2 Sheets 1

James I. Mettler

Corn-Harvester

116735

PATENTED JUL 4 1871

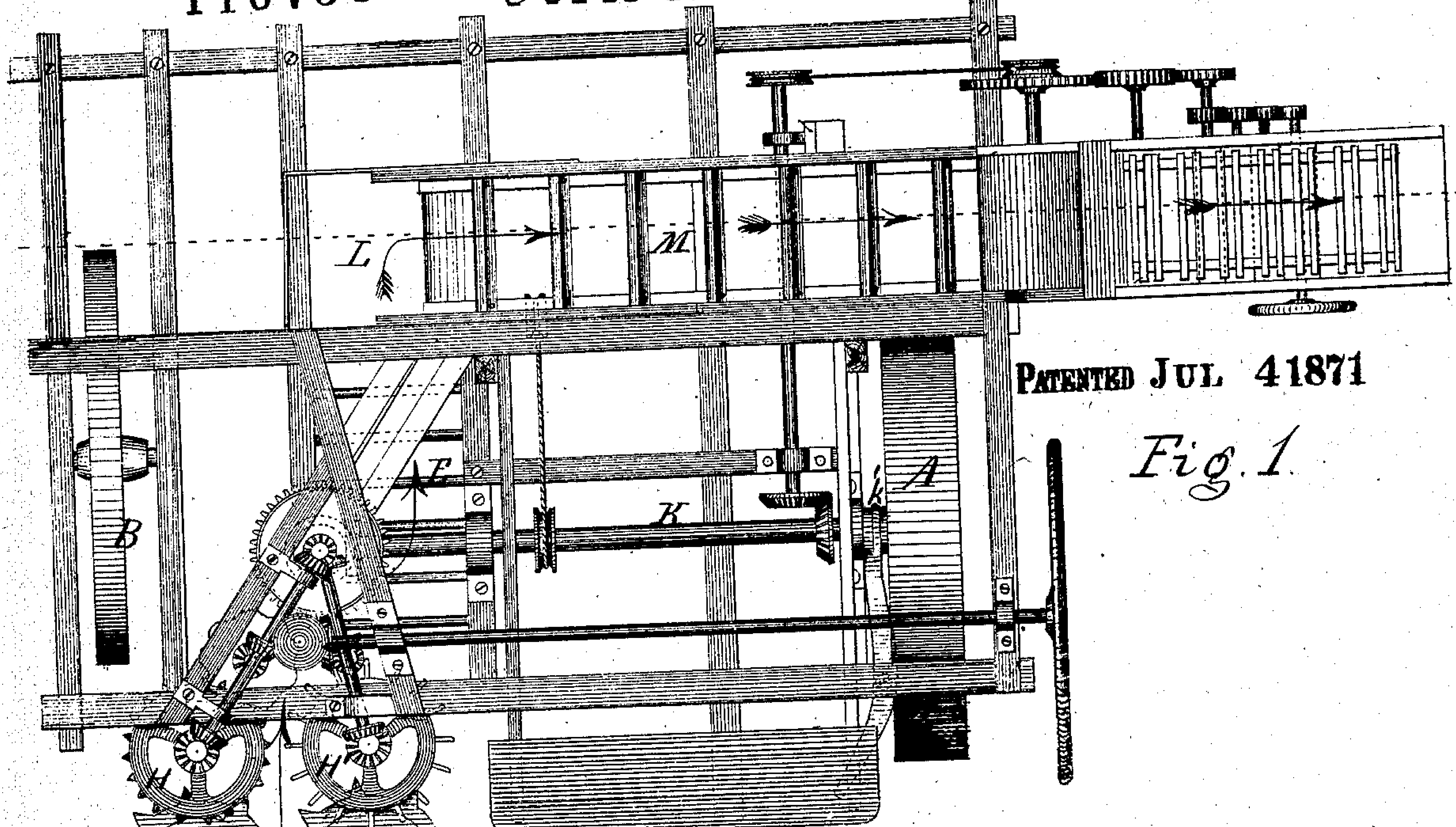

Fig. 1

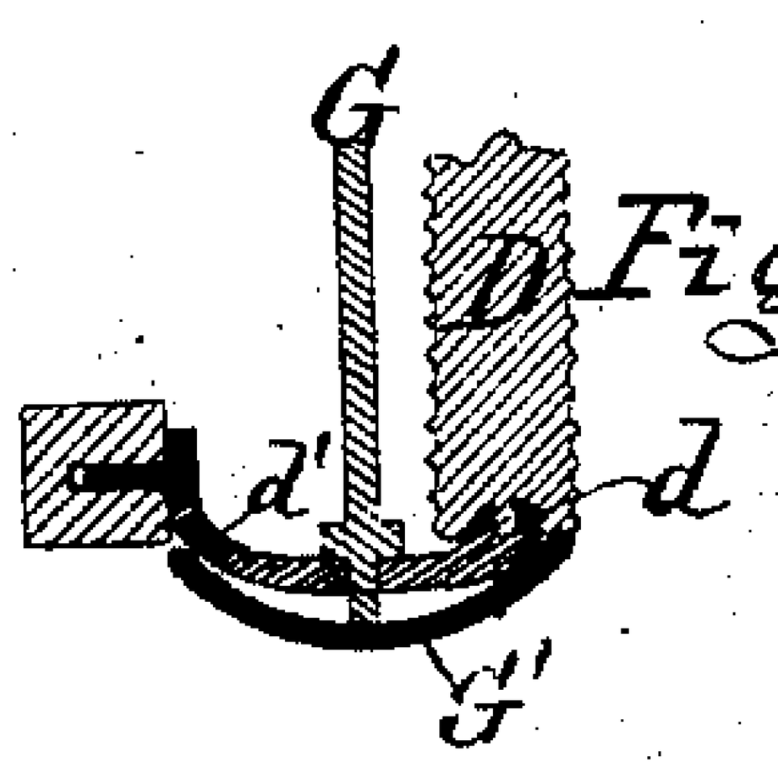

Fig. 6

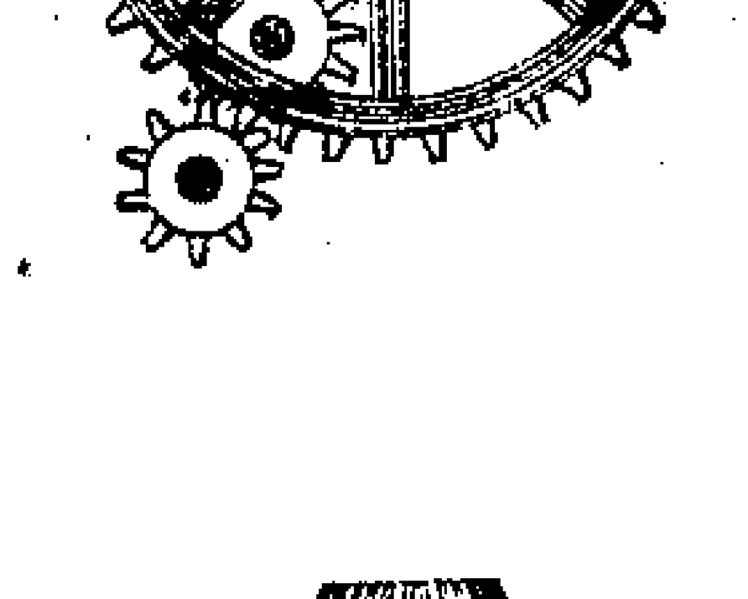

Fig. 7

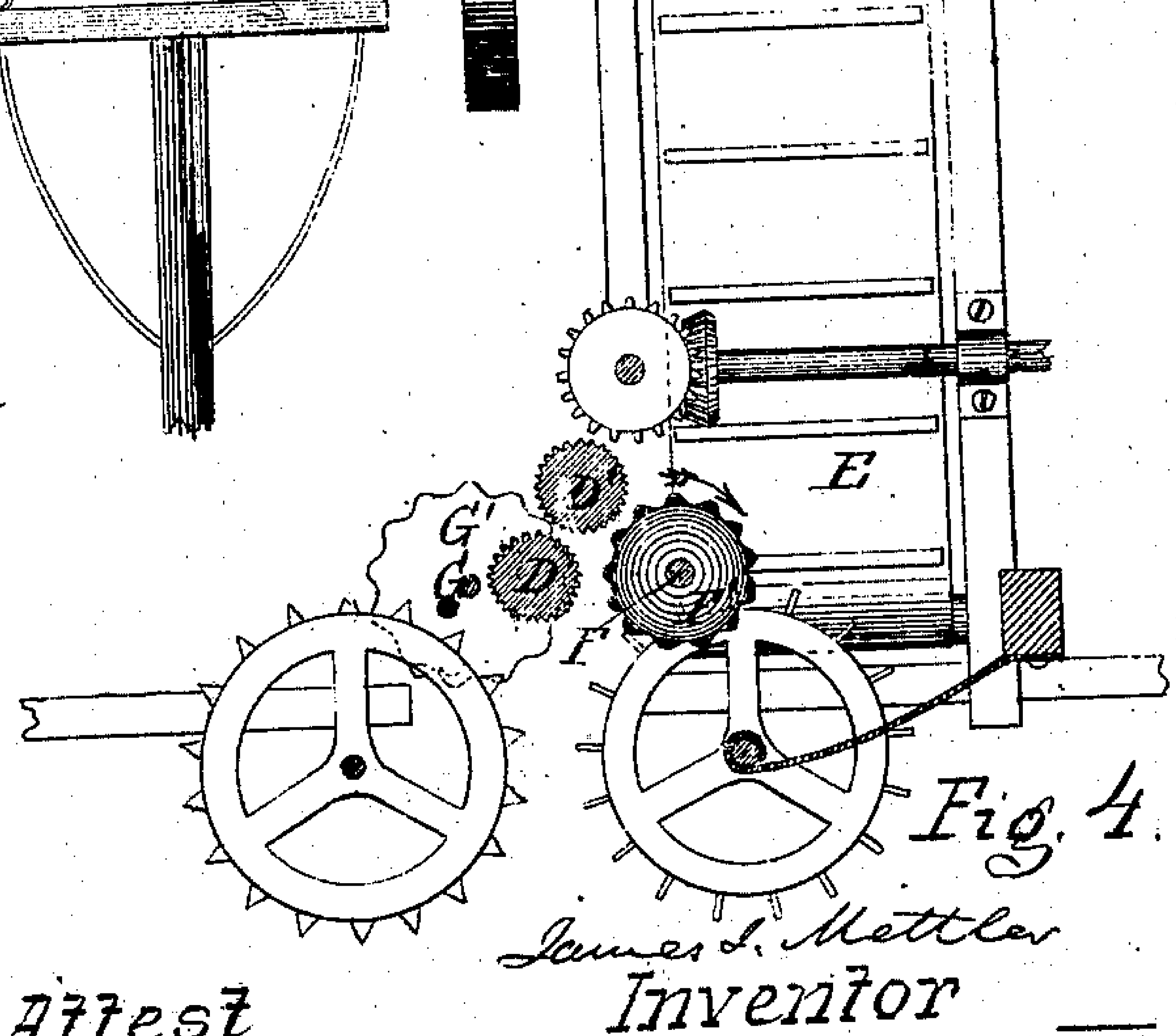

Fig. 4

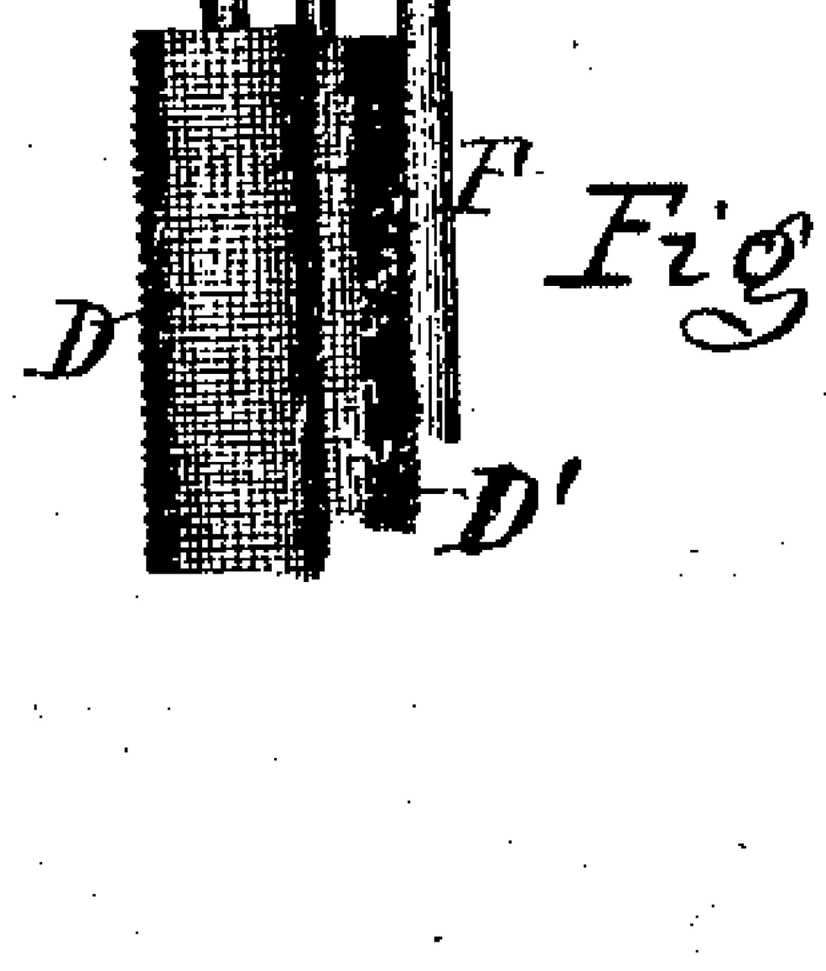

Fig. 5.

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2 sheets 2

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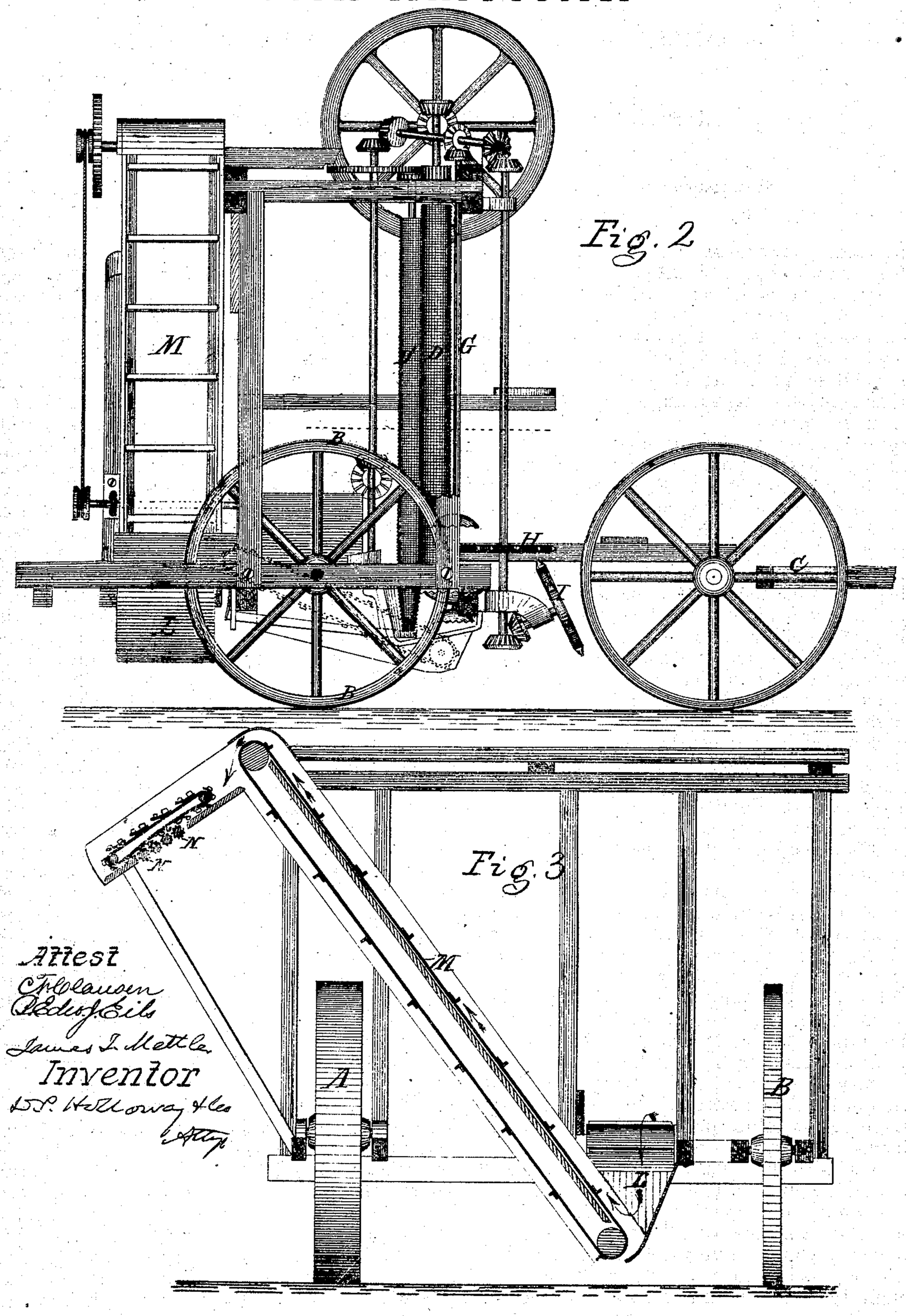

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116,735

UNITED STATES PATENT OFFICE.

JAMES I. METTLER, OF MENDOTA, ILLINOIS.

IMPROVEMENT IN CORN-HARVESTERS.

Specification forming part of Letters Patent No. 116,735, dated July 4, 1871.

To all whom it may concern:

Be it known that I, JAMES I. METTLER, of Mendota, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Corn-Harvesters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation. Fig. 3 is a transverse section on line *x x* of Fig. 1. Figs. 4 to 7 are views of detached portions of the machine, to be more especially referred to hereinafter.

The same letters of reference are employed in all the figures in the designation of identical parts.

This invention relates to a machine intended for picking the ears of corn from the standing stalks in the field, and for stripping the husks off; and the improvement consists, mainly, in the employment of two vertical rollers for picking the ears from the standing stalks which pass through them, arranged upon the side of the carrying-belt which conveys the ears to the husking-rolls, in such a position as to stand at an obtuse angle to the row of corn passing between them; also, in the details of construction and arrangement of various parts, to be generally explained hereinafter and specifically pointed out in the claim.

The machine is built with a suitable frame-work, which is mounted upon the wheels A and B, and provided with a swiveling-carriage, C, to which the draft-animals are hitched. The frame must be carried up, at least at the point where it straddles the row, to a sufficient height so that the upper transverse beams may clear the tops of the stalks. D and D′ are the rolls used for picking the ears from the standing stalks. They are disposed in vertical positions upon the front portion of the frame-work and to one side of the carriage C, a suitable opening being provided in such frame to admit of the unobstructed passage of the stalks to the rolls. It will be understood that to accomplish the result intended with these rolls it would be impracticable to place one behind the other in line with the row of corn, as in such case it would be very difficult, if not practically impossible, to cause the stalks to pass through the rolls in drawing the machine forward. If, on the other hand, the rolls were disposed at right angles to the row, great difficulty would be encountered to gather the ears as they are picked from the stalks upon belts or in boxes on the machine, because, an unobstructed passage in front of the rolls being necessary, the ears would naturally fall through it to the ground. These difficulties are overcome in this machine by arranging these rolls in such a manner that they shall stand at an obtuse angle to that portion of a row of corn toward which they are advancing, so that the picked ears of corn can be shed upon the carrying-belt E, which travels directly at their side. As the machine is constantly advancing, the stalks in front of the rolls will aid in delivering the ears upon the apron or belt at the sides. The rearmost of the rolls, D′, is, it will be observed by reference to Fig. 2, extended below the lower end of the foremost one, D, and this portion is tapered to prevent the butt end of the stalk from coming in contact with it before the upper portion is fairly caught between the rolls. The stalks are fed singly to the picking-rolls by the serrated wheels or disks F^1 F^2, placed one above the other on a vertical revolving shaft, F, and a third similarly-serrated disk or wheel, G′, upon a shaft, G. The wheel G′ is arranged to revolve between the wheels F^1 and F^2, and directly under, and with its face near the periphery, in close proximity to or contact with the end of the roll D. This latter rests upon a step, *d′*, and it is found that, without some special provision to guard against it, its journal is liable to become choked to such an extent as to prevent the rotation of the roll. To avoid this, the end of the roll is countersunk around its journal *d*, which does not extend below its end, to receive the box of the step in which it turns, and the wheel G′, being placed directly under the step, and of dished form, comes in contact with the end of the roll, at the circumference, so as to guard the joint between the roll and the box of the step, as is best seen in Fig. 6. The stalks of corn are gathered and guided to the feeding-wheels by means of two wheels, H and H′, keyed to vertical revolving shafts, which are arranged on the frame-work some distance in advance of the picking-rolls; and for straightening up leaning or broken stalks the wheels I and I′ are employed, which revolve in oblique planes nearly in contact with the ground. All these gathering-wheels are constructed with projecting teeth or arms upon their

peripheries, as shown. The picking-rolls, feeding-wheels, and gathering-wheels derive their motions from a main driving-wheel on the supporting-wheel A, through any suitable intermediate gearing, that which I prefer being shown in the drawing. They may be thrown out of gear or in gear by means of an ordinary clutch-box, K′, upon the primary counter-shaft K, which derives its rotation from the driving-wheel by coupling the clutch-box to a loose pinion upon its end and gearing into said driving-wheel. The picked ears of corn fall upon an inclined belt or apron, E, constructed with suitable slats on its surface, to serve as buckets for carrying the ears upward, and stretched over rollers, the upper one of which is driven from the shaft K by sheaves and a belt. The feeding-wheels F^1 and F^2 are made of dished form, with the convex side uppermost, so as to shed any ears of corn which may fall upon them upon the apron E, rotating, as they do, in the direction of the arrow in Fig. 4. From the apron E the ears are delivered into a box, L, on the inclined bottom of which the ears slide toward the transverse elevating-apron M by the buckets, on the surface of which the ears are scooped up and conveyed to the husking-rolls N N, where any portion of the husk not stripped off in the act of picking the ears from the stalk is taken off. The clean ears are then delivered from the husking-rolls into a wagon driven along by the side of the machine.

I am aware that the use of picking-rolls in vertical positions is not new in corn-harvesters; and I am also aware that, of a pair of picking-rolls disposed in an inclined position, the roll adjacent to the receptacle for the ears has been arranged in a plane below that of its fellow, so as to facilitate the shedding of the ears into the receptacle. I do not, therefore, claim either of these features.

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

1. The vertical picking-rolls D D′, when so placed that a line passing through their axes will form an obtuse angle with the row of corn, so that the ears, when severed from the stalk, will fall into the proper receptacle to one side, substantially in the manner specified.

2. In combination with the vertical picking-rolls, the wheels F^1, F^2, and G′ for feeding the stalks singly to the picking-rolls, substantially as set forth.

3. The combination of the vertical picking-rolls, the wheels I I^1 for straightening up leaning stalks, wheels H H′ for gathering the stalks, and wheels F^1, F^2, and G′ for feeding the stalks singly to the rolls, substantially as set forth.

4. The roll D′, countersunk around its lower journal *d*, in combination with the raised box of the step *d′* and the dished wheel G′, all arranged with reference to one another, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES I. METTLER.

Witnesses:

D. P. HOLLOWAY,

B. EDW. J. EILS.