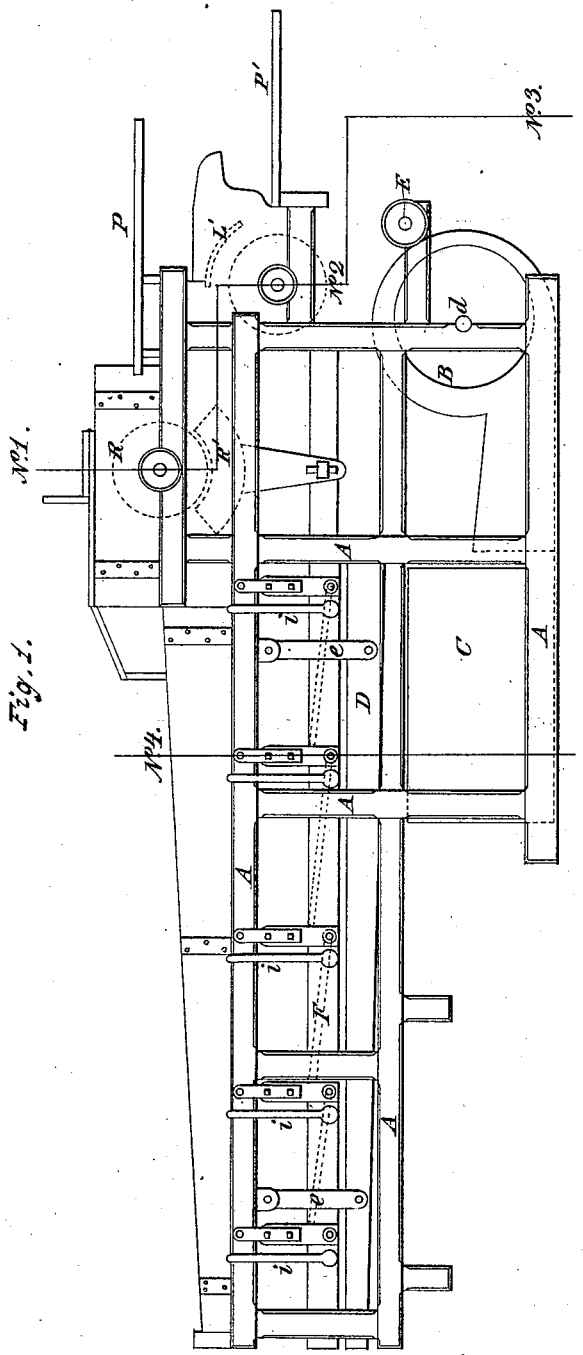
(No Model.) 4 Sheets—Sheet 1.

# J. H. MELICK.

## MACHINE FOR THRASHING GRAIN.

No. 261,167. Patented July 18, 1882.



(No Model.) 4 Sheets—Sheet 2.

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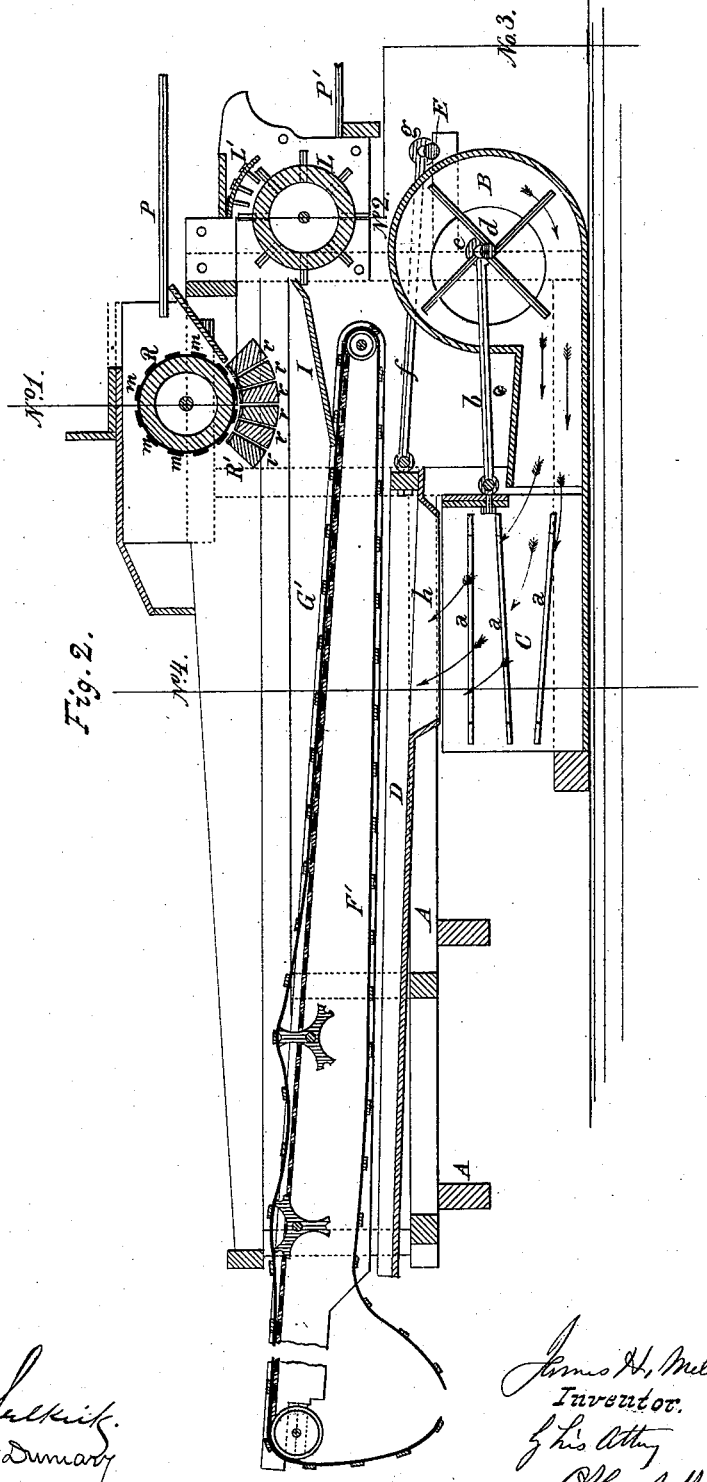


Fig. 2.

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# J. H. MELICK.

## MACHINE FOR THRASHING GRAIN.

No. 261,167. Patented July 18, 1882.

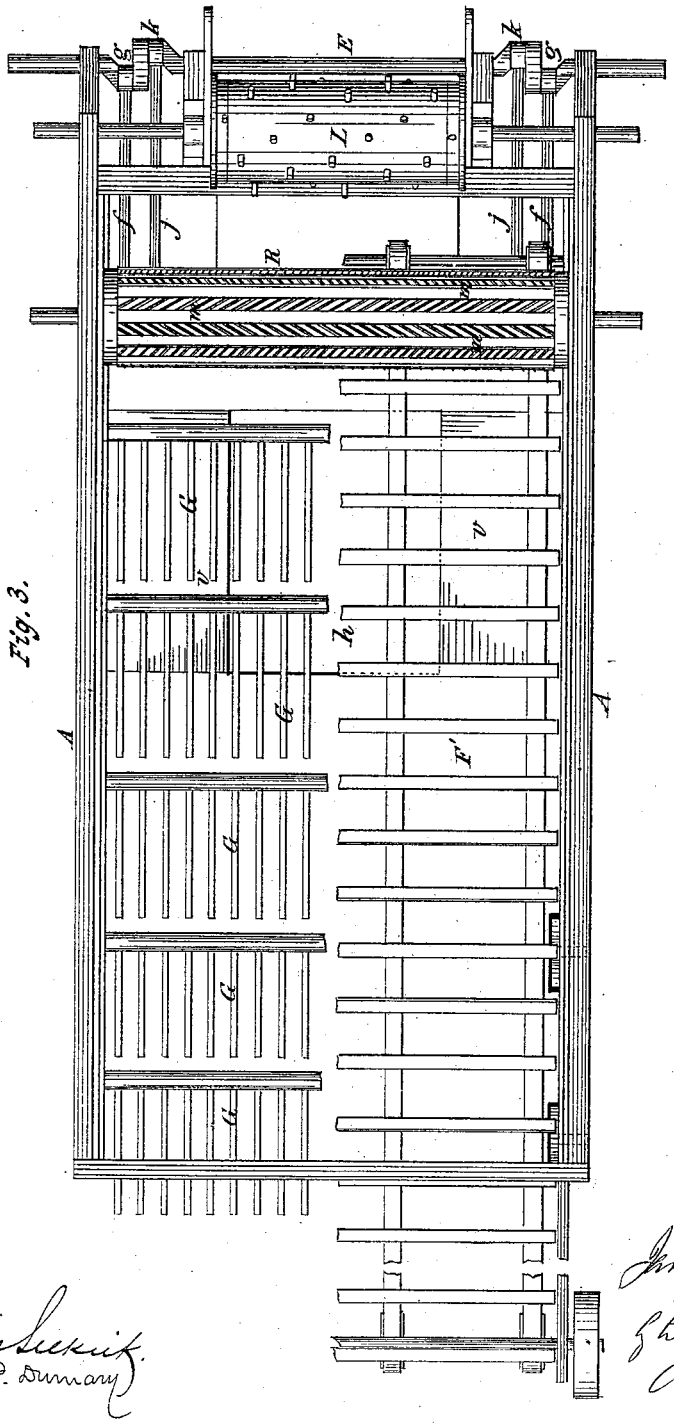

Fig. 3.

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(No Model.) 4 Sheets—Sheet 4.

# J. H. MELICK.

## MACHINE FOR THRASHING GRAIN.

No. 261,167. Patented July 18, 1882.

*Fig. 4.*

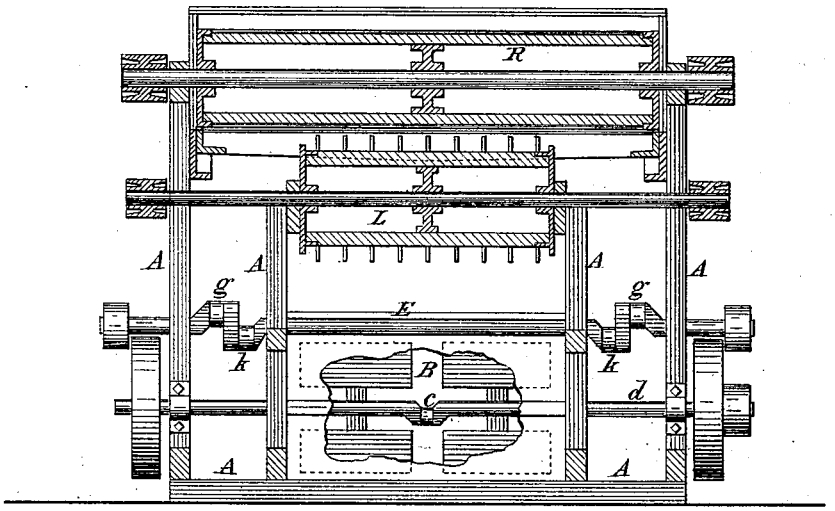
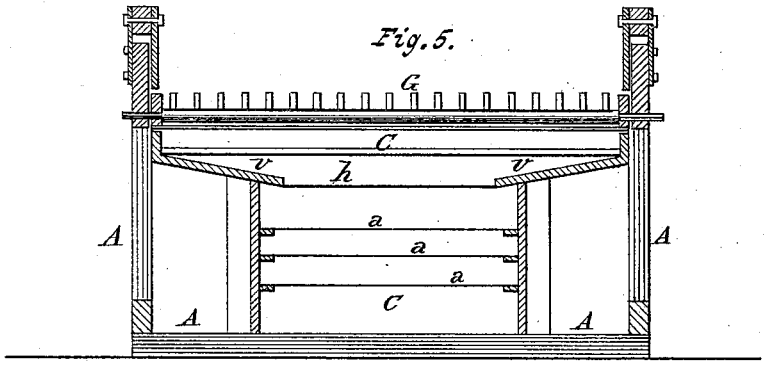



*Fig. 5.*

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# UNITED STATES PATENT OFFICE.

JAMES H. MELICK, OF ALBANY, NEW YORK.

## MACHINE FOR THRASHING GRAIN.

SPECIFICATION forming part of Letters Patent No. 261,167, dated July 18, 1882.

Application filed October 26, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. MELICK, a citizen of the United States, and a resident of the city and county of Albany, in the State of New York, have invented certain new and useful Improvements in Machines for Thrashing Grain, of which the following is a specification.

The object of my invention is to produce a thrashing-machine which will be adapted to thrash all kinds of grain, and produce, as may be desired by the farmer, broken straw adapted to be baled or long and unbroken straw adapted to be sheaved or bundled, thereby obviating the necessity of the farmer thrashing a portion of his grain with hand-flails, or employing two different machines when he desires to make sheaves or bundles of long straw from one portion of his grain-crop and bales of broken straw from the other portions, as is now required. I attain this object by means of the mechanism illustrated in the several drawings, in which the same letters of reference refer to corresponding parts throughout the several views.

Figure 1 is a side elevation of my improved thrashing-machine, showing one form of straw-conveying mechanism which may be employed. Fig. 2 is a longitudinal sectional elevation of the machine, illustrating another form of straw-conveying mechanism. Fig. 3 is a plan view of the machine, and illustrates sections of two forms of straw-conveying mechanism which may be employed. Fig. 4 is a cross-sectional elevation taken at lines Nos. 1, 2, and 3 in Figs. 1 and 2, and through the rubbing-cylinder and spike-cylinder; and Fig. 5 is a cross-sectional elevation taken through line No. 4 in Figs. 1 and 2.

In the drawings, A A represent the frame-work of the machine.

B is a fan-blower situated at the lower forward end of the machine, as shown in Figs. 1 and 2, which fan-blower discharges into a sieve-shoe, C, which carries sieves *a a*, and is operated by pitman *b* and crank *c*, made with the shaft *d* of the fan-wheel.

D is the grain-board, suspended within the frame of the machine by hangers *e e*, longitudinally reciprocated by pitmen *f* and cranks *g*, made with shaft E. The floor of said shoe is inclined, and operates as a grain-board for conducting the grain and chaff (not blown away) into the shoe C through opening *h*, made in the forward end of the bottom of said shoe, as shown in Figs. 2, 3, and 5.

In this machine either of the old known forms of straw-conveyers may be employed, one of which known forms of construction is illustrated in Fig. 1, and consists of a reciprocating shoe and conveyer, F, suspended by hangers *i* from the frame of the machine, and reciprocated by pitmen *j* and cranks *k*, made with shaft E, and provided with "flippers" G. (Shown by dotted lines in Fig. 1 and full lines in Fig. 3.) The said flippers are so well known to the trade that their mode of construction and operation need not be particularly described. The other form of conveyer which may be employed is shown in Figs. 2 and 3, and, briefly stated, consists of the shoe F′ and endless rack-apron G′. This form of conveyer is also so well known to the trade that no particular description of its construction and mode of operation is required.

With the said fan-blower, separating mechanism, and straw-conveyer mechanism I combine two forms of thrashing-cylinders, one of which is known as the "rubbing or long-straw cylinder," and the other as the "spike-cylinder."

The rubbing or long-straw cylinder R is preferably situated in the upper part of the machine and over the forward end of the conveyer. Its thrashing or rubbing surface is formed of metal strips *m*, provided with alternate ribs and grooves arranged relatively at an angle with the direction of the length of said strips. The said rubbing-strips are so arranged that the angles of the ribs and grooves of each alternate one will run in opposite directions to the others, as is well known to the trade. The said rubbing-cylinder is provided with a rubbing-concave, R′, made in sections, and consisting of a series of rubbing-bars, *r*, supported at their outer ends in elastic bearings, so that each rubbing-bar will be yielding under great pressure. This rubbing-cylinder and its concave are so well known to the trade that their construction and operation require no particular description.

The spike-cylinder L is constructed in any well-known manner, and is provided with spike-

concave L′, and is situated in the fore part of the machine, on a plane between those of the rubbing-cylinder and the fan-blower, as shown. A grain-board, I, is arranged in rear of the spike-cylinder L and below the rubbing-cylinder R. This grain-board is set at an incline, and runs downward and rearward to the forward end of the conveyer F′, and is adapted to receive the grain and straw delivered from the spike-cylinder, and also the grain falling from the rubbing-cylinder.

P and P′ are each grain-platforms, from which the grain in the straw is fed to their respective cylinders. The said platforms are made removable.

In thrashing-machines for producing long straw the cylinders are made of great length, and the machines are made with a width sufficiently great to admit the full length of the straw transversely to the length of the machine, and also to allow the straw to have a longitudinal movement transversely to the machine and parallel with cylinder R, while in spike-cylinder machines, where the straw is broken, the cylinder is made short and the machine narrow, as the grain and straw are fed end first and not crosswise, as in the case of long-straw cylinders.

To adapt both forms of cylinders to be successfully operated, I make the machine with the width usually made by the trade for producing long straw, and make the cylinder R with the usual length—say from sixty to seventy inches, as is the practice of the trade—while the spike-cylinder L is made with a shorter length, as shown in Figs. 3 and 4.

To adapt my improved machine, with its rubbing or long-straw cylinder and spike-cylinder, for perfect co-operation with the straw-conveyer, grain-separator, and fan, for the purpose above set forth, I make the machine with a width sufficient to permit the longest straw of the grain to lie transversely to the length of the machine, as in long-straw thrashing-machines. I make a contracted form of delivery-opening in the bottom of separator D, with inclined sides *v v*, as shown in Figs. 3 and 5, for delivery of the grain mixed with chaff from said separator into the sieve-shoe C.

The several parts of the machine for conveying the straw rearward and separating and winnowing the grain are properly speeded by means of band-wheels and pulleys secured to the shafts of the fan-blower, rubbing-cylinder, and spike-cylinder, respectively, and to the crank-shaft E, so that all the parts operating at a time will operate in concert and with a proper relative speed of movement.

I am aware that thrashing-machines employing spike-cylinders and straw-conveying and grain separating and winnowing mechanism are used and have been used in combination, and that long-straw or rubbing cylinders and straw-conveying and grain-separating mechanism also have been employed in combination. I therefore do not claim either of said combinations as being my invention, as neither of the said combinations would accomplish the purpose of my invention, and when singly embodied in a machine will not answer the purpose of the farmer (when desirous of sheaving or bundling one portion of his straw and baling another portion) employing hand-flails for thrashing one portion of his grain for long straw and a spike-cylinder machine for thrashing another portion, or employing two distinct and separate machines, as he has heretofore been obliged to do when desirous of producing both baling and bundling or long straw.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a straw conveying and separating mechanism, a winnowing-fan, and sieves, of a long-straw or rubbing cylinder and rubbing-concave, and a spike-cylinder and spike-concave, said thrashing mechanism being so arranged in relation to said straw-carrier and winnower that either is capable of operation in connection therewith at will.

2. The combination, with a straw conveying and separating mechanism, a winnowing-fan, and sieves, of a long-straw or rubbing cylinder and rubbing-concave, and a spike-cylinder and spike-concave, and a grain-board arranged below the rubbing-cylinder and near the rear side of the spike-cylinder, substantially as and for the purposes set forth.

3. In a thrashing-machine, the combination of a spike cylinder and concave, a straw-conveyer, winnowing-fan, and grain-sieves with a long-straw or rubbing cylinder, the said parts being arranged and operating substantially as shown and described.

4. In a thrashing-machine, the combination, with a straw-conveyer, of a rubbing or long-straw cylinder and a spike or short-straw cylinder, arranged so that either may be used in connection with the carrier at will, as and for the purposes set forth.

5. In a thrashing-machine, the combination, with a grain-board, of a rubbing or long-straw cylinder and a spike or short-straw cylinder, and mechanism for separating the thrashed grain from the straw and chaff, the said parts being arranged and operating substantially as shown and described.

JAMES H. MELICK.

Witnesses:
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ALEX. SELKIRK.