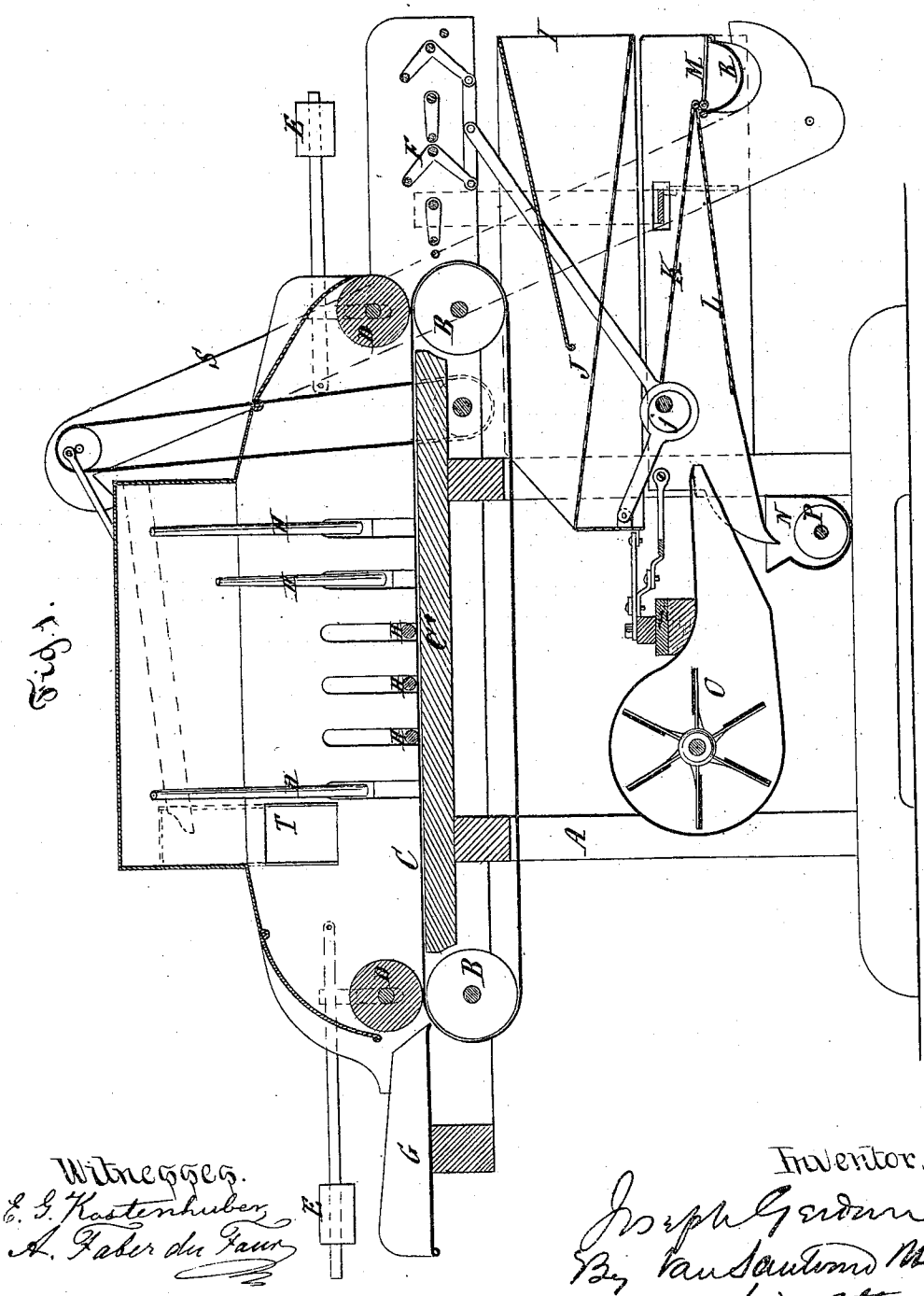
3 Sheets--Sheet 1.

J. GERDOM.

Improvement in Thrashing-Machines.

No. 132,822. Patented Nov. 5, 1872.



Witnesses.
E. G. Kastenhuber
A. Faber du Faur

Inventor.
Joseph Gerdom
By Van Santvoord Mauff
his attys

3 Sheets--Sheet 2.

J. GERDOM.

Improvement in Thrashing-Machines.

No. 132,822. Patented Nov. 5, 1872.

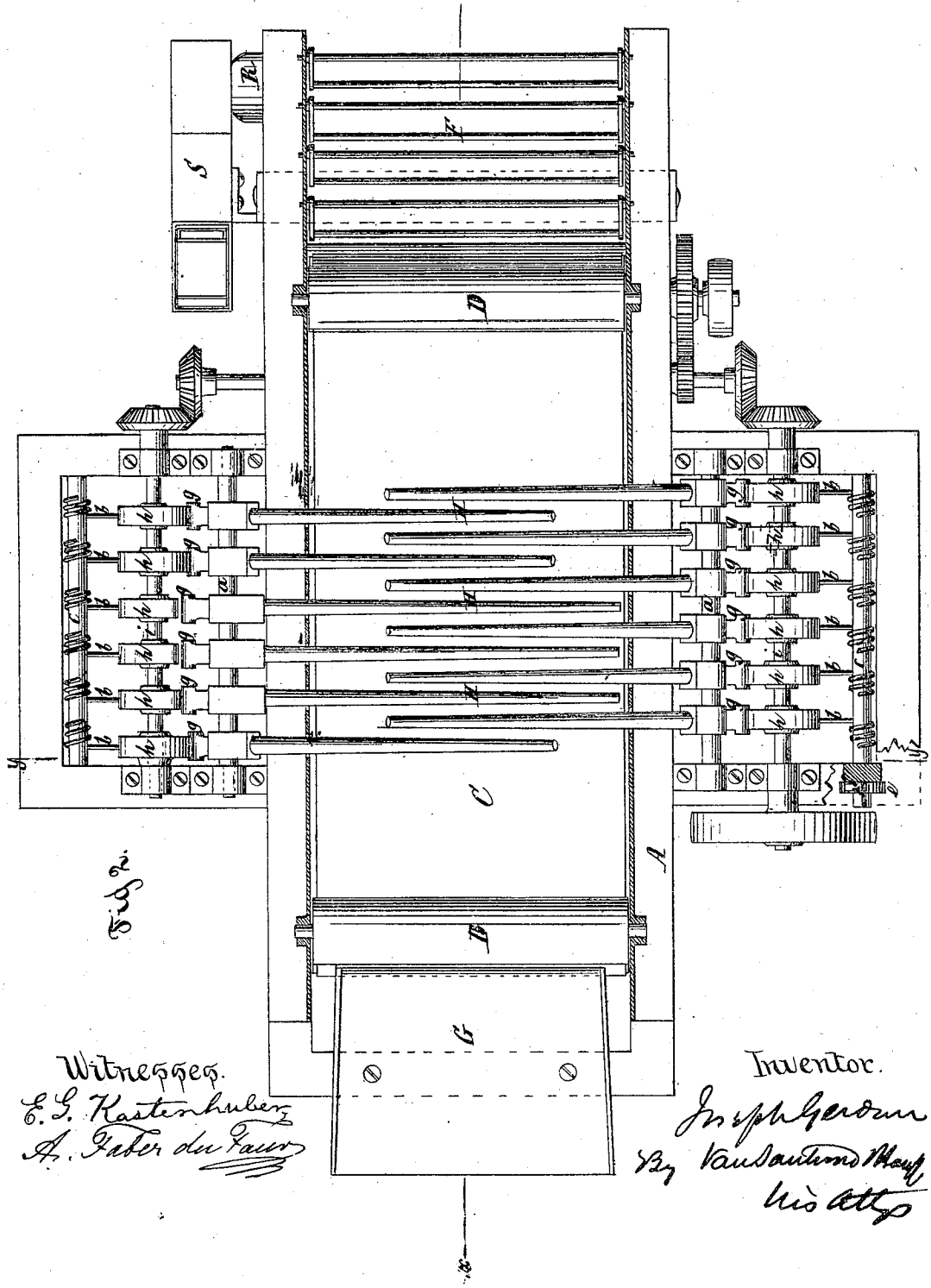


Fig 2

Witnesses.
E. L. Kastenhuber
A. Faber du Faur

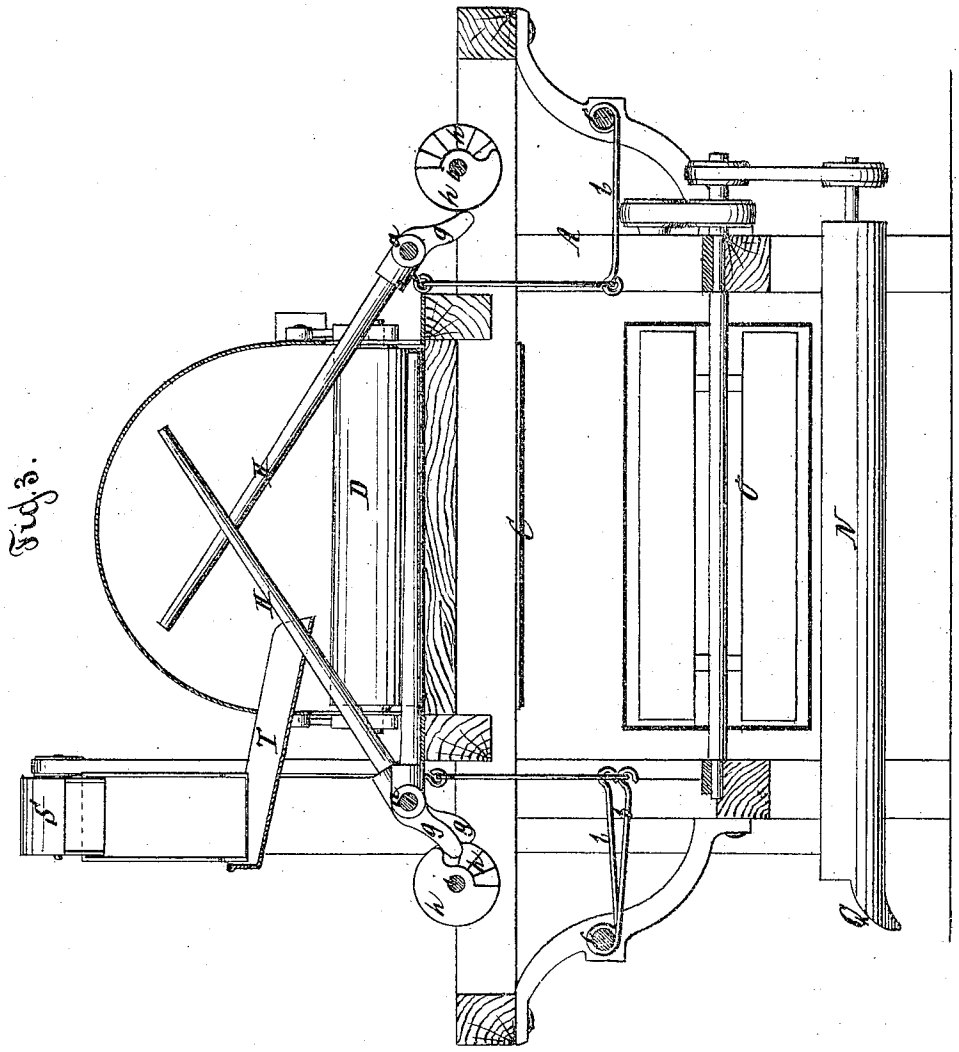
Inventor.
Joseph Gerdom
By Van Santvoord Hough
his attys

3 Sheets--Sheet 3.

J. GERDOM.

Improvement in Thrashing-Machines.

No. 132,822. Patented Nov. 5, 1872.



Witnesses.
E. J. Kastenhuber
A. Faber du Faur

Inventor.
Joseph Gerdom
By VanSantvoord & Hauff
his attys

UNITED STATES PATENT OFFICE.

JOSEPH GERDOM, OF ALBANY, NEW YORK.

IMPROVEMENT IN THRASHING-MACHINES.

Specification forming part of Letters Patent No. **132,822**, dated November 5, 1872.

To all whom it may concern:

Be it known that I, JOSEPH GERDOM, of Albany, in the county of Albany and State of New York, have invented a new and useful Improvement in Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of my invention in the plane *x x*, Fig. 2; Fig. 2 is a plan or top view of the same; and Fig. 3 is a transverse section of the same in the plane *y y*, Fig. 2.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of a series of beaters or mechanical flails which extend from opposite sides over a carrying-apron, which serves to feed the cut grain to the machine, said flails being operated by cams and springs in such a manner that, by the action of said flails the grain is readily separated from the straw. The force of the blows given by the flails is regulated by increasing or decreasing the tension of the springs, the springs on each side of the machine being connected to a shaft, which, when turned in its bearings, strains or releases the springs, and which is retained in the desired position by a ratchet-wheel and pawl. With the carrying-apron and the mechanical flails are combined a series of oscillating shakers and separating-screens, said screens being made to communicate at one end with a grain-delivery, and at the other end with an elevator, in such a manner that the clean grain is rapidly and effectually separated from those parts from which the grain is not entirely freed, and these last-named parts are again delivered to the carrying-apron and for a second time exposed to the action of the flails.

In the drawing, the letter A designates a frame of wood or any other suitable material, which forms the bearings for two rollers, B B, round which extends the carrying-apron C. This apron is by preference made of stout India-rubber cloth or of leather, and it is supported between the rollers B B by a platform, C*, its width being equal to that of the space between the frame A. Over the roller B B are situated rollers D D, which are depressed by weights E E, and one of which serves to feed the grain to the apron, while the other assists in carrying the straw from said apron to the oscillating shakers F. (See Figs. 1 and 2.) The grain is fed to the apron C over a trough or table, G, and while it is carried along by said apron it is exposed to the action of the beaters or flails H. These flails extend from opposite sides over the entire width of the apron, and they alternate with each other, as shown in Fig. 2, so that every part of the grain situated on the apron is exposed to the full force of the blows. Said flails swing on arbors *a a*, and they are depressed by the action of spring *b b*, (see Fig. 3,) which are secured to arbors *c c*, and connect to the flails by means of rods *d d*. The arbors *c c* turn in their bearings, and on the end of each is mounted a ratchet-wheel, *e*, which engages with a pawl, *f*, so that by turning said arbors the tension of the springs can be increased or diminished, and by the ratchet-wheels and pawls said arbors are retained in the required position. Each of the flails is provided with a toe, *g*, (see Figs. 2 and 3,) which is exposed to the action of a cam, *h*, the several cams being mounted on shafts *i i*, which are geared together and receive a revolving motion by means of a belt and pulley. (See Fig. 2.) Said cams are so placed that the flails are raised alternately in quick succession, and whenever one of the cams releases its appropriate flail the spring attached to said flail causes the same to produce a smart blow on the grain carried through under it by the action of the apron C. By the blows of the flails the grain is disengaged from the straw, and, as the motion of the apron C progresses, the whole mass of grain and straw is delivered to the oscillating shakers F, which receive the required motion from an eccentric, *j*, Fig. 1. These shakers are situated over a shoe, I, which contains the separating-sieves J K L and also the grate M. (See Fig. 1.) The kernels, which have been completely disengaged from the straw and the ears, pass down over the lowest or finest sieve into a trough, N, the fine particles of dust still adhering to or mixed with the same, being blown off by a fan-blower, O. In said trough is contained a spiral feeder, P, which serves to discharge the grain over the spout Q. The grains

which have not been entirely disengaged from the straw, and which cannot pass down through the middle sieve K, slide over this sieve, and, on reaching the grate M, they drop down into an inclined trough, R, which carries the same to the elevator S. By the action of this elevator these parts are raised and deposited on a trough, T, from which they drop back upon the apron C to be again exposed to the action of the flails. By these means the grain is effectually removed from the straw, the clean kernels are discharged through the spout Q, and the straw passes over the shakers F. My machine requires comparatively little power, and it is so constructed that it is not liable to get out of order.

What I claim as new, and desire to secure by Letters Patent, is—

1. The carrying-apron C arranged upon the drums B B and between the sides of the frame A for feeding the grain and straw beneath a series of mechanical flails or beaters operated by cams and springs, as described, said apron delivering the flailed grain and straw into one or more shakers, substantially as specified.

2. In combination with the mechanical flails situated on opposite sides of the carrying-apron, I claim the arrangement of springs and tension-arbors, which serve to adjust the blows produced by the flails, substantially as set forth.

3. In combination with the mechanical flails and the carrying apron, constructed and operating as specified, I further claim the oscillating shaking devices, separating-sieves, grain-delivery, and the elevator for bringing the parts not perfectly cleansed back to the carrying-apron, substantially as described.

JOSEPH GERDOM.

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.