

No. 607,367.

Patented July 12, 1898.

R. B. HARDMAN.
APPARATUS FOR EXTRACTING OIL.

(Application filed Aug. 23, 1897.)

(No Model.)

2 Sheets—Sheet 1.

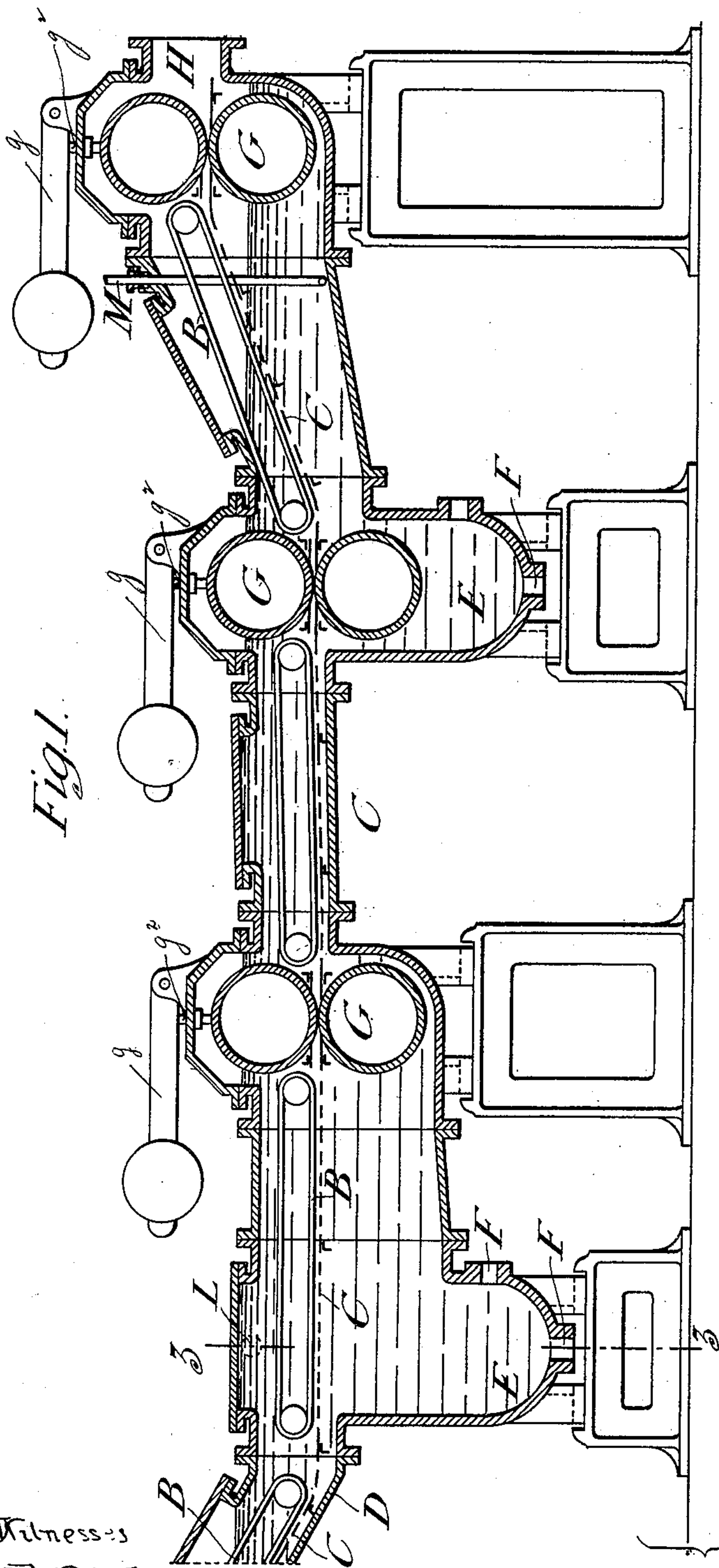


Fig. 1.

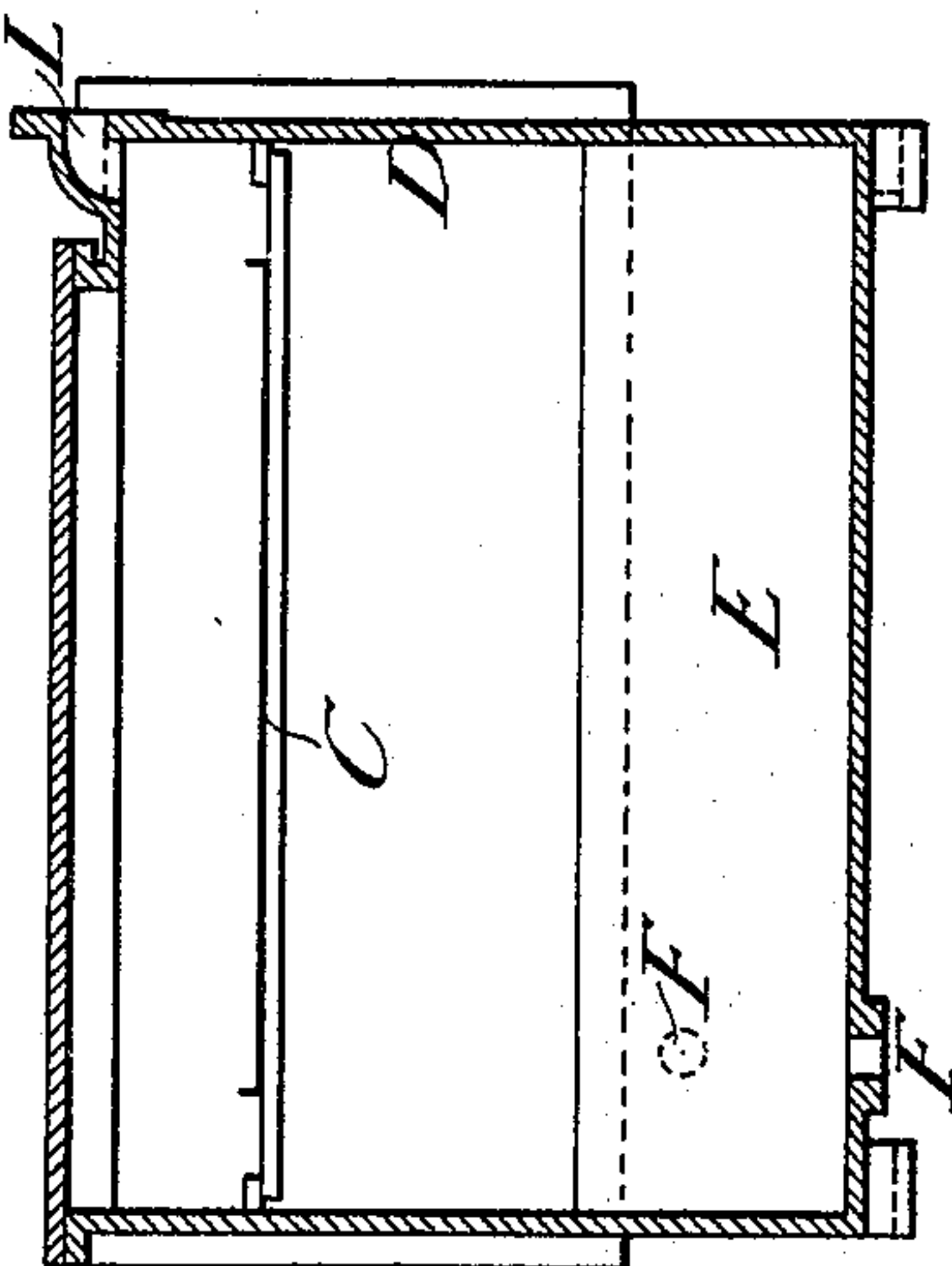


Fig. 3.

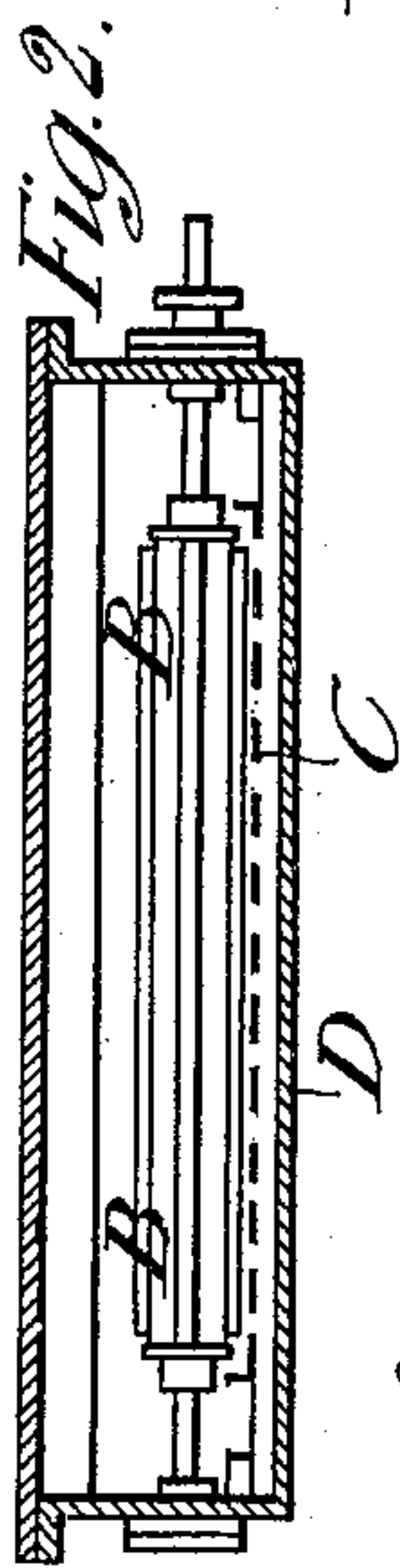


Fig. 2.

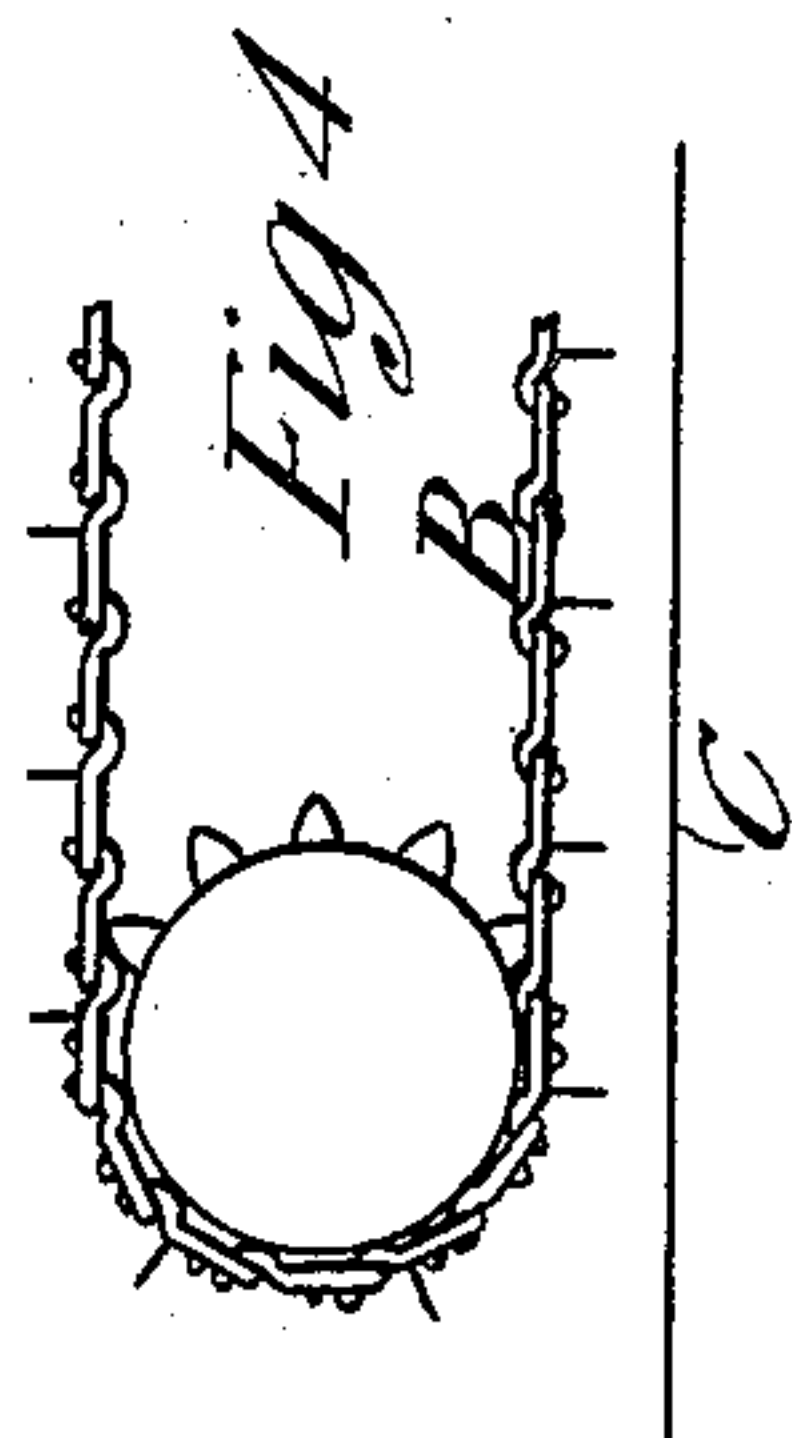
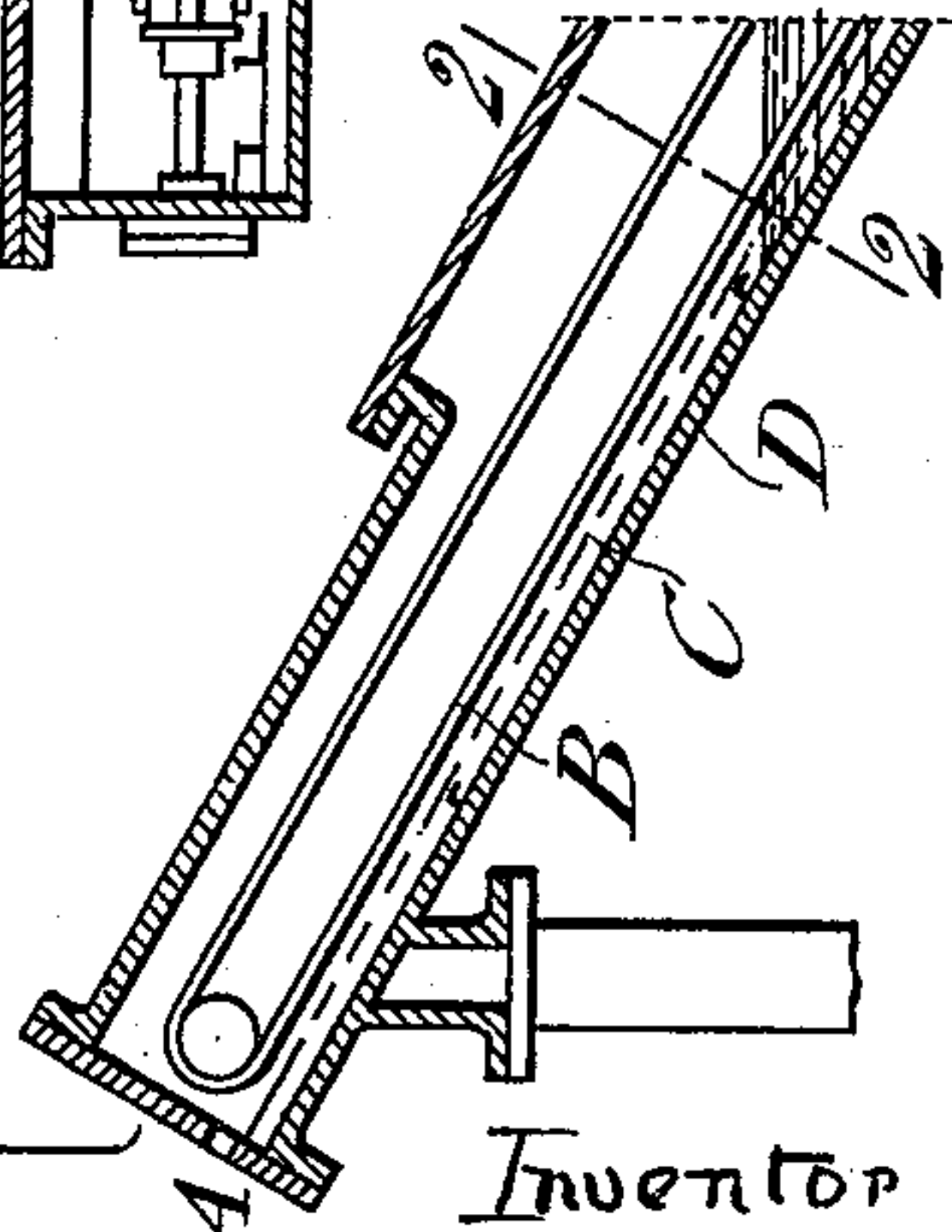


Fig. 4.



Witnesses

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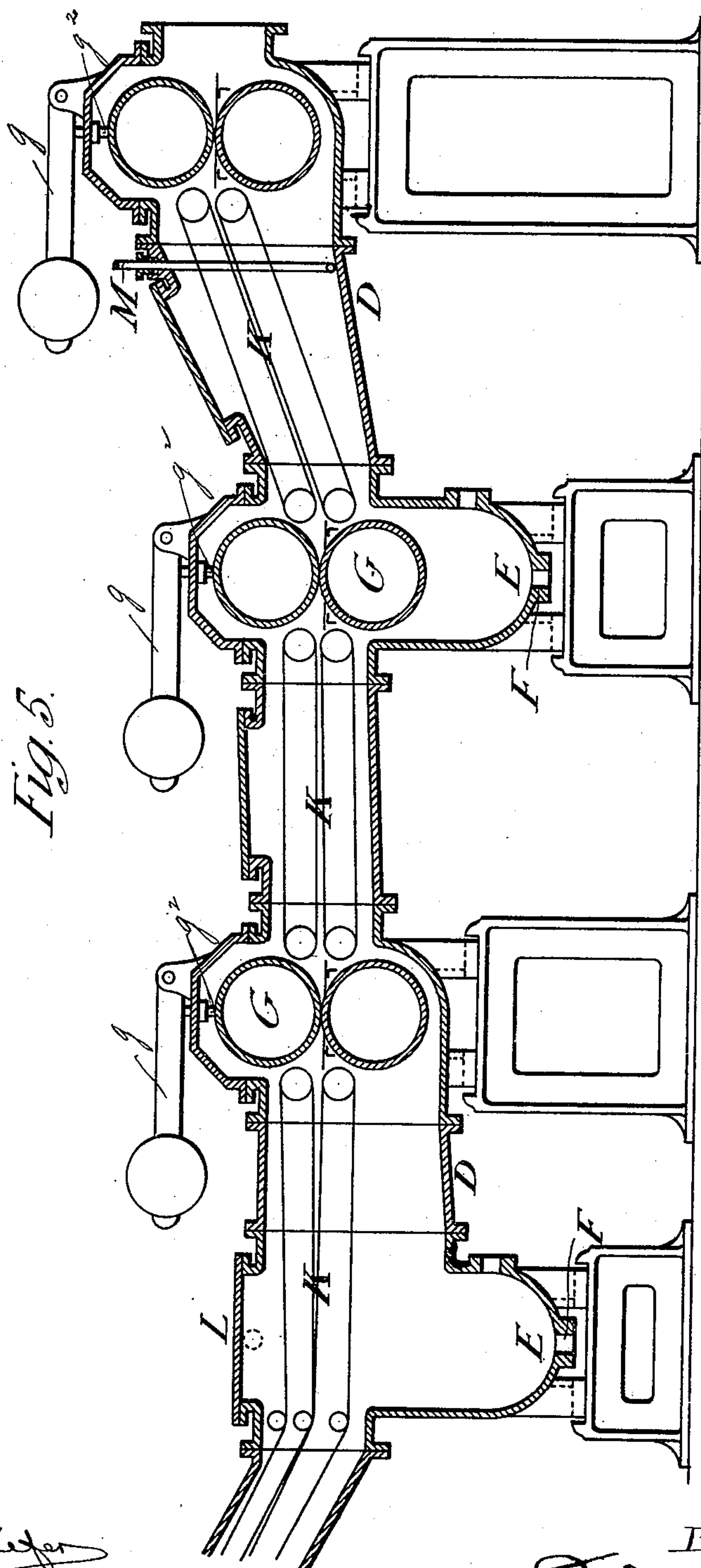
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2 Sheets—Sheet 2.



Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD B. HARDMAN, OF BURY, ENGLAND.

APPARATUS FOR EXTRACTING OIL.

SPECIFICATION forming part of Letters Patent No. 607,367, dated July 12, 1898.

Application filed August 23, 1897. Serial No. 649,247. (No model.)

To all whom it may concern:

Be it known that I, RICHARD BAMFORD HARDMAN, woolen manufacturer, a citizen of England, residing at Fernhill Mills, Bury, in the county of Lancaster, England, have invented new and useful Improvements in Apparatus for Clearing Fibers from Grease and Impurities, of which the following is a specification.

My invention relates to apparatus for clearing fibers, such as wool or cotton-waste, from grease and impurities. For this purpose I pass the fibers in form of a thick sliver through petroleum spirit, carbon bisulfid, or other suitable solvent contained in a closed tank, the sliver being moved along the floor of the tank by traveling chains or bands, with scrapers bearing on its upper surface. The traveling chains or bands are arranged with the pulleys, around which they pass, in sections, between each pair of which is an adjustable pair of pressing-rollers, through which the sliver is passed. Where the pressing-rollers occur, the tank is deepened, so as to provide recesses in which collect solid impurities squeezed out of the sliver. The sliver after passing along the tank issues between a final pair of pressing-rollers and may be then led to suitable drying apparatus.

Figure 1 of the accompanying drawings is a longitudinal section of fiber-clearing apparatus according to my invention. Figs. 2 and 3 are transverse sections on the lines 2 2 and 3 3, respectively, of Fig. 1. Fig. 4 shows, to an enlarged scale, the chain-wheel and part of the traveling chain. Fig. 5 is a longitudinal section of a modification.

Referring first to Figs. 1 to 4, inclusive, the sliver of fiber to be cleansed being fed at A is carried onward by the spiked traveling chains B over a perforated floor C through the spirit in the tank D, which has deep places E for deposit of impurities, these deep places having opening F for emptying them provided with suitable cocks or valves. (Not shown.) The sliver in its course passes between pairs of pressing-rollers G and finally issues from the tank at H and is conveyed to a heated chamber, where the spirit is evaporated from

it and led to a condenser to be recovered. The upper pressure-rollers G are mounted in yielding bearings, (not shown,) which may be of any usual or suitable construction and are held down upon the sliver with a yielding pressure by weighted levers *g*, which bear upon vertical rods or arms *g*², which in turn rest upon the bearings of the upper rollers G.

In the modification shown in Fig. 5 instead of the chains for moving the sliver pairs of endless traveling pervious aprons K are employed, the sliver being carried between them.

The solvent is introduced into the apparatus through a pipe M near the last pair of pressing-rollers and overflows through a pipe L back to a retort, carrying with it the greasy matters which have been extracted from the material passed through the machine. The solvent is then evaporated and after being condensed returns to the supply-pipe M, a constant circulation of solvent being thus maintained.

Having thus described the nature of this invention and the best means I know for carrying the same into practical effect, I claim—

In an apparatus for clearing fibers from grease and impurities, the combination with a continuous tank having an inlet at one end and an overflow at the other end and arranged to permit an uninterrupted flow of solvent from the fiber-discharge end to the fiber-feed end thereof, of perforated flooring arranged in the tank, a series of spiked endless carriers successively arranged in the tank above the perforated flooring and operating to drag the fibers thereover, pressing-rollers arranged between the adjacent ends of the endless carriers, and deep pockets formed in the bottom of the tank beneath the pressing-rollers for collecting solid impurities, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of August, A. D. 1897.

RICHARD B. HARDMAN.

Witnesses:

ROBERT JACKSON,

GEORGE DENIS HARDMAN.