

No. 607,688.

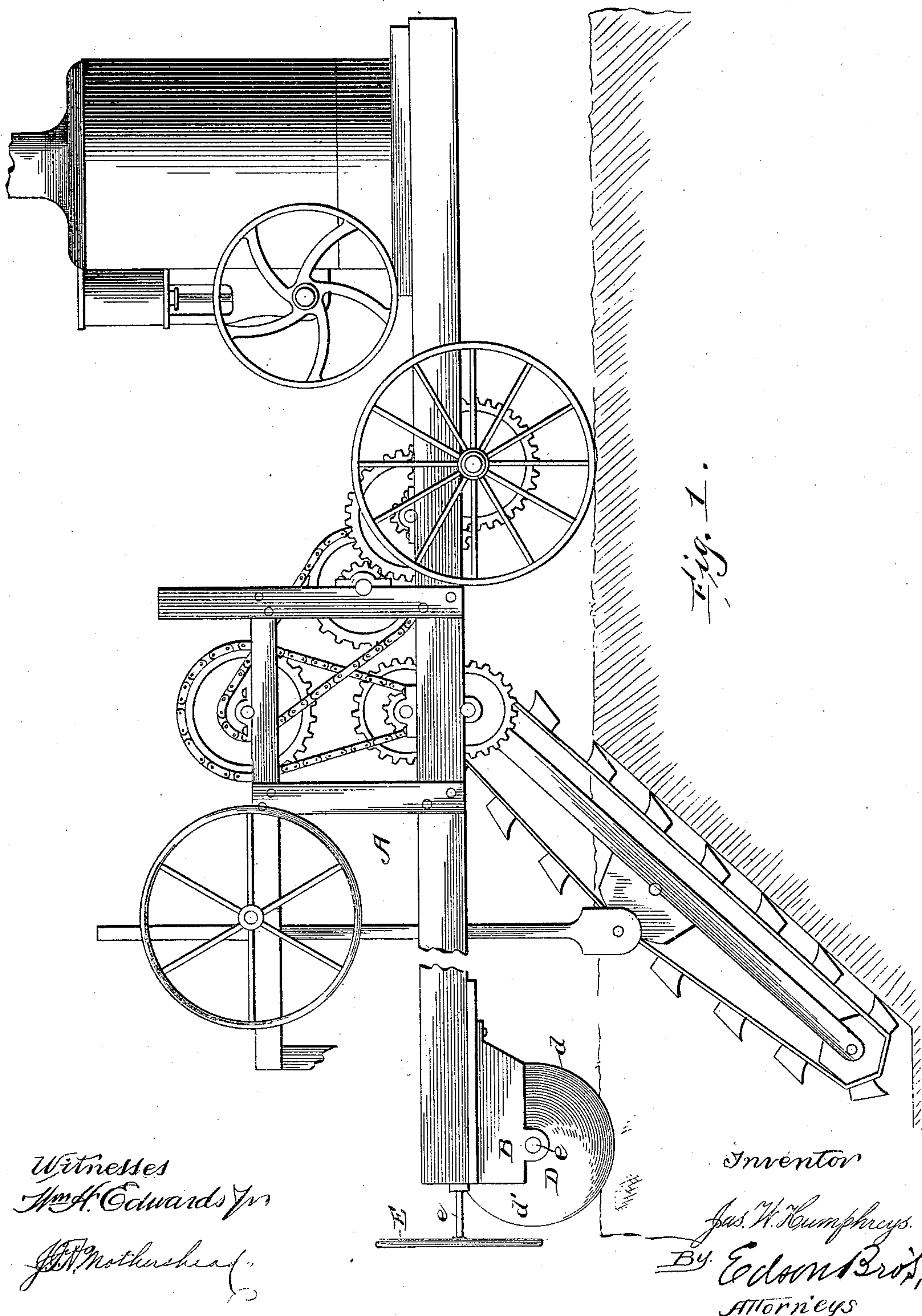
Patented July 19, 1898.

J. W. HUMPHREYS.
DITCHING MACHINE.

(Application filed Feb. 4, 1898.)

(No Model.)

3 Sheets--Sheet 1.



Witnesses
Wm. H. Edwards Jr.
J. W. Mothershead.

Inventor
Jas. W. Humphreys.
By Edson Bros,
Attorneys

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Fig. 2.

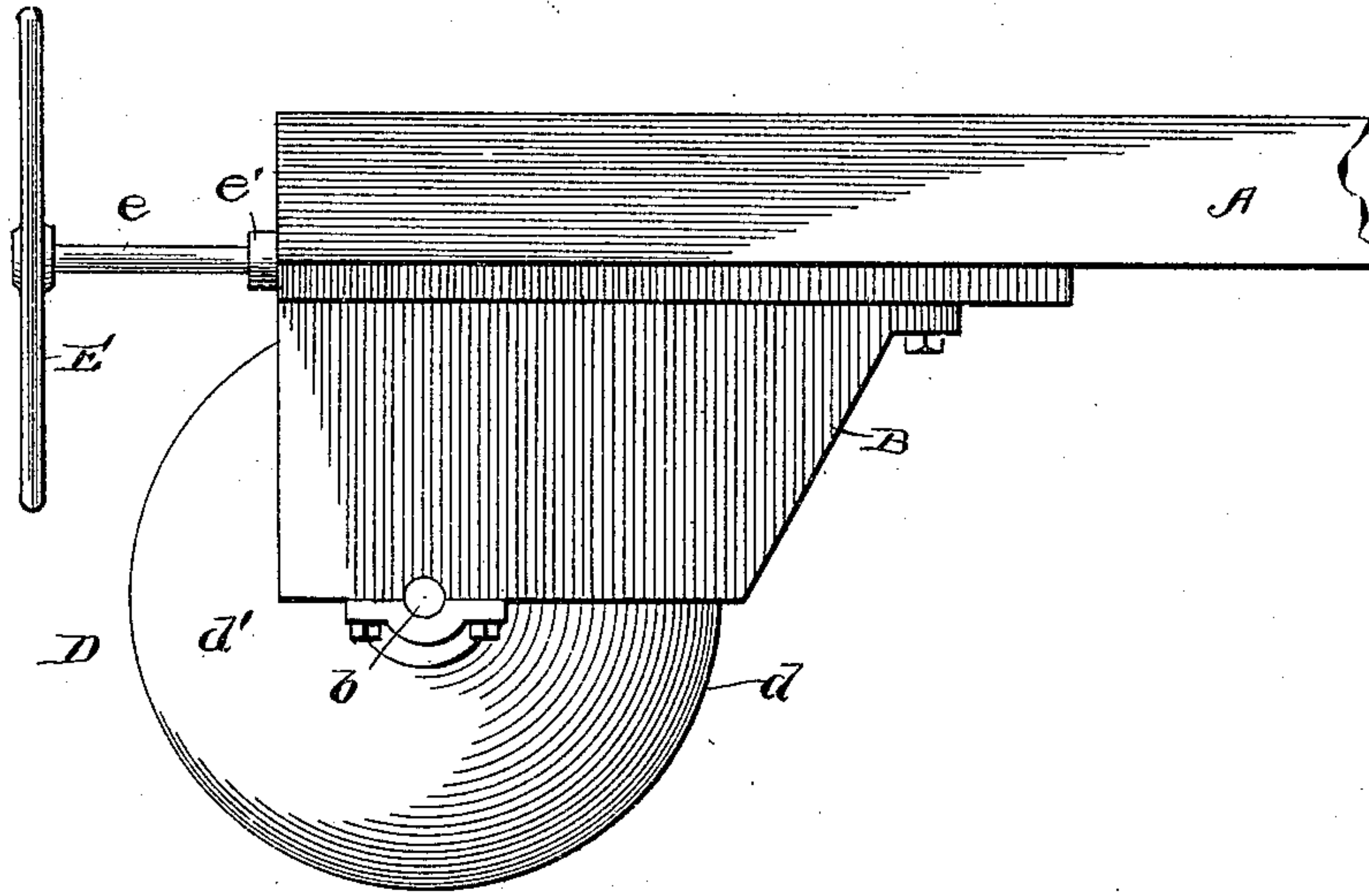


Fig. 3.

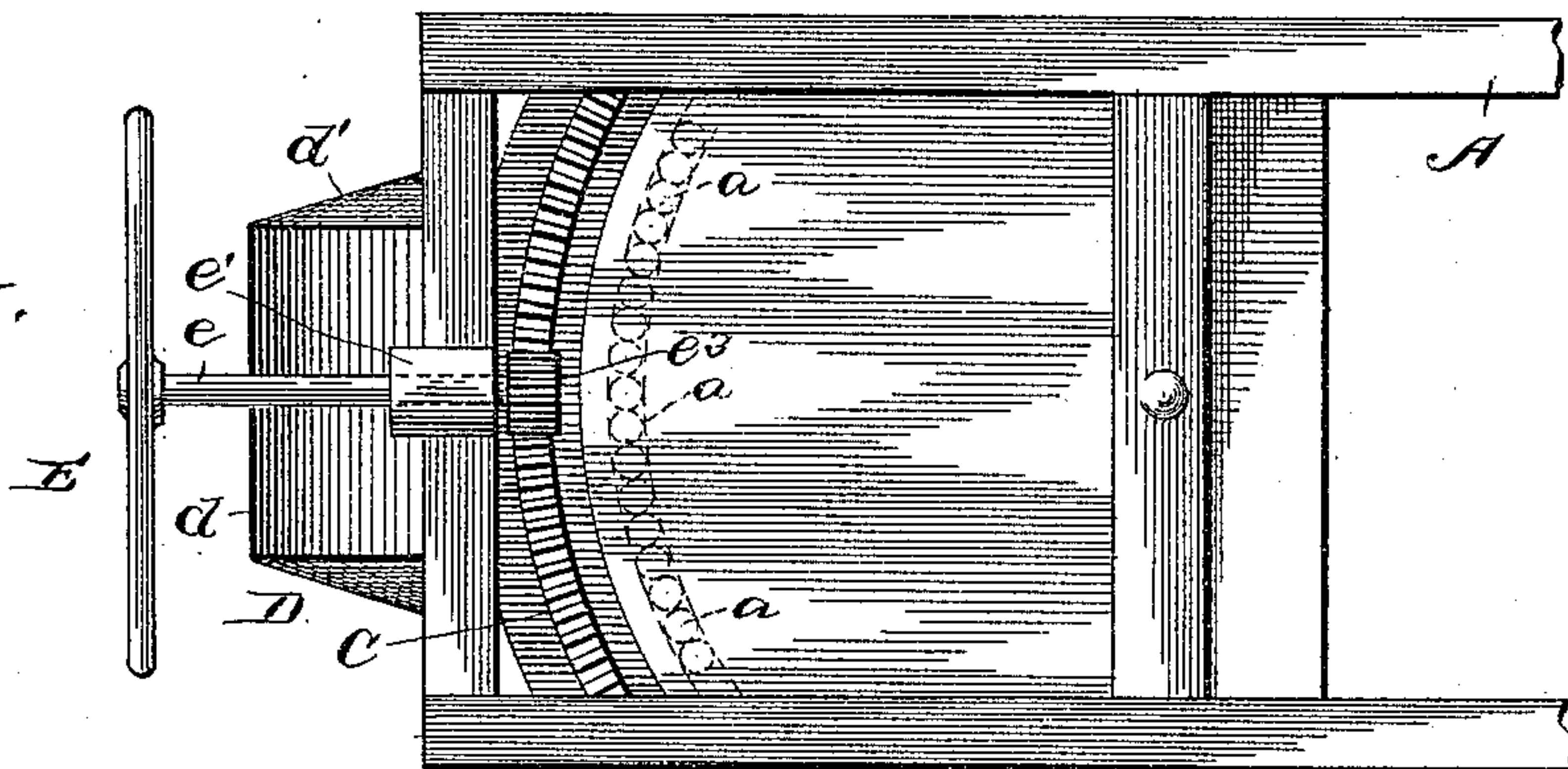
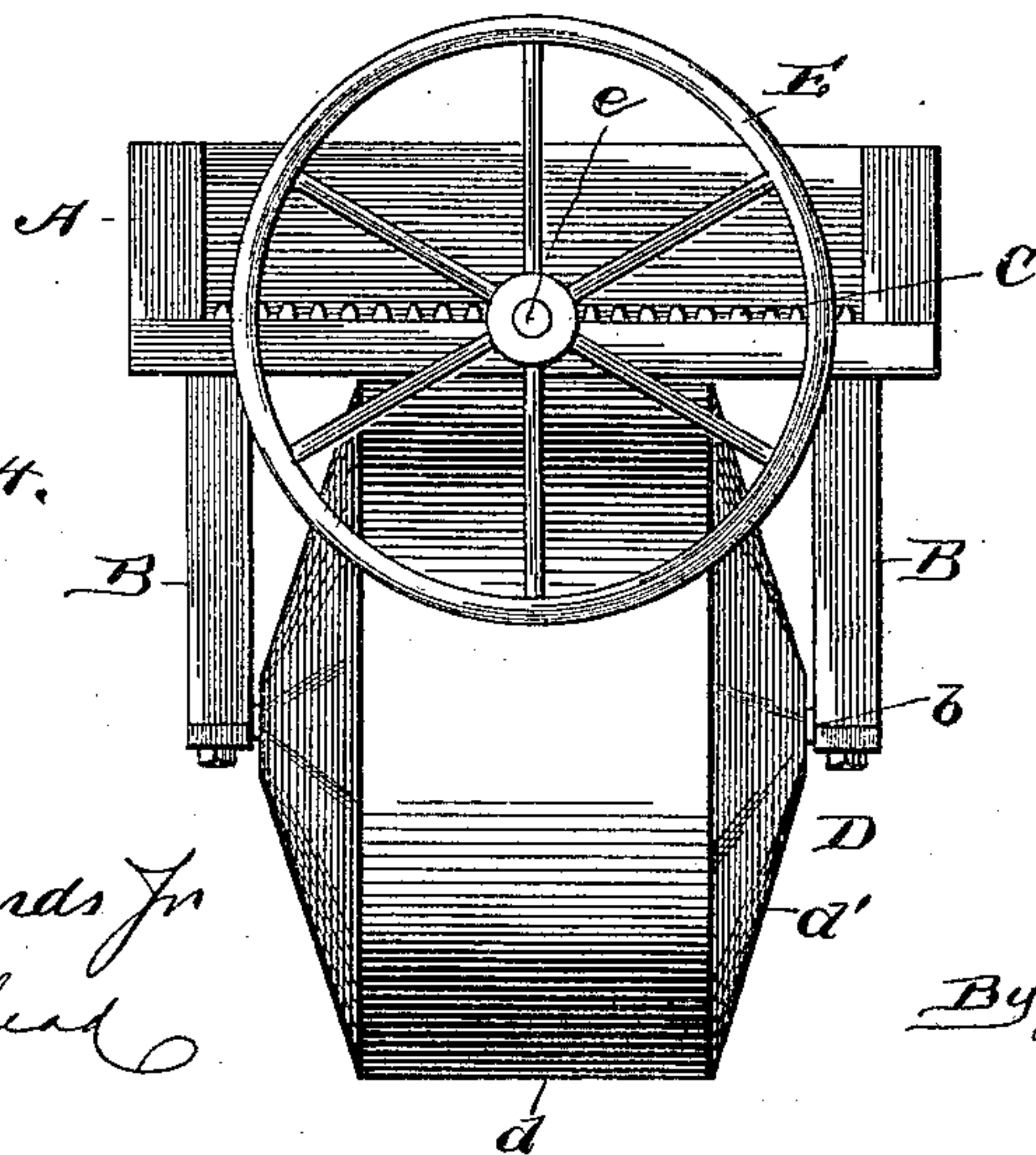


Fig. 4.



Witnesses
Am H. Edwards Jr
J. W. Motherhead

Inventor
James W. Humphreys
By Edson Bros.
Attorneys

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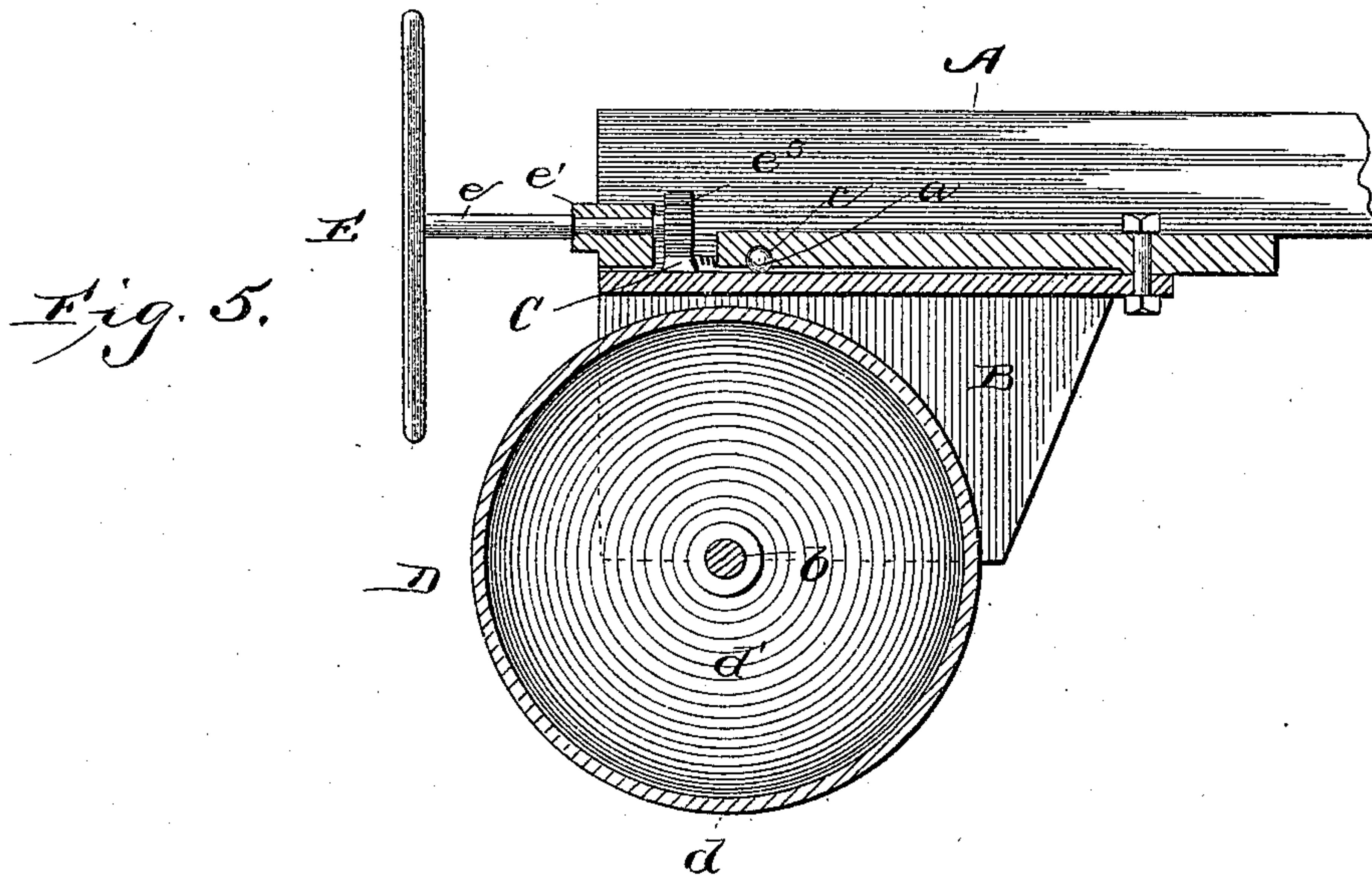
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Witnesses:
Wm. H. Edwards
J. W. Mothurshead

Inventor:
James W. Humphreys
By *Edson B. Pratt*
Attorneys

UNITED STATES PATENT OFFICE.

JAMES W. HUMPHREYS, OF IROQUOIS, ILLINOIS.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,688, dated July 19, 1898.

Application filed February 4, 1898. Serial No. 669,113. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. HUMPHREYS, a citizen of the United States, residing at Iroquois, in the county of Iroquois and State of Illinois, have invented certain new and useful Improvements in Ditching-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in ditching-machines.

It has for its object, among other things, to greatly simplify the construction and cheapen the cost of manufacture and to promote effectiveness and facility of operation of the machine.

To these ends the invention consists of the combination and arrangement of parts, including their construction, substantially as hereinafter more fully disclosed, and specifically pointed out in the claims.

In the accompanying drawings, illustrating the preferred form of carrying out my invention, Figure 1 is a side elevation of a ditching-machine embodying my invention. Fig. 2 is an enlarged side view of the invention. Fig. 3 is a plan view thereof. Fig. 4 is a front view of the same, and Fig. 5 is a central vertical longitudinal section.

A refers to the frame of a ditching-machine, of any desired form. Arranged upon the under side of said frame at its forward end portion are side pieces or bearings B, connected together frame-like, and upon the upper edges of these side pieces or bearings is secured a segmental rack C, suitably braced in position.

Around the concavity of the rack C is a race c, within which are arranged and suitably held in position non-frictional rolls or balls a a, upon which the frame A rests to facilitate the shifting of the same and lessen friction, the purpose of which will be apparent hereinafter.

D is a ditch-traversing wheel of the construction substantially as shown and having its axle b suitably journaled in boxes secured to the lower edges of the side pieces or bearings B, the tread d of said wheel being just slightly of less width than the ditch, with its

diverging sides d' pressing against the sides of the ditch at the surface, thus bracing the wheel in shifting or guiding the machine, as desired.

E is a hand steering or guiding wheel axially secured upon the forwardly and rearwardly extending shaft e, suitably journaled in bearings e', secured in the forward end of the frame A and at a point therein just beyond the front edges of the side pieces or pendants B, respectively, substantially as shown. The hand-wheel shaft e carries a pinion e³, engaging the rack c of the wheel-carrying bearings or side pieces B, whereby by suitably manipulating said handle-wheel, said bearings or side pieces serving as a fulcrum, the machine-frame A will be shifted or moved so as to permit the required guiding of the machine, as will be readily appreciated.

The various other parts herein shown may be, as above intimated, of any preferred form.

It will be noted that my invention is characteristic for simplicity of construction, therefore cheapening cost of manufacture, and for effectiveness and facility of operation among other things.

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

1. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack, and a steering wheel or shaft geared to said segmental rack, substantially as set forth.

2. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack and a race of non-frictional rolls or balls, and a steering wheel or shaft geared to said segmental rack, substantially as set forth.

3. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack, the hand-wheel shaft having a pinion geared to said segmental rack, substantially as set forth.

4. In a ditching-machine, the combination of the ditch-traversing wheel having its tread adapted to be of slightly less width than that

of the ditch, at the surface, and provided with diverging sides, the side pieces or bearings for the axle of said wheel provided with a segmental rack, and the handle-wheel shaft
5 geared to said segmental rack, substantially as specified.

5. In a ditching-machine, the combination of the frame, the axle-bearing side pieces provided with a segmental rack, the ditch-trav-
10 ersing wheel carried by said axle, and the handle-wheel shaft geared to said segmental

rack and having its bearings supported at the forward end of said frame and a short distance therein in front of said axle-bearing side pieces, respectively, substantially as
15 specified.

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

JAMES W. HUMPHREYS.

Witnesses:

W. H. JONES,

J. R. STRICKLER.