

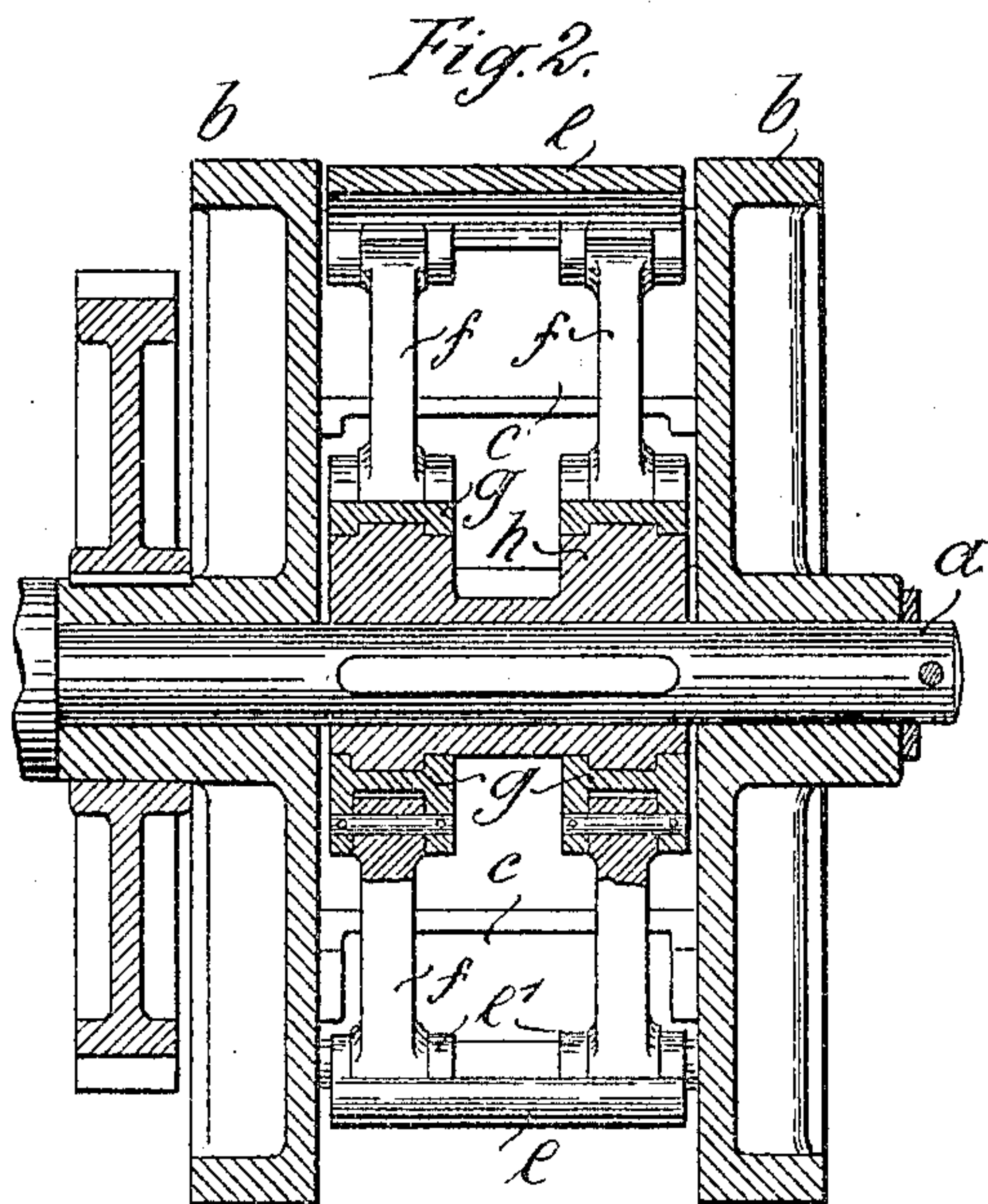
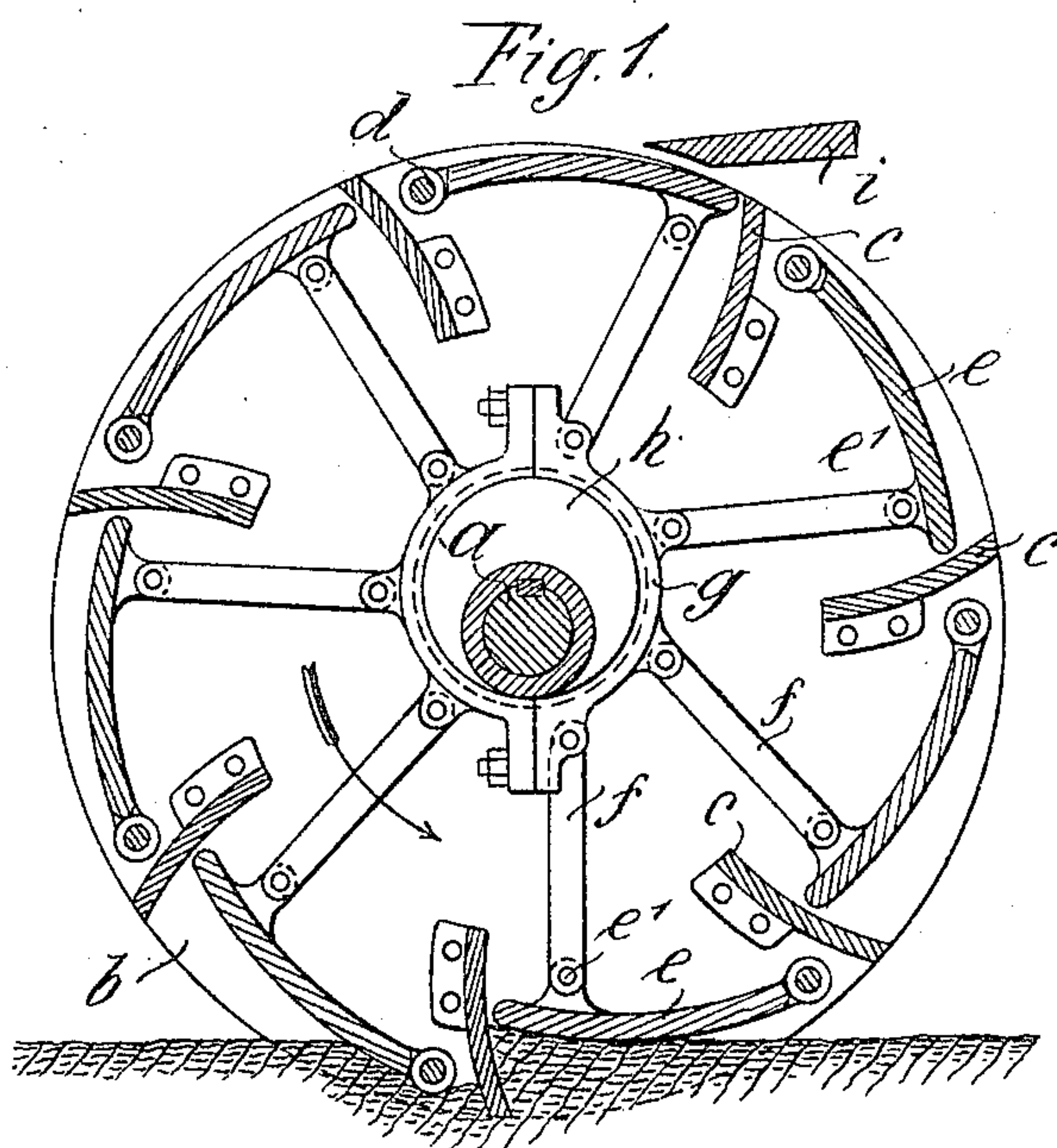
No. 812,600.

PATENTED FEB. 13, 1906.

H. SCHNELL.
WHEEL FOR PLOW LOCOMOTIVES.

APPLICATION FILED MAR. 29, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

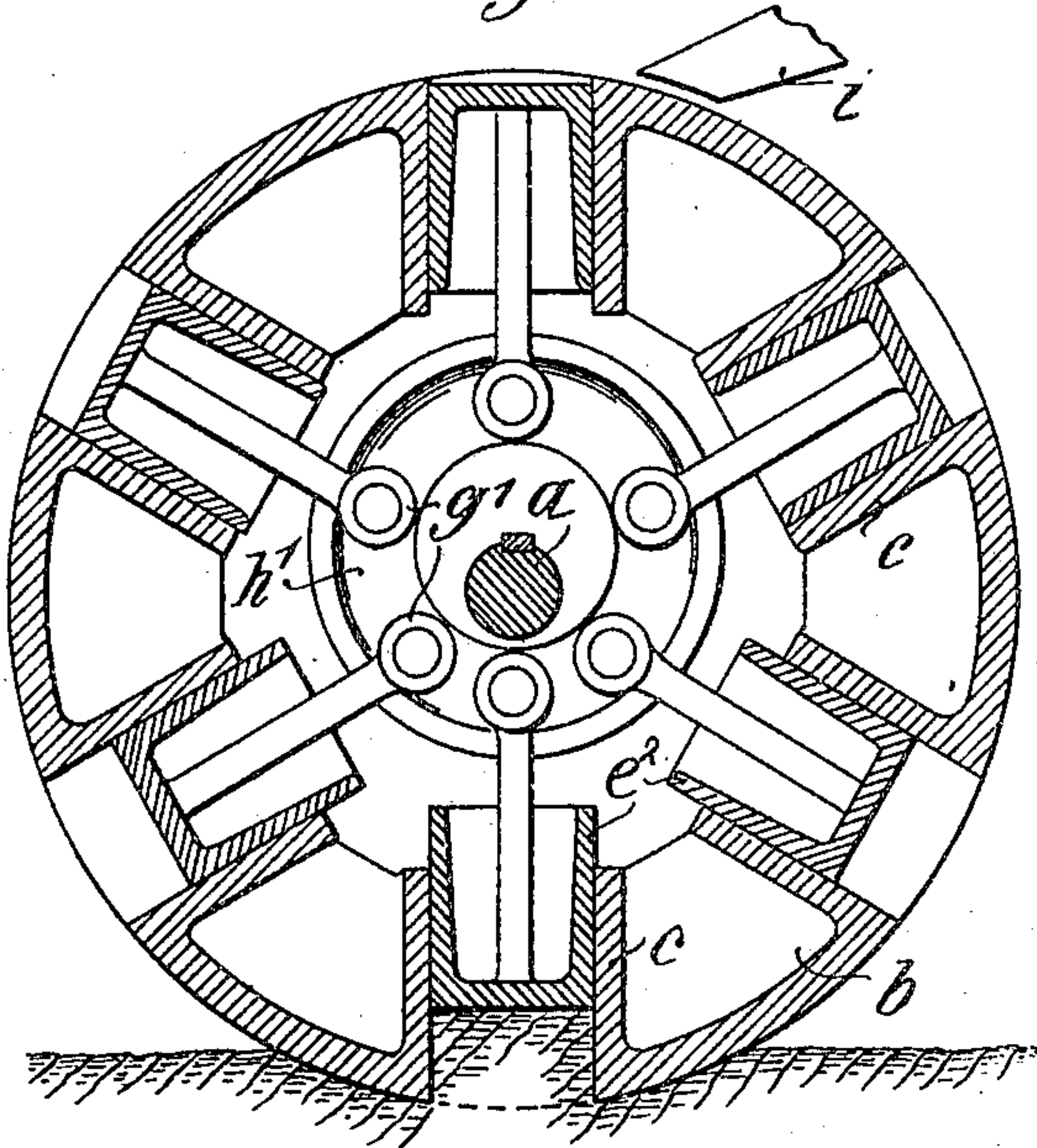
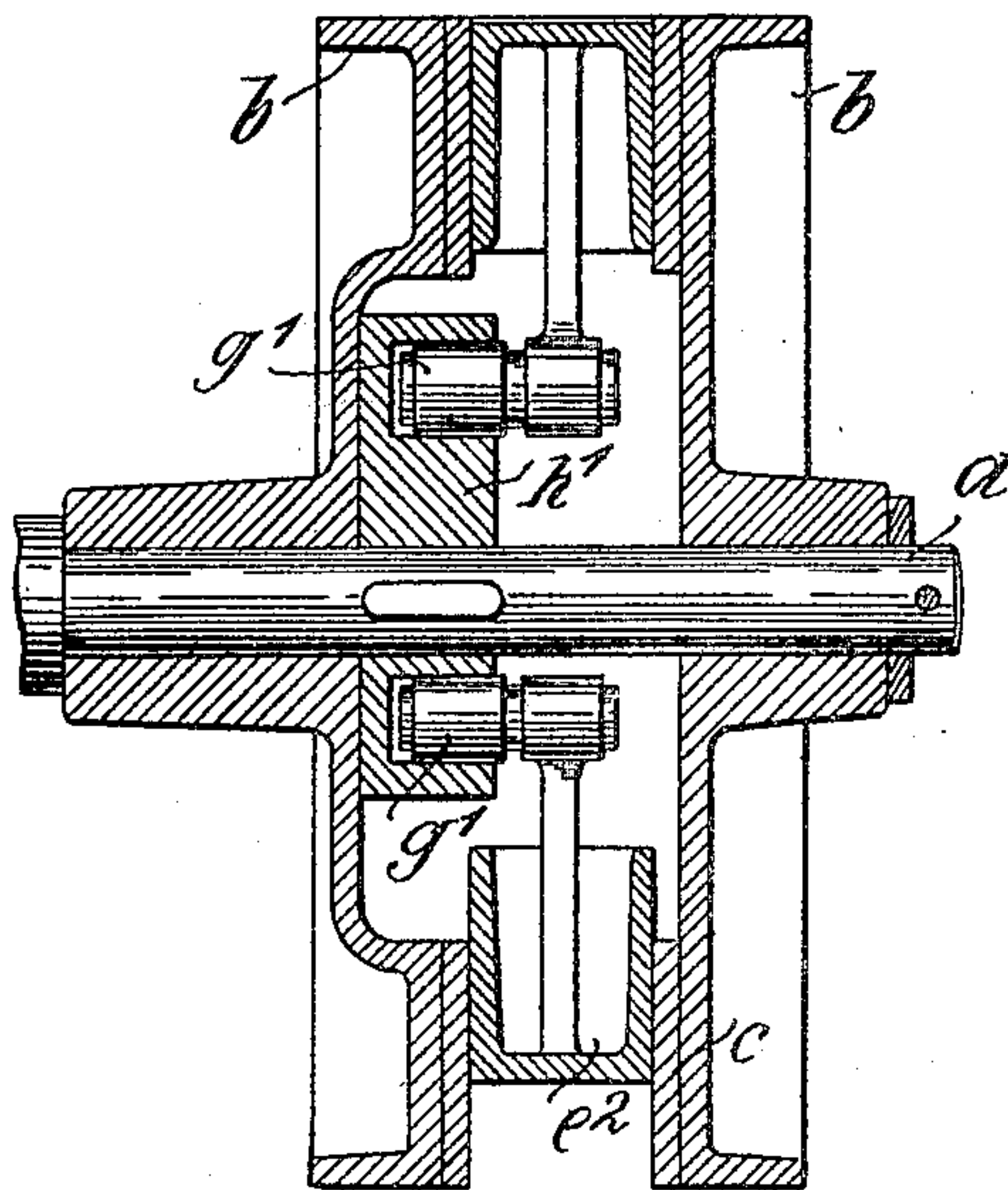


Fig. 4.



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UNITED STATES PATENT OFFICE.

HEINRICH SCHNELL, OF COLOGNE, GERMANY.

WHEEL FOR PLOW-LOCOMOTIVES.

No. 812,600.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed March 29, 1905. Serial No. 252,662.

To all whom it may concern:

Be it known that I, HEINRICH SCHNELL, retired civil servant, a subject of the German Emperor, residing at 20 Cuniberts-kloster, Cologne, in the Empire of Germany, have invented certain new and useful Improvements in Wheels for Plow-Locomotives and the Like, of which the following is a specification.

It is known that in transportable machines in which a driving impulse is obtained from the traveling or ground wheels slipping of the driving-wheel on its path or track may be prevented by means of projections. This is especially applicable to plow-locomotives which exert a powerful traction effect and are obliged to travel over loose ground. It is also known that the earth which penetrates between the projections and consequently tends to nullify the desired effect, may be removed by making the projections displaceable or yielding, so that they clean themselves, or by providing special cleaning devices for use with fixed teeth. The first means does not offer adequate security against injury, while the second means necessitates a special device and, moreover, presents the defect that it is impossible to travel upon roads or other hard tracks without producing shaking and vibration, which is detrimental to the machine.

The object of the present invention is to retain the advantages of both methods without their disadvantages. The increased friction or hold upon the ground is obtained owing to the fact that transverse connections between the sides of the running surfaces or treads form box-shaped cavities into which the earth penetrates when the said cavities are successively brought into position, it being seen that the flaps or plungers which will occupy a rearmost position in the said cavities upon that part of the wheel which is resting upon the ground upon the further rotation of the wheel are gradually forced out automatically to the periphery of the wheel, ejecting the earth from the box-like cavities, and thereby cleaning the same. Meanwhile the smooth side faces always present a continuous surface, so that even upon a hard road the progress of the machine does not give rise to shaking.

Referring to the accompanying drawings, Figure 1 represents a vertical section of a wheel embodying my invention. Fig. 2 represents a vertical section thereof, taken at right angles to that shown in Fig. 1. Figs. 3

and 4 represent vertical sectional views, respectively, of a different form of construction which may be employed, the sections being taken at substantially right angles to each other.

Upon the axle *a*, which is rigidly fixed to the frame, the two wheel disks or members *b* are loosely mounted and are connected one with the other by any suitable transverse connections—for instance, by the yokes *c* and bolts *d*. Upon the bolts are mounted flap-like rockers *e*, which move over the yokes *c*. They are connected by articulations *e'* and rods *f* with an eccentric-collar *g*, which slides upon an eccentric *h*, fixed to the axle. The eccentric is so placed that its eccentricity is entirely or almost entirely above the axle. During the rotation of the wheel the flaps *e* therefore execute such a movement that they lie inward when they reach the lowest part of the wheel by which means box-like cavities are formed between the exposed lateral portions of the wheel and the yokes *c*, while during the upward movement they are simultaneously displaced by the action of the eccentric more and more toward the circumference of the wheel until they have passed over the entire yoke-surface, and thus again fill the cavities. In the movement of the wheel in the direction indicated by the arrow when the flaps reach the lowest part of the wheel from above downward the earth penetrates the cavities so formed, thus imparting increased resistance to slip to the wheel. When the flaps move from the lowest to the highest point of the wheel and at the same time outward, they force the earth out of the cavities and clean the yokes *c* from any sand or the like that may adhere to them. In the foregoing it has been assumed that the earth will fall out of the cavities automatically, owing to the movement of the flaps, as its adhesion to the lateral walls of the wheel *b b* and to the yokes *c* is thereby prevented or destroyed. If it is feared that owing to persistent adhesion to the flaps *e* the earth will not fall out, a scraper *i*, firmly fixed to the frame, may also be employed.

Instead of the eccentric shown in Figs. 1 and 2 cranks or other appropriate actuating devices for the flaps may be employed.

In Figs. 3 and 4, which show another constructional form, the box-like cavities present a cylindrical or prismatic shape and are alternately exposed and filled by cylindrical or prismatic pistons *e'*. In this case the pistons

are caused to move inward and outward by means of cam disks h' and rollers g' .

In order to obtain the largest possible bearing-surface for the wheel for traveling over
5 hard ground, where there is no danger of slipping, it is advantageous in such cases to prevent the action of the cavities on the road and it is preferable to use a construction similar to that first described, pistons, or the like as
10 part of the bearing-surface or tread. This may be effected by altering the position of the eccentric, Figs. 1 and 2, or of the cam, Figs. 3 and 4, by a half-revolution, so that the flaps or pistons will fill the cavities in the
15 lowest part of the wheel instead of in the highest part, as before.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the character described,
20 side bearings, transverse connections between said bearings forming box-like cavities, automatically-movable plungers suitably arranged for ejecting the earth from the cavities and thereby cleaning the same and means

for positively actuating said plungers in both 25 directions.

2. In a device of the character described, side bearings, transverse connections for said side bearings, means pivotally mounted between said connections adapted to be moved 30 inwardly and outwardly and means embodying an eccentric about the axle connected with said first-mentioned means for positively actuating the same.

3. In a device of the character described, 35 side bearings, connections between the same, a shaft on which said bearings are mounted, an eccentric mounted on said shaft, displaceable pivotally-mounted plungers and means actuated by said eccentric for moving said 40 plungers inwardly and outwardly.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HEINRICH SCHNELL.

Witnesses:

ALOIS LIEBER,
WOLDEMAR HAUPT.