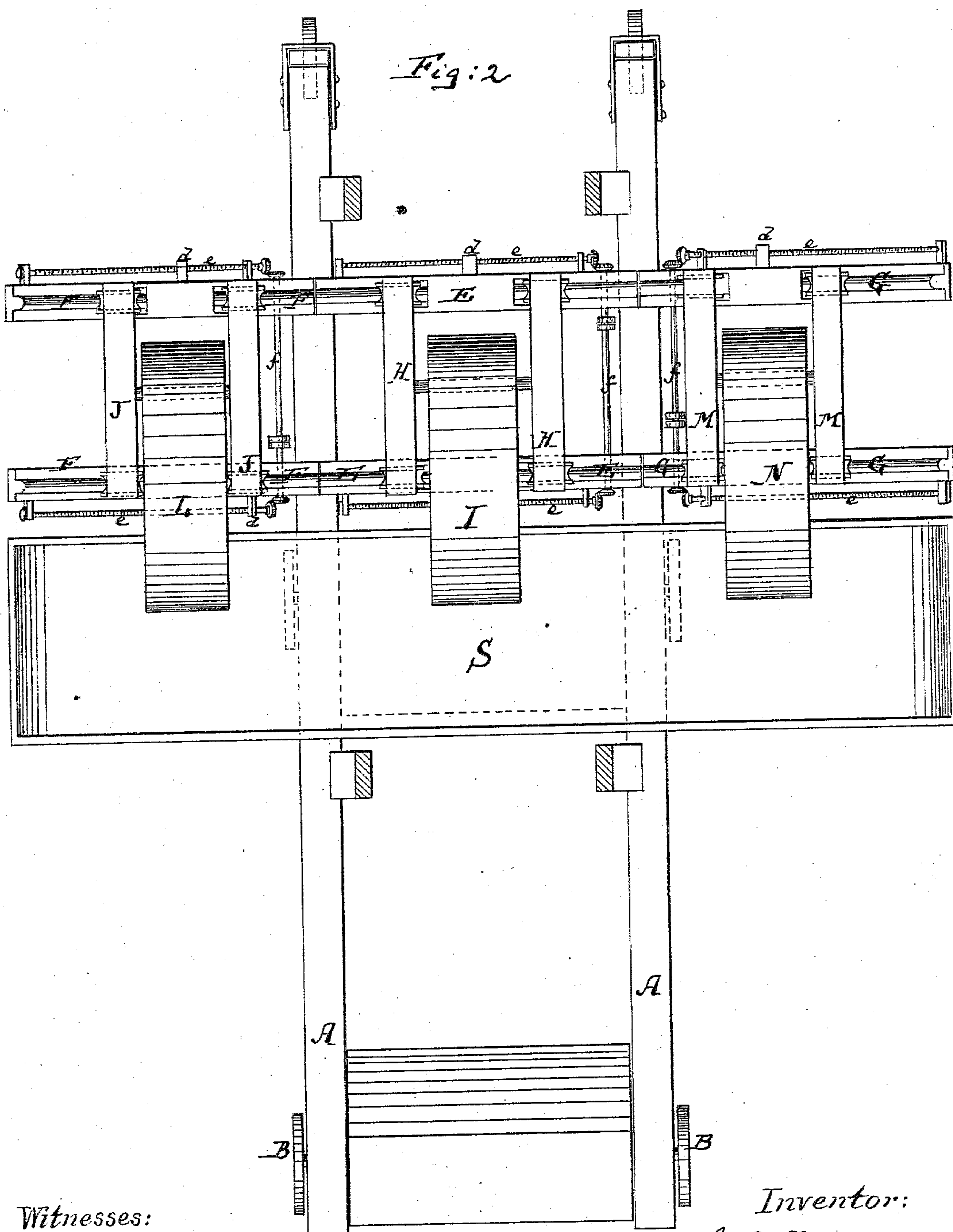
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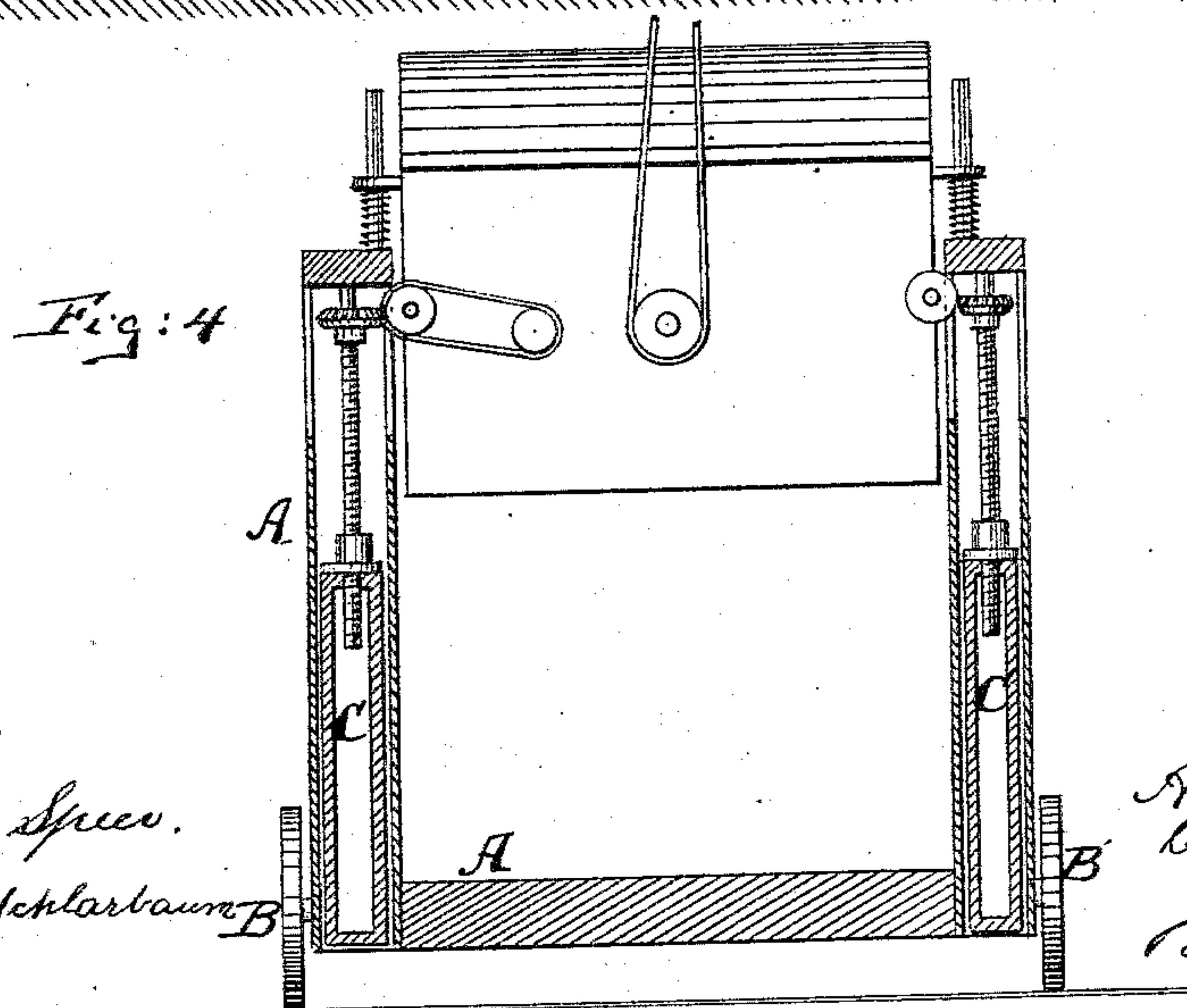
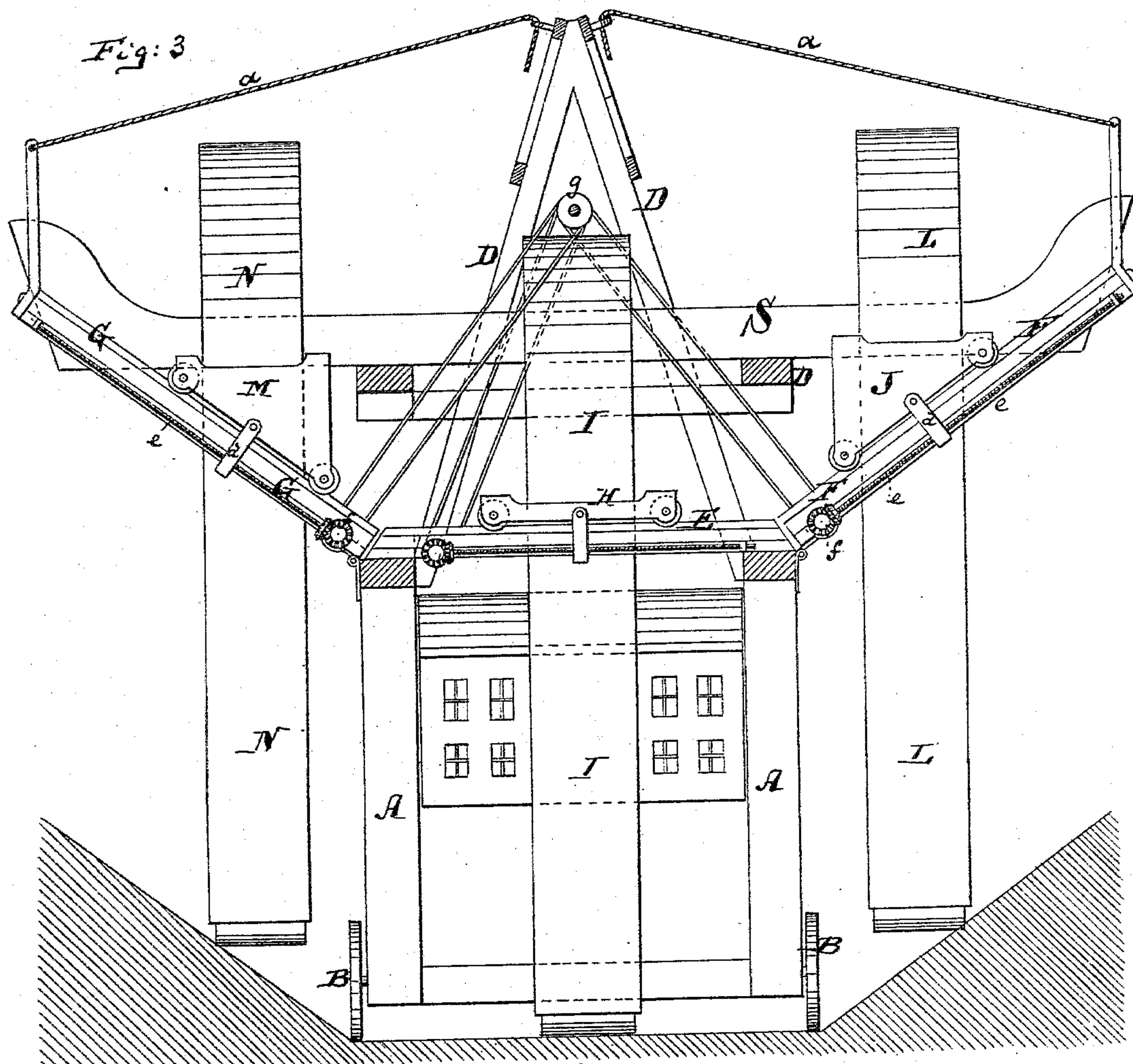
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August Eschlarbaum B

Inventor:

A. D. Fox
by his attorney,

Ernest & Beth

UNITED STATES PATENT OFFICE.

ALFRED D. FOX, OF NEW YORK, N. Y.

DREDGING AND EXCAVATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 286,691, dated October 16, 1883.

Application filed November 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALFRED D. FOX, of New York, in the county and State of New York, have invented an Improved Dredging and Excavating Apparatus, of which the following is a specification.

Figure 1 is a sectional side elevation of my improved dredging and excavating apparatus; Fig. 2, a plan or top view of the same; Fig. 3, an end elevation thereof; and Fig. 4, a cross-section of the same, taken on the plane of the line *c c*, Fig. 1.

This invention has for its object to so construct apparatus for forming channels, ditches, or the like, either under water or on land, that the contour of the channel or ditch to be produced will be predescribed by a track on the dredging or excavating contrivance itself.

In the accompanying drawings, the letter A represents the supporting-carriage, which may either be supported on wheels B B or be a floating carriage, as may be desired, and which, if a floating carriage, may be made vertically adjustable in the water by means of air-boxes C C, that are indicated in Fig. 4, but not here claimed as new because described in another application filed by me at the same time with this. On this carriage A, be the same supported on land or floating on water, is supported the frame-work D of the excavating mechanism, and also the engine or engines (not shown) for moving the excavating mechanism.

On the frame D, that rests, as stated, on the structure A, is also supported a transverse track, E, rigidly secured in place, and, furthermore, a movable transverse track, F, on one side, and another movable transverse track, G, on the other side. The track F is hinged to the framing D, close to one end of the fixed track E, and the track G is hinged to the framing D, close to the other end of the track E, as indicated in Figs. 2 and 3. The three tracks F E G are shown to be in line, and to constitute, in fact, one continuous track, on which a carriage of suitable kind may be moved; but it is not essential to this invention that the rails of the three tracks E F G should coincide, or that, in reality, they should be made to abut, because each of the said tracks is used in connection with its own carriage,

and therefore its relation to the other track, for the purpose of this invention, is only important in the aspect of a machine when regarded in cross-section, as in Fig. 3.

On the fixed horizontal track E is supported a carriage, H, which holds a suitable excavating-machine, I, which machine may be an endless belt having buckets that dig into the earth, lift it up, and deposit it in a suitable chute, S, that is carried by the framing D. The carriage H can be moved on the track E, so as to allow this excavating apparatus to traverse a path as long as the track E, or thereabout, and the excavating mechanism I can be adjusted vertically, so as to be let down to increase the depth of the channel it makes until the requisite extent of depth has been reached.

On the track F is supported a carriage, J, which holds an excavating contrivance, L, and on the track G is supported a carriage, M, which holds an excavating contrivance, N. Each of these excavators L and N operates independent of the other and independent of the excavator I.

The main feature of my invention is the fact that the tracks F and G are placed at such an inclination, as shown in Fig. 3, and are sustained at such an inclination by suitable chains or ropes *a*, that connect their outer ends with the framing D, or otherwise, that the carriages J and M, respectively, will have to travel on these inclined tracks, and will make the excavators L and N produce a substantially like inclination at the bottom of the channel dug out. In other words, if a channel is to be dug out having its central portion horizontal and of a certain width, and having its sides inclined at a certain angle and of a certain extent, the machine invented by me will produce this result almost automatically, provided the track E is made of a length sufficient to allow the central excavator, I, to produce the bottom of the requisite width, and the tracks F and G are placed at an inclination which shall be parallel to the intended inclinations of the sides of the embankment, and are of such a length as to enable the excavators L and N to dig out the requisite width of embankment. The carriages M, I, and H have proper wheels resting on the rails of the tracks, and have at the sides downwardly or outwardly

projecting nuts *d*, through which pass screw-shafts *e*, which gear into shafts *f*, that are driven by belt-connection or otherwise from the main shaft *g* of the engine, or otherwise connected
 5 with the propelling power, so that as the shafts *f* are revolved the carriages will be moved in the desired direction and with the requisite speed to carry the several excavators laterally as far as may be desired.

10 In making channels under water, digging ditches or canals on a larger or smaller scale, this invention will be of great importance and advantage, because the tracks *F* *G* will be adjusted, as stated, to render the action of the machine practically automatic.

I claim—

1. In excavating apparatus, the combination

of the supporting-carriage *A*, adapted to move longitudinally, and of the framing *D*, carried by said carriage, with fixed transverse track *E* 20 and adjustable side tracks, *F* and *G*, and with excavators carried by said tracks, respectively, substantially as described.

2. The combination of the tracks *E* *F* *G* with the carriages *H* *J* *M* and excavators *I* *L* *N*, sub- 25 stantially as described.

3. The carriage *J*, having nut *d*, combined with the screw-shaft *e* and revolving shaft *f*, and with the hinged or adjustable track *F*, substantially as described.

ALFRED D. FOX.

Witnesses:

WILLY G. E. SCHULTZ,
 JAMES TURK.