(No Model.)

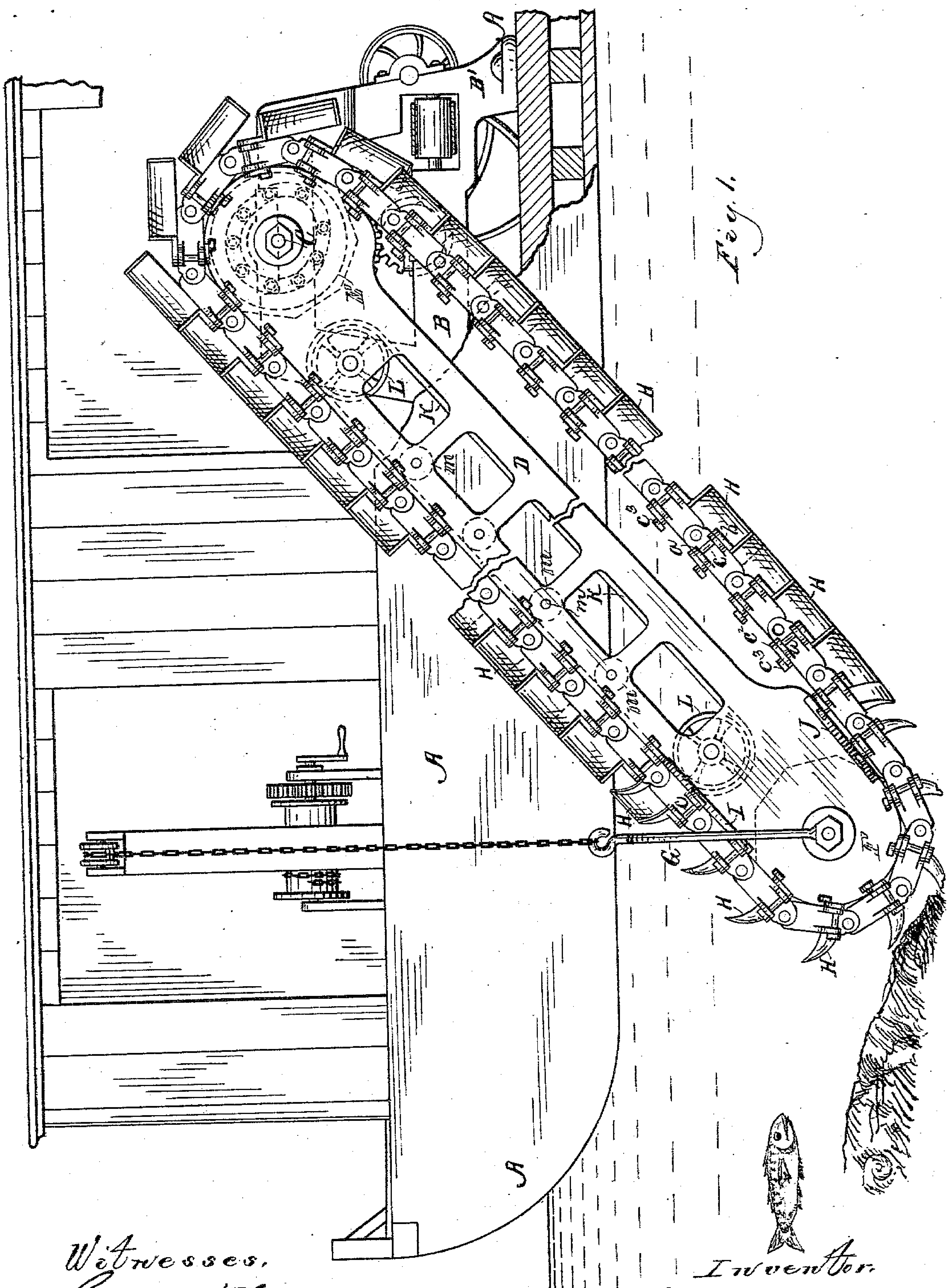
3 Sheets—Sheet 1.

J. C. ANDERSON.

BRICK MACHINE.

No. 283,366.

Patented Aug. 21, 1883.



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(No Model.) 3 Sheets—Sheet 2.

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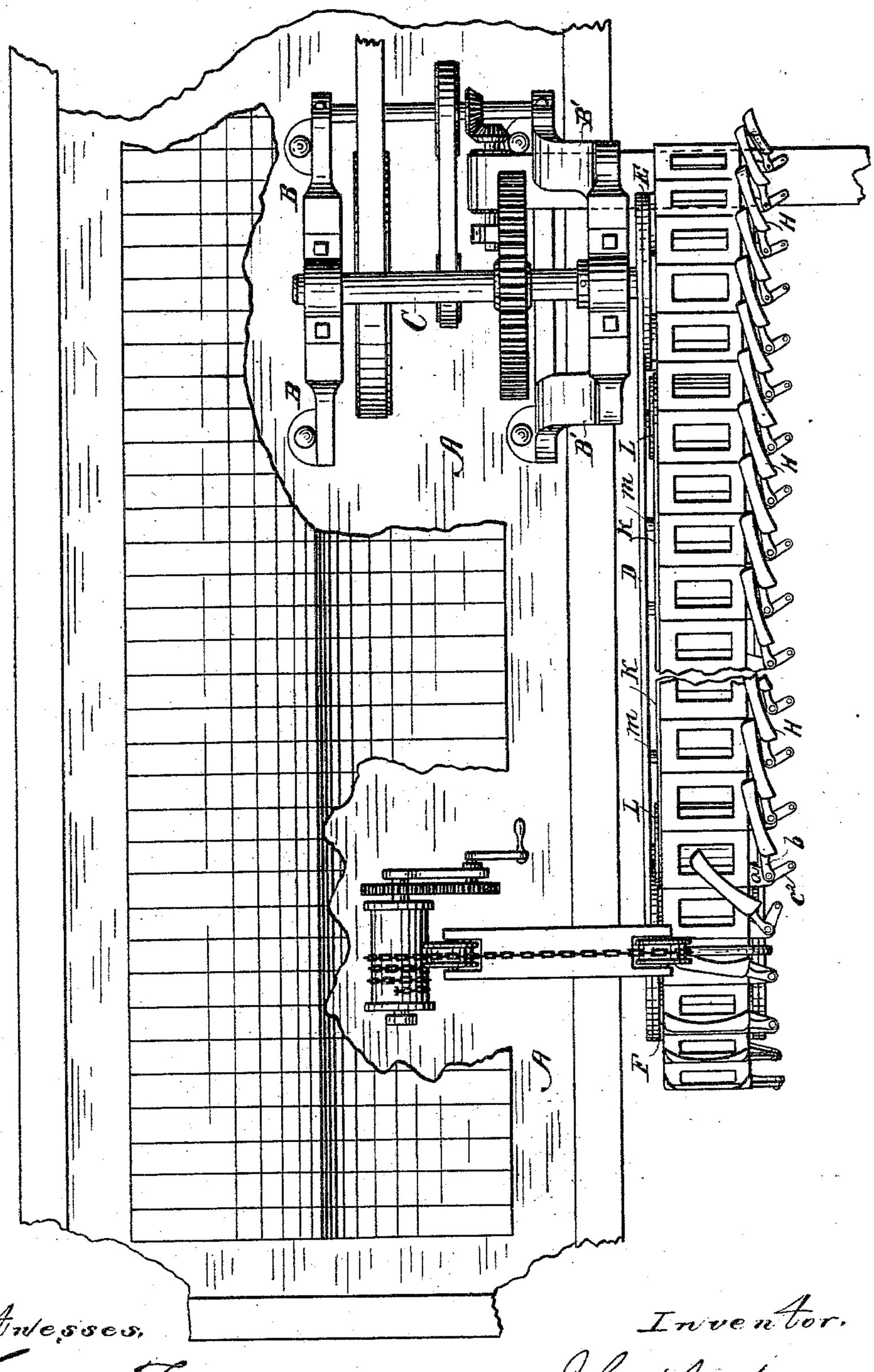

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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Fig. 3.

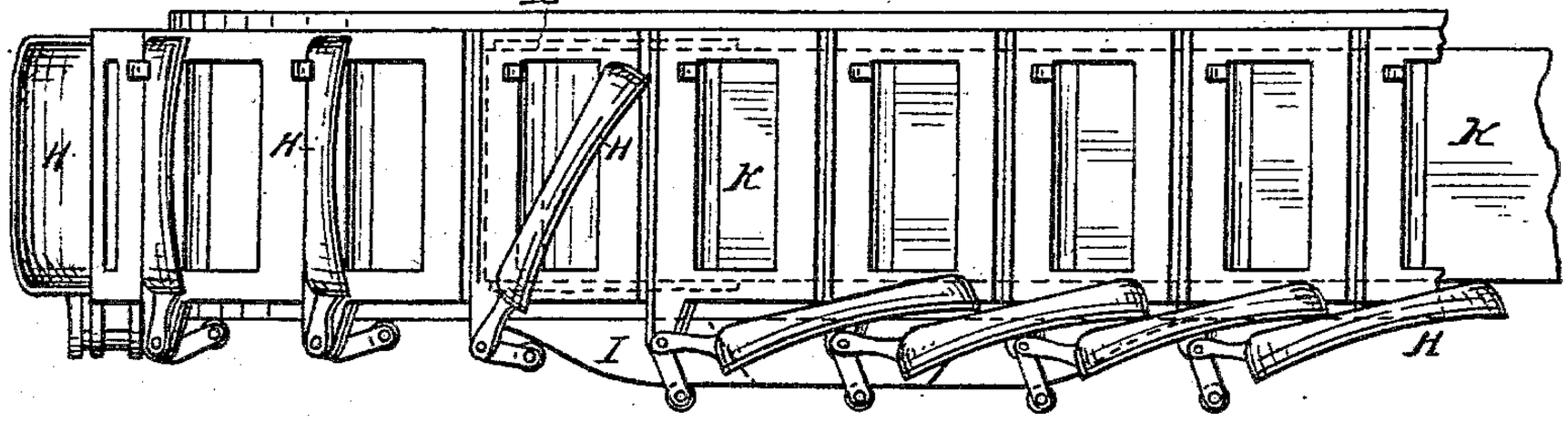


Fig. 4.

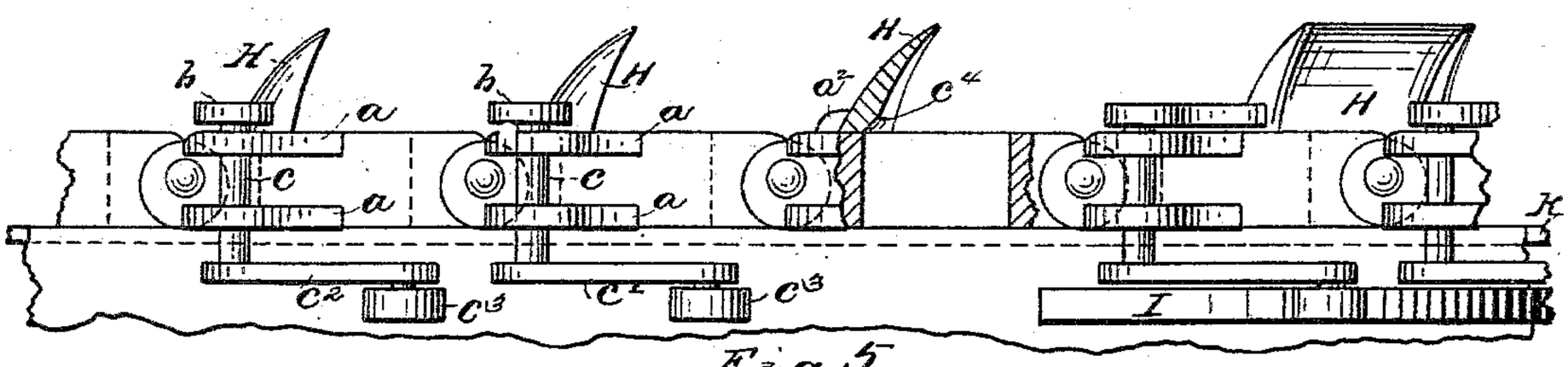
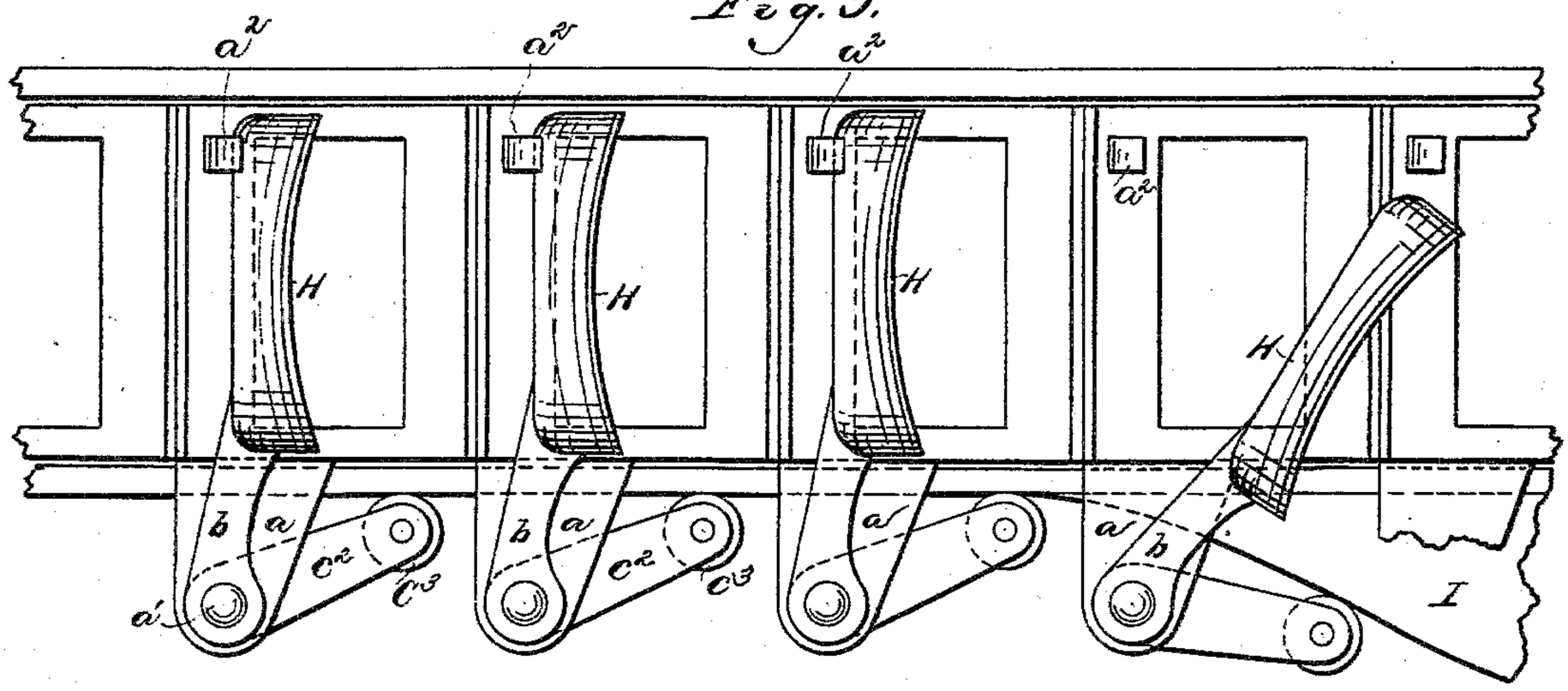


Fig. 5.



Witnesses.
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Inventor.
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UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF HIGHLAND PARK, ILLINOIS.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,366, dated August 21, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States, and a resident of Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Machines for Making Brick, of which the following, when taken in connection with the accompanying drawings, forming a part thereof, forms a full, clear, and exact description.

Referring to the drawings, Figure 1 is a side elevation of my improved machine as mounted on a dredging scow or boat. Fig. 2 is a plan view. Fig. 3 is a top view of a part of the mold-chain, showing the position of the scoops or buckets during and after the molding operation. Fig. 4 is an enlarged side view of the mold-chain, partly in section. Fig. 5 is an enlarged top view of the mold-chain and buckets prior to and during the molding operation.

My present invention is designed as a modification of the machine and method for making brick from the dredgings of rivers for which Letters Patent were granted to me December 12, 1882, No. 268,976, and also for wet or pugged clay, where no great amount of pressure is required for pressing or shaping the brick into proper form. In the present instance, as in the patent above referred to, the clay is dredged or taken from the bed and molded into form in one and the same operation without frequent handling of the clay, thus reducing the cost of production very materially, and furnishing a brick which will be amply sufficient for all ordinary building purposes.

To this end my invention consists of an endless chain of molds which serve a twofold purpose—viz., molds in which the bricks are given form, and also as dredging-buckets to receive the clay from the cutting or dredging blades which form a part of the endless chain.

My invention consists, further, in attaching to the sides of the mold-chain a series of scoops or buckets, which are pivoted thereto in such a manner that they will fill the mold-cavity with clay, and then be made to traverse across the mold-cavity, so as to press the clay therein.

My invention consists, further, in placing underneath the mold-chain an endless chain of metal or other material, mounted on suitable pulleys and adapted to travel with the same velocity as the mold-chain, the said belt serving as a bottom for the molds.

My invention consists, further, in certain details of construction, which will be fully described hereinafter, and pointed out in the claims.

Referring to the drawings, A designates a vessel of any suitable or desirable construction, on which I mount the operating parts of the machine. I do not limit myself, however, to the use of a vessel, as the mechanism may be mounted in a suitable structure near the clay-bank, where the clay can be tempered and placed so as to be fed to the mold-filling scoops.

B and B′ are brackets or standards, secured firmly to the deck of the vessel or other structure, in which I mount the driving mechanism and the off-bearing mechanism for conveying the brick from the molding mechanism.

C is the main supporting and driving shaft, to which power is applied in any suitable manner and from any convenient source. To the outer end of the shaft C are pivotally secured the plates D or frame of boiler-iron, which constitute the sides of the frame-work for supporting the excavating and molding mechanism.

E is a drum, rigidly secured to the outer end of the shaft C, of octagonal or other form in peripheral outline, to correspond with the links of the mold-chain, and by means of which the mold-chain is caused to travel. The drum E is also provided with plungers, operated upon by cam-grooves, for ejecting the brick from the mold onto the off-bearing belt.

The lower end of the frame D is provided with a drum, F, of the same peripheral outline as the drum E, around which the mold-chain is caused to travel.

To the axes of the drum F is secured a bail, G, which in turn is secured to any suitable or convenient hoisting mechanism for raising or lowering the frame D.

The portions of the machine which I have just described are essentially the same as the corresponding parts in the patent above referred to, so that a further description of them is deemed unnecessary at this time. The end-

less chain of molds is also of substantially the same construction as in the former patent, except in this, that they are provided with lugs *a*, in which the excavating and mold-filling scoops or buckets H are pivoted. The buckets or scoops H are made of steel castings, to give them suitable strength, and are provided with arms or projections *b*, cast thereon, and by which they are pivoted to the lugs *a* of the mold-chain.

To the arms *b* of the scoop are rigidly secured the bolts or pivot-pins *c*, which are seated in the lugs *a* of the mold-boxes, and to the lower ends of the pivot-pins *c* are rigidly secured the arms c^2, the outer ends of which are provided with friction-wheels c^3. The lower inner edge of the scoops or buckets are beveled, as shown at c^4, Fig. 4, so that when the buckets are swept across the upper face of the mold the tendency will be to pack or compress the clay in the molds.

I is a cam-plate securely attached to the frame D, against which the friction-wheel of the arm c^2 impinges as the mold-chain is being carried up, which forces the arm c^2 outward, and at the same time it carries with it the scoops or buckets H, which describe a quarter-circle in their passage across the mold-cavities, sweeping off the surplus clay, and pressing or compacting the clay which remains therein into brick form.

A cam or incline, J, is secured to the lower edge of the frame D, for the purpose of moving the scoops or buckets back across the face of the mold-chain and into a position where they will act on the clay to excavate the same. The incline or cam J is provided with a groove which converges toward the frame D, in which the friction-wheels c^3 enter, and thus force the arm c^2 toward the frame D, and the scoops H back against the studs or projections a^2, which are cast on the mold-sections, and which support and steady the outer end of the scoops or buckets. Other equivalent devices may be used for operating the scoops without departing from the spirit of my invention.

K is an endless belt of metal or other material mounted on the pulley-wheels L L, which form the bottom of the mold-boxes between the point at which the brick is formed and the top drum, E. This endless belt is carried forward by the mold-chain, or by any suitable mechanism, at the same velocity or rate of speed as the mold-chain, so as to prevent any drag upon the under side of the newly-formed brick, while friction-rolls *m*, secured in the frame D, serve to steady and support the endless belt and keep it snug against the under side of the molds. A flooring or solid portion is placed on the upper side of the frame D at a point between the drum F and the lower pulley, L, of the endless belt, so as to prevent the clay from falling through the molds before reaching the endless belt.

The operation of my device is as follows: Motion is imparted to the endless chain of molds and scoops, the scoops enter the clay and are filled as they are drawn up and assume a vertical position, and the clay is discharged therefrom into the molds by the force of gravity. The projecting arms which operate the scoops or buckets now come in contact with a cam or incline, I, which forces them out and causes the scoops H to traverse across the face of the mold, sweeping off any surplus clay and forcing enough in the mold-cavity to form a brick. The bricks thus formed are carried up over the drum E, where they are ejected from the molds to the off-bearing belt. The scoops or buckets remain in this outward position until they near the lower drum, F, where, by means of the cam-plate J, they are thrown back across the face of the mold-chain and into position for taking up another load of clay and dumping it into the mold.

I do not wish to limit myself by the foregoing description to an endless chain of open molds, for it is obvious that the molds may be provided with movable bottoms confined therein in such a manner as to admit of their being thrust forward to expel the brick from the mold. When such a form of construction is used, the endless traveling belt, which forms the bottom of the mold, may be dispensed with.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brick making or molding machine consisting of a series or endless chain of molds having pivoted thereto scoops or buckets for raising the clay and placing it in the molds, as set forth.

2. In a brick making or molding machine, a series or endless chain of traveling molds provided with excavating or filling scoops pivoted thereto, and means, substantially such as described, for swinging said scoops over the face of the mold, to press the clay therein and remove the surplus clay therefrom, as set forth.

3. In a machine for molding plastic material into shape, a series or endless chain of molds or formers having attached thereto excavating and filling scoops or buckets, which are pivoted thereto and adapted to be moved across the face of the mold, as and for the purpose set forth.

4. A brick making or molding machine consisting of a series or endless chain of connected molds having pivoted thereto filling scoops or buckets, substantially such as described, and an endless belt adapted to impinge against and form the bottom of said molds and to travel therewith, as set forth.

5. An excavating and elevating scoop or bucket, or series of scoops or buckets, pivoted to an endless chain or series of compartments, and adapted to be swung around in a line parallel with the line of motion, as set forth.

6. A series or endless chain of molds connected together and provided with the studs or projections *a*, in which is pivoted the pin

c, to which the scoops are rigidly secured, and the operating-arm c^2, having friction-wheel c^3 thereon, as set forth.

7. The combination of a series or endless chain of molds, provided with excavating scoops or buckets pivoted thereto, with the arm c^2 and incline or cam-shaped projection I, secured to the frame of the machine, whereby the scoops or buckets are caused to traverse across the face of the mold, as set forth.

8. The combination of a series or endless chain of molds, provided with excavating or filling scoops or buckets pivoted thereto, with the arm c^2, provided with the friction-wheel c^3, and incline or cam-grooved projection J, secured to the frame of the machine, whereby the scoops or buckets are carried back across the face of the mold and into a position to operate upon the material to be elevated.

9. The combination of the mold or mold-sections, provided with the stud or stop a^2, with the pivoted scoops or buckets H and the devices for operating said scoops, as described, whereby the outer ends of the scoops or buckets are supported, as set forth.

10. An endless chain or series of compartments or open molds for raising or elevating clay and other material, in combination with an endless belt which travels with and forms the bottom of the compartments or molds.

J. C. ANDERSON.

Witnesses:
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MAUD SUMMERS.