D. P. SHARP.

Horse Hay-Rake.

No. 161,358. Patented March 30, 1875.

Fig. 1.

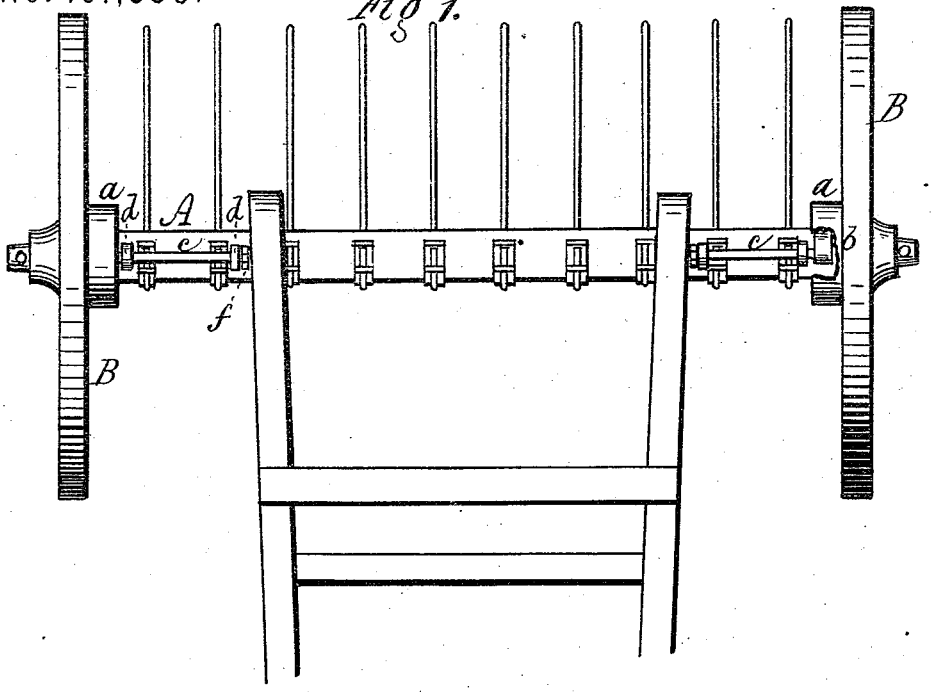

Fig. 2.

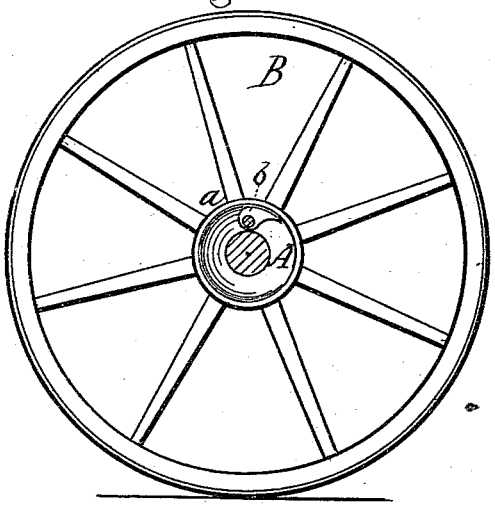

Fig. 3.

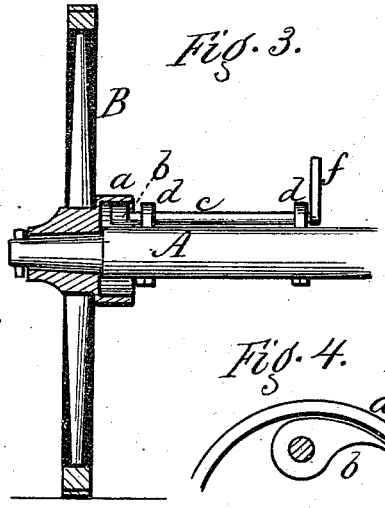

Fig. 4.

Witnesses.
Edwin. B. Scott.
Louis Spahn.

Inventor.
Dennis P. Sharp,
per R. F. Osgood,
Atty.

UNITED STATES PATENT OFFICE.

DENNIS P. SHARP, OF ITHACA, NEW YORK.

IMPROVEMENT IN HORSE HAY-RAKES.

Specification forming part of Letters Patent No. **161,358**, dated March 30, 1875; application filed February 11, 1875.

To all whom it may concern:

Be it known that I, DENNIS P. SHARP, of Ithaca, in the county of Tompkins and State of New York, have invented a certain new and useful Improvement in Horse-Rakes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of a horse-rake with my improvement applied thereto. Fig. 2 is a cross-section. Fig. 3 is a longitudinal section. Fig. 4 is a detail view.

My improvement belongs to that class in which the rake-teeth are raised to dump the load by means of friction-brakes or connections which are applied to the wheels. Various devices operating on this principle are known.

In some, shoes are used, resting above the wheel, which are brought in contact therewith to accomplish the object. In others, flexible straps are made to embrace the hub of the wheel. In others still, a movable collar or bearing is used on the axle, which slides in contact with the end of the hub, and engages with ratchet-teeth of the latter. Such devices are expensive in construction, and are liable to disarrangement, and in engaging with the wheel a sudden shock is produced, which frequently causes breakage or strain upon the parts.

My invention consists essentially in combining with the wheel and axle a circular rim of the former, and a friction-pad of the latter, the one resting within the other, and producing the connection by simply turning the pad up against the inner periphery of the rim.

A represents the axle, and B B the wheels. The wheels turn free on the axle. On the inner side of each wheel is fastened a cylindrical rim, *a*, hollow on its inside. Within this, and on one side of the axle, rests a friction-pad or eccentric, *b*, the face of which is a curve approximating the circle of the rim, and extends back some distance, as shown, so that when brought in contact with the inner periphery it will have considerable frictional contact. This pad is attached to a shaft, *c*, which extends outward, and rests in eyebolts *d d*, attached to the axle, as shown. The end of the shaft is provided with a crank-arm, *f*, to which is attached a cord or chain, extending forward to a lever, treadle, or other device under the control of the operator. When he draws upon the connection the friction-pad will be drawn up against the inner periphery of the rim, and the friction will cause the wheel to give motion to the axle, so as to raise the rake-teeth, and dump the load. When the connection is released, the friction-pad drops back away from the rim, and the teeth fall to their original position. I prefer to employ one of these friction-pads at each end of the machine.

The object of my invention is to simplify and reduce the cost. I avoid all ratchet-wheels, levers, joints, and other connections, which are necessary in the devices now in use. The only things necessary to use are the rim and friction-pad with its shaft. The rake is free to be drawn forward or backed up without impediment.

The rim furnishes a housing over the friction-pad, by which the latter is free from dirt, hay, and other matters, which are thrown up and collect obstructing devices which are located outside. I also avoid the shock and consequent strain which occur in common rakes, where a locking device is brought into a positive engagement with ratchet-teeth on the hub.

This device is more sensitive and quicker in action than friction-brakes applied on the rim of the wheel, since the circle upon which it acts is smaller.

I do not claim, broadly, a friction-brake for connecting the axle with the wheel. Neither do I claim a sliding bearing for engaging with the end of the hub, nor straps around the hubs.

What I claim as new is—

The combination, with the axle A and wheel B, of a rim, *a*, formed on the wheel, and the friction-pad *b* on the axle, resting therein, the connection being made by turning the pad against the inner periphery of the rim, as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DENNIS P. SHARP.

Witnesses:

R. F. OSGOOD,

EDWIN B. SCOTT.