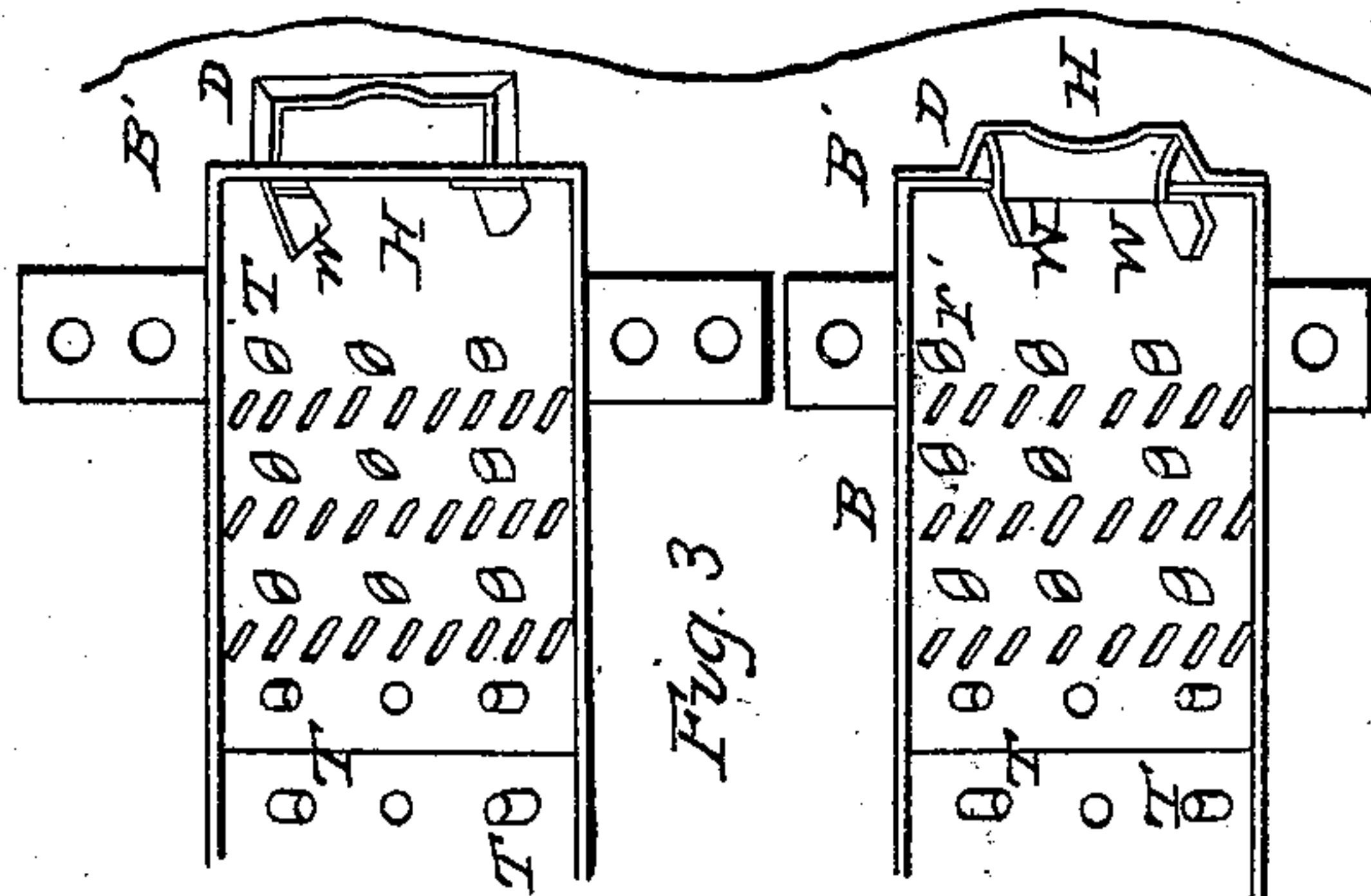
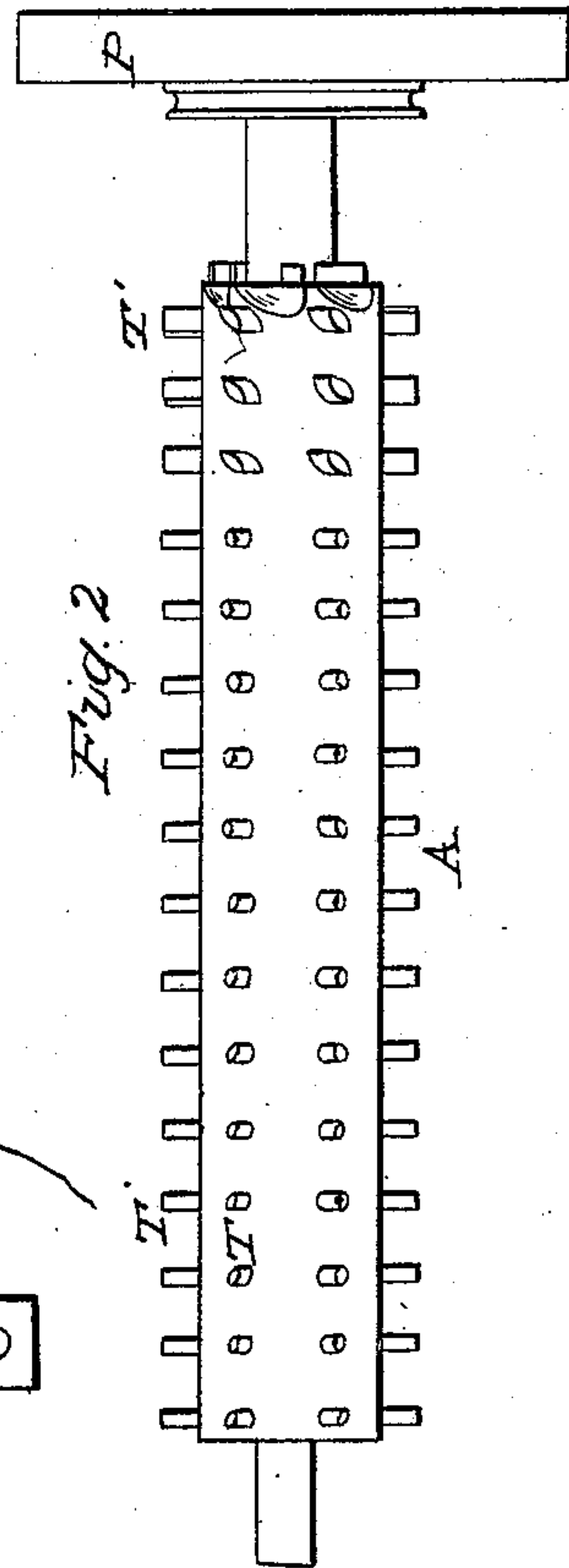
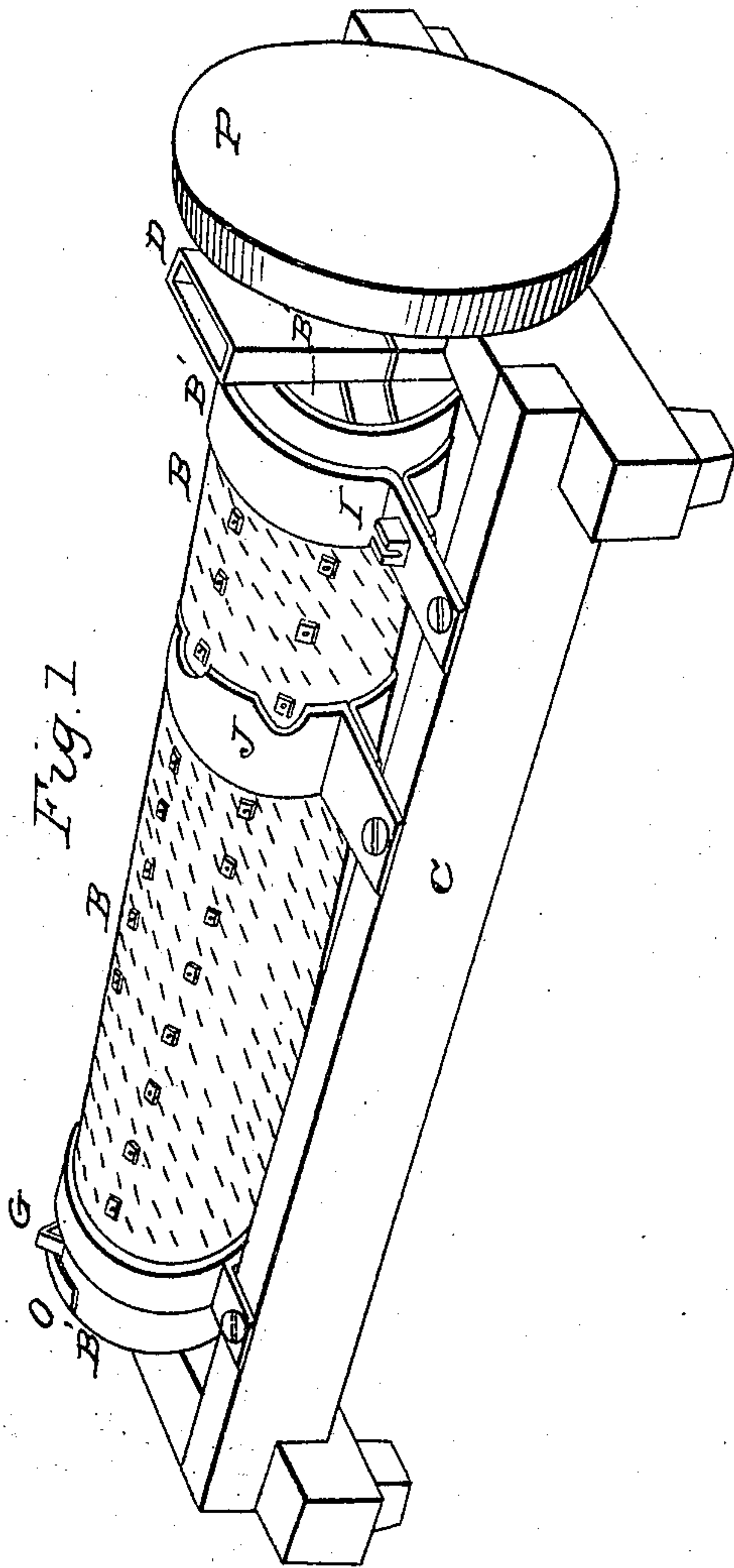


D. TOMLINSON.
Clover Huller.

No. 1,602.

Patented May 12, 1840.



UNITED STATES PATENT OFFICE.

DANIEL TOMLINSON, OF BROOKFIELD, CONNECTICUT.

CONSTRUCTION OF MACHINERY FOR HULLING RICE, &c.

Specification of Letters Patent No. 1,602, dated May 12, 1840.

To all whom it may concern:

Be it known that I, DANIEL TOMLINSON, of Brookfield, in the county of Fairfield and State of Connecticut, have invented a new and useful Machine for Hulling Rice, Barley, Clover-Seed, &c., and for Scouring and Cleaning all Kinds of Grain, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a view of the revolving cylinder detached from the case. Fig. 3 is a view of the inside of the parts of the case next the feeding end.

Similar letters refer to similar parts in the figures.

The machine consists of a cylindrical case B, of sheet iron or other metal, about 4 feet long and 6 or 7 inches in diameter, lying horizontally and fastened to a frame c, the inner surface of which cylinder is set throughout with teeth T pointing toward the center and are placed in rows both lengthwise of the cylinder and at right angles thereto around the inside, the teeth being about three fourths of an inch long, five sixths of them being round and about half an inch or more in diameter. The remaining one sixth T' next the feeding end, are of the same length—about one inch wide—thin at the edges and thick in the middle. For a six inch cylinder six longitudinal rows of teeth are believed to be sufficient. For a cylinder of seven inches seven rows, and so on in proportion, which will make the rows about three inches apart longitudinally and 2 inches apart around the inside. The wide teeth T' are placed at the feeding end of the case and make from four to six of the circular rows and stand obliquely, say at an angle of about 45 degrees with the axis of the cylinder. These teeth may be called flights or drivers, their office being to force the grain forward into the cylindrical case and give it the required pressure. The remaining teeth T which fill out the rest of the cylindrical case to the discharging end (making some twenty or more circular rows) are round and smooth, and may be called workers, it being their office to perform the rubbing or abrasion while under the requisite degree of pressure. This case has a head B' B'' on either end; that at the receiving or feeding end has a hole H through it of such diameter or size as to

admit the requisite quantity of grain, which opening may be in the center of the case, the shaft of the cylinder passing through it. On the inside of this head are fixed about six oblique wings W or teeth for the same purpose of conveying and forcing the grain into the case. To said opening H in the head is adjusted an upright spout or conductor D, through which the grain is conveyed from the ordinary hopper and then into the case. The head B'' at the discharging end has an opening in its center for the shaft or bearing of the cylinder to pass through. The issue or discharging aperture O is at this end and may be on one side about one inch in width and three inches long, beginning near the top and descending on one side, furnished with a sliding gate G, whereby it may be enlarged, diminished, or closed at pleasure. This cylindrical case for most purposes is perforated over its surface with oblong apertures—say half an inch long and one twentieth of an inch wide for the escape of the dust and dirt, but are not to be so large as to suffer the grain to pass through.

As the machine is liable to become clogged by the admission of damp grain or by accidentally closing the discharging issue, the friction thereby may produce so much heat as to reduce the grain to a paste, and thus clog the machine, which on becoming cool is very difficult to remove, therefore the case should be made in three parts, in order to gain ready access to the interior, in the following manner: Cut off the end where the grain enters, say about one third the length of the case, and divide this part lengthwise into two parts B', Fig. 3, and let these parts be fastened together by semi-circular clamp bands I with perforated ears and screws and nuts so as to again form a perfect cylindrical case, and by unscrewing the nuts said case can be easily taken apart and the obstructions removed from that part of it which is liable to become clogged. The case is further strengthened by clamp hooks J of such shape and structure that by them it may be fastened to a suitable frame C of the requisite size and strength, or to any place in which it is designed to operate.

The revolving cylinder A for pressing and rubbing the grain is made of sheet or cast iron with a strong shaft or journal on which it turns in the center of the case, being about two inches less in diameter than

the case and about two or three inches shorter, so as to allow it to turn easily within the caps. The outer surface of this cylinder is covered with teeth T T' of the same description as those of the case, there being the same number of rows of teeth running lengthwise, and the same, or an additional number around the cylinder, the circular rows being the same distance apart as in the case, but set so as to alternate with them, so that the teeth of the cylinder, when it revolves shall pass those of the case at an equal distance on either side, leaving a space between of about one fourth of an inch. There is the same number of circular rows of wide teeth T' placed at the same end of the cylinder as in the case and turned obliquely at the same angle, but reversed as regards those of the outer cylindrical case, the lines of direction of those on one crossing those of the other at about right angles. The rows of teeth running lengthwise must in the case or cylinder run a little oblique or spiral, otherwise, there being the same number of rows of teeth in each, they will all pass each other at the same instant, and when under a heavy pressure will require an immense power to propel the machine. On the end of this cylinder where the grain enters are wings like those inside the case at the same end, but reversed in position, for the same purpose of urging the grain forward into the machine. On the shaft or journal of this cylinder is a large pulley F for a band to drive or turn it, and other pulleys or gearing for the purpose of agitating the shoe, driving a blower, or for any other purpose that may

be needed in any application of the machine to various purposes. The other fixtures of the machine are a hopper and shoe like those of a grist mill to convey the grain into the machine, with a coarse riddle on the shoe to prevent any large and hard substances passing into the machine which would be liable to break the teeth.

The machine may be made of larger or smaller dimensions, or its parts may bear different proportions to each other from those above described to suit the purpose to which it is to be applied, or the material to be operated on.

The utility of this invention consists chiefly in giving the material to be scoured any required degree of pressure during its action and continuing the same for any length of time that may be required to render its operation perfect, by the combined action of the wide and slanting teeth, and the enlarging or diminishing the space by means of the sliding gate.

What I claim as my invention and wish to secure by Letters Patent is—

The before described mode of producing any desirable amount of pressure on the material to be hulled, or cleaned, and continuing the same through the whole length of the cylinder, by the combined operation of the oblique teeth, the round teeth, and the sliding gate or issue, effected continually during the operation of the machine.

DANIEL TOMLINSON.

Witnesses:

WM. P. ELLIOT,
E. MAHER.