3 Sheets—Sheet 1.

P. PARROTT.

Thrashing-Machines.

No. 209,708. Patented Nov. 5, 1878.

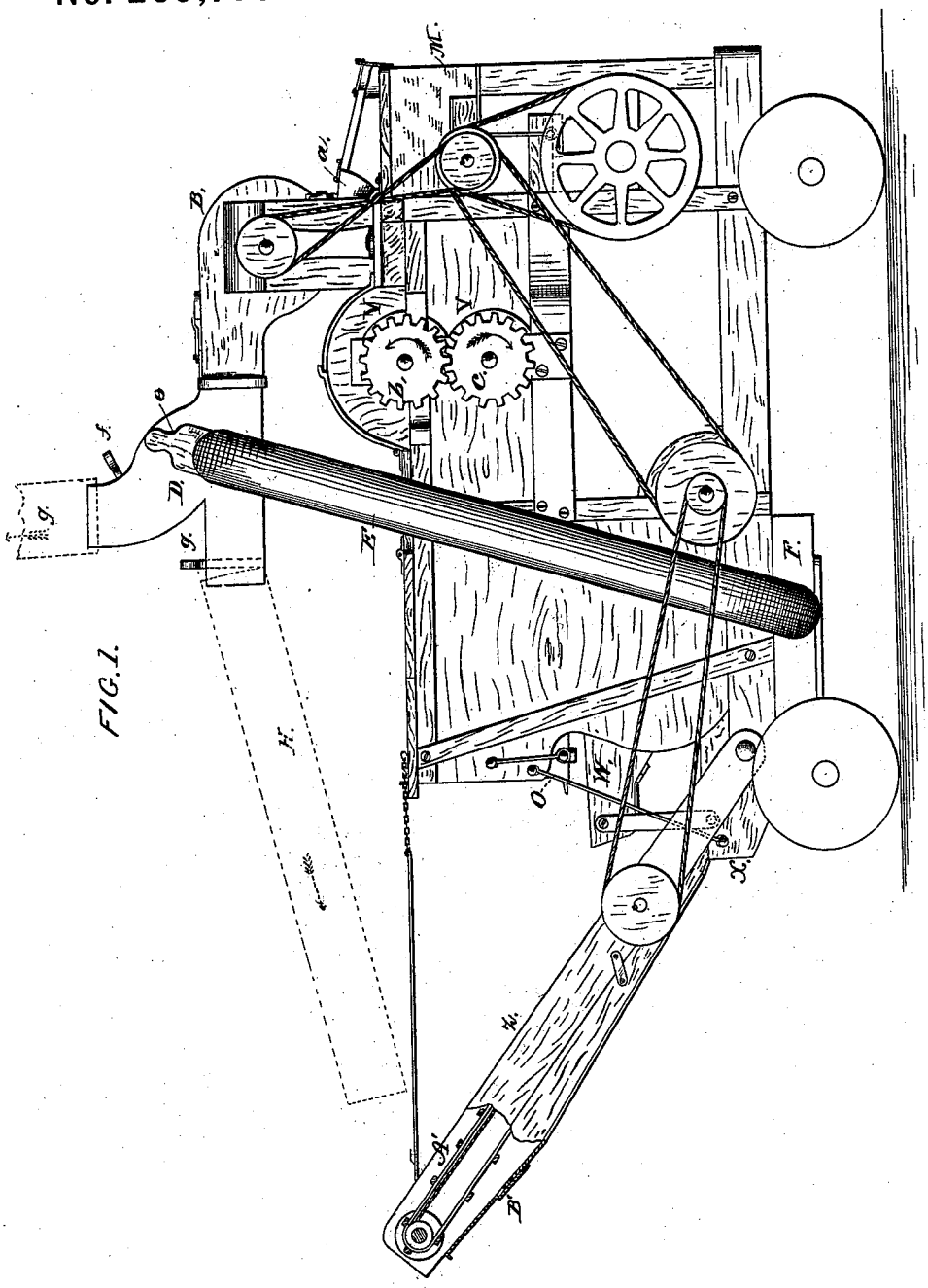

FIG. 1.

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FIG. 2.

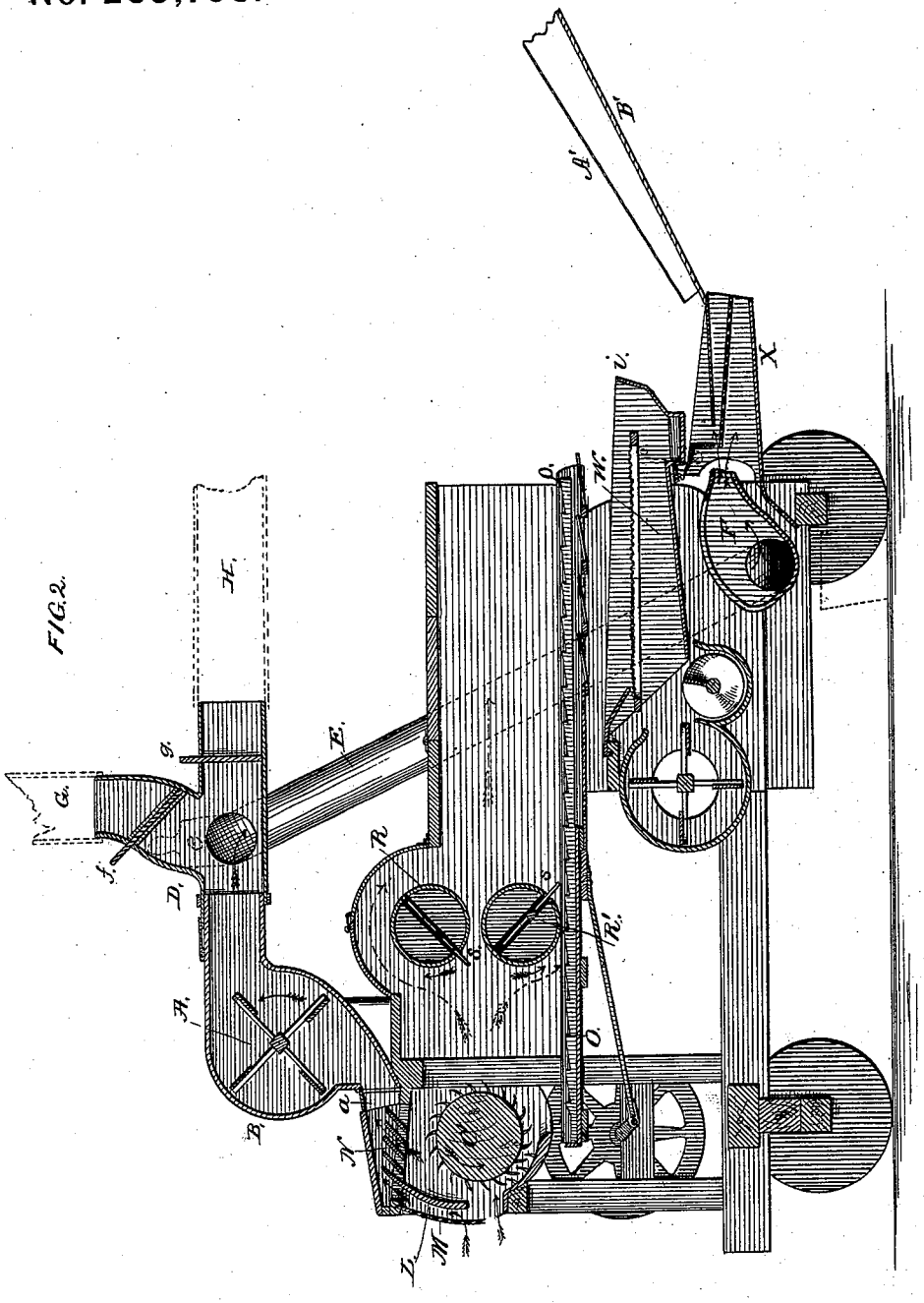

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FIG. 3.

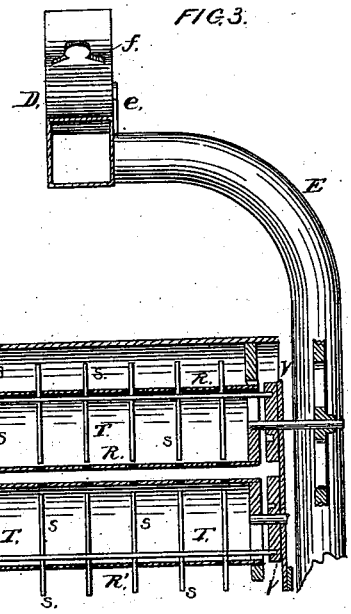


FIG. 5.

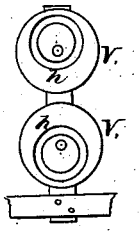
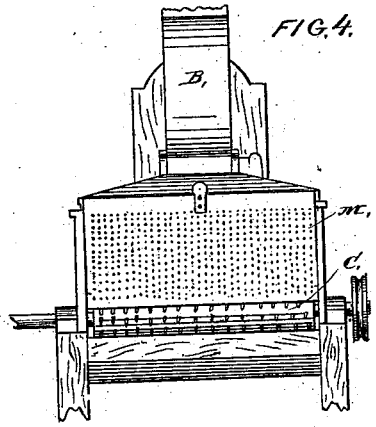


FIG. 4.



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UNITED STATES PATENT OFFICE.

PETER PARROTT, OF RED BUD, ILLINOIS.

IMPROVEMENT IN THRASHING-MACHINES.

Specification forming part of Letters Patent No. **209,708**, dated November 5, 1878; application filed June 13, 1878.

To all whom it may concern:

Be it known that I, PETER PARROTT, of Red Bud, in the county of Randolph and State of Illinois, have invented a new and Improved Combined Thrasher and Grain-Separator; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of thrashing-machines having an attachment for removing dust from the space in front of the cylinder, and having pickers for loosening or shaking the grain from straw delivered from the cylinder.

The improvement consists in the construction and arrangement of parts, as hereinafter described and claimed.

In the accompanying drawing, Figure 1 is a side elevation of my improved machine, except a part of the straw-elevator, which is in section. Fig. 2 is a central vertical longitudinal section of the machine. Fig. 3 is a detail cross-section. Fig. 4 is a detail elevation of the front of the machine. Fig. 5 is a detail view of the cam for operating the fingers or teeth of the straw-pickers.

The same letters denote the same parts in the several figures.

The dust arising from the grain while the gavel-bands are being cut and it is being fed to the thrashing-cylinder, also while it is being acted on by the latter, is very annoying and likewise injurious to the workmen. I propose to remove it or draw it away both from the space in front of the thrasher and from the space surrounding the toothed cylinder by means of a revolving fan, A, Fig. 2, which is placed within a suitable drum, B, located nearly over the thrashing-cylinder C, and to discharge it through a hollow head, D, Figs. 1, 2, 3, in one of three directions through any one of a corresponding number of tubes—to wit, through the bent or curved tube E, (shown in full lines,) which extends laterally and downward to an air-chamber, F, located in the lower rear portion of the machine, where it is disposed of, as will be hereinafter described, or it is discharged into the air through a short vertical tube, G, or through a longer horizontal tube, H, which extends to the upper end of the straw-carrier, both of which tubes G H are shown in dotted lines, Figs. 1 and 2. The head D is constructed with hollow legs or branches, to adapt it for attachment of the aforesaid tubes, and provided with slides *e f g*, to regulate admission of the blasts to them.

Directly opposite the front and upper portion of the cylinder C is a transverse board or guard-plate, L, and in front of that is a perforated board or plate, M, Figs. 2 and 4. The dust-laden air in front of the machine passes through the perforated plate M into the narrow space between it and the imperforate guard-plate L, and thence into the tube *a*, leading to the drum B. The dust from the cylinder-space enters said tube *a* through the spaces between the slats or plates N, which are arranged transversely over the cylinder C, and placed obliquely as to their minor axis.

The rotation of the cylinder tends to throw out at the front of the machine, and also in an upward direction, a considerable portion of the grain-kernels thrashed from the straw. The perforated plate L and guard-plate M prevent the kernels taking such course, but without hindering the passage of dust. The guard-plate L also divides the air-current which sets through perforated plate M from the current which sets in an upward direction from the cylinder-space, so that the two are not mingled until they meet in tube *a*. A better or more powerful effect is thereby produced than would be practicable if the currents were mingled in the cylinder-space, and the dust is thus carried away, so that the workmen sustain no annoyance or injury therefrom.

The straw passes from the cylinder C onto the reciprocating riddle O; but the kernels of grain are mingled with it, and the action of the riddle is not ordinarily sufficient to dislodge or separate them from the straw. To produce this result I employ pickers, which consist of revolving hollow cylinders R R′, having intermittently-projecting teeth S, which are attached to bars T, that traverse the cylinders R from end to end, and project through slots in the heads thereof. Said bars T are caused to move alternately toward and from the periphery of the cylinder in a radial direction by means of cams or cam-grooved plates V, which are fixed at each side of the machine in position to receive the projecting ends of the bars. The bars revolve with the cylinders,

and as their ends traverse the cam-grooves *h* their teeth are caused to move in and out through the holes in the cylinders. The latter have meshing gears *b c*, and revolve together in opposite directions, as indicated by the short arrows, Fig. 2, and the teeth project on the front side of the cylinders as the latter revolve. Their action or function is to separate into two portions the body of straw delivered from cylinder C, one of which portions passes over the upper cylinder, R, and the other underneath the lower cylinder, R′, as indicated by the long arrows, Fig. 2. Thus the compacted straw is shaken up or loosened and divided by the revolving pickers, so that the grain-kernels are separated therefrom and allowed to fall upon the bottom of the riddle O, by which they are delivered upon the sieve of the vibrating shoe W, to be winnowed and disposed of in the usual way.

A second or supplementary shoe, X, is rigidly connected with and suspended from shoe W, the function of which is as follows: In winnowing the grain some of the lighter kernels will inevitably be carried by the blast over the rear edge, *i*, of the shoe W, and ordinarily they are allowed to fall into the straw, and thereby wasted. By the provision and arrangement of the supplementary shoe X such kernels are saved and winnowed, and delivered into a suitable receptacle placed in front of the rear axle of the machine, as shown in dotted lines, Fig. 2. The blast to effect the winnowing of the grain which thus falls on shoe X is supplied from the previously-described dust-pan A through tube E and chamber F. The dust carried along by the blast is not sufficient in quantity to destroy the desired winnowing effect, and it, together with the dust and chaff separated from the light grain on shoe X, is carried to the rear.

The straw-elevator Z has the ordinary endless traveling belt, but differs from other machines by having a perforated board or top plate, A′, and an imperforate bottom, B′, Fig. 1, for receiving any kernels of grain which may chance not to have been dislodged from the straw by the pickers and riddle. Said bottom B′ will conduct such kernels down to the shoe X.

When the wind is adverse—that is to say, when it tends to blow the straw back from the upper end of the carrier Z, and thus impedes the operation of the machine—the dust-blast through tube H is of particular service, since its force will carry the straw over the end of the carrier.

Slides *f* and *g* are shown closed in Fig. 1, and slide *e* open, so that the blast is entering tube E and escaping through shoe X.

Fig. 1 illustrates most of the belt and gear mechanism for operating the several movable parts of the machine. Such mechanism having no peculiarity, I omit further reference to it.

What I claim is—

1. In a thrashing-machine, the combination, with the cylinder and front guard-plate, L, of the obliquely-placed plates N, located above the cylinder, and the fan and dust-passage leading to the latter, substantially as shown and described, whereby the dust is drawn away from the spaces in front of and over the cylinder without permitting escape of grain-kernels in the same directions.

2. The combination, with a thrashing apparatus, substantially as described, of the two oppositely-rotating pickers, consisting of hollow perforated cylinders and intermittently-projecting teeth, as specified.

3. The combination, with the two oppositely-rotating pickers, consisting of hollow perforated cylinders having diametrical slots in their ends, and the toothed bars T, projecting through said slots, of the four stationary grooved plates, the latter having the most eccentric portions of their grooves located, as specified, so as to cause the teeth of the pickers to be projected alternately from the cylinders on the front side thereof, and thus divide or separate the straw.

4. The combination, substantially as described, with fan A and cylinder C, of the hollow head D, having the lateral upper and rear arms or branches, in which are dust-discharge openings, provided, respectively, with adjustable slides *e f g*, to adapt it for discharging dust in any one of three directions, as specified.

The above specification of my invention signed by me this 1st day of June, 1878.

PETER PARROTT.

Witnesses:
AMOS W. HART,
SOLON C. KEMON.