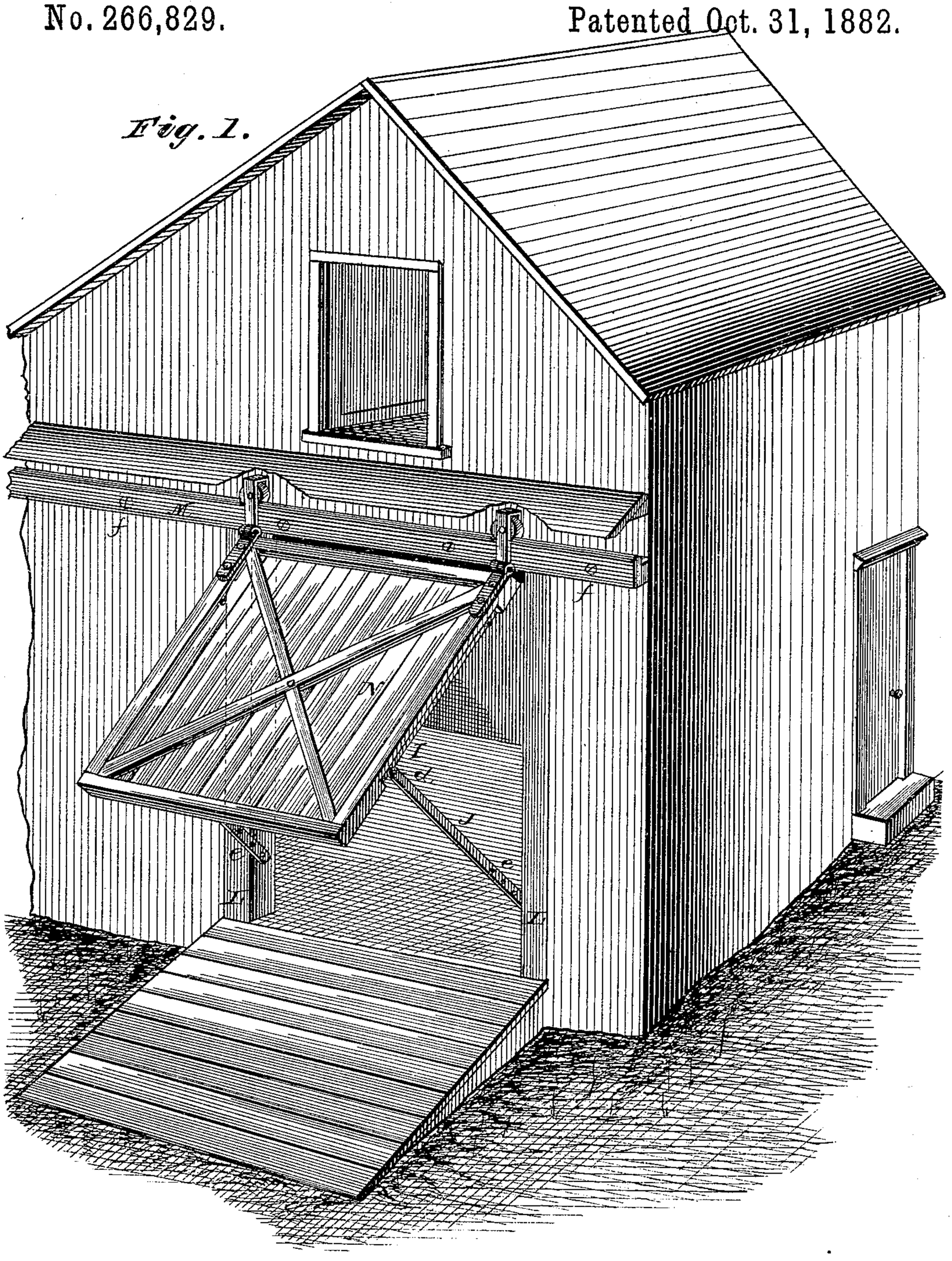
(No Model.) 2 Sheets—Sheet 1.

J. J. JOHNSTON.

BARN DOOR.

No. 266,829. Patented Oct. 31, 1882.

Fig. 1.



WITNESSES

Fred. L. Dieterich.
P. C. Dieterich.

INVENTOR

James J. Johnston

(No Model.) 2 Sheets—Sheet 2.

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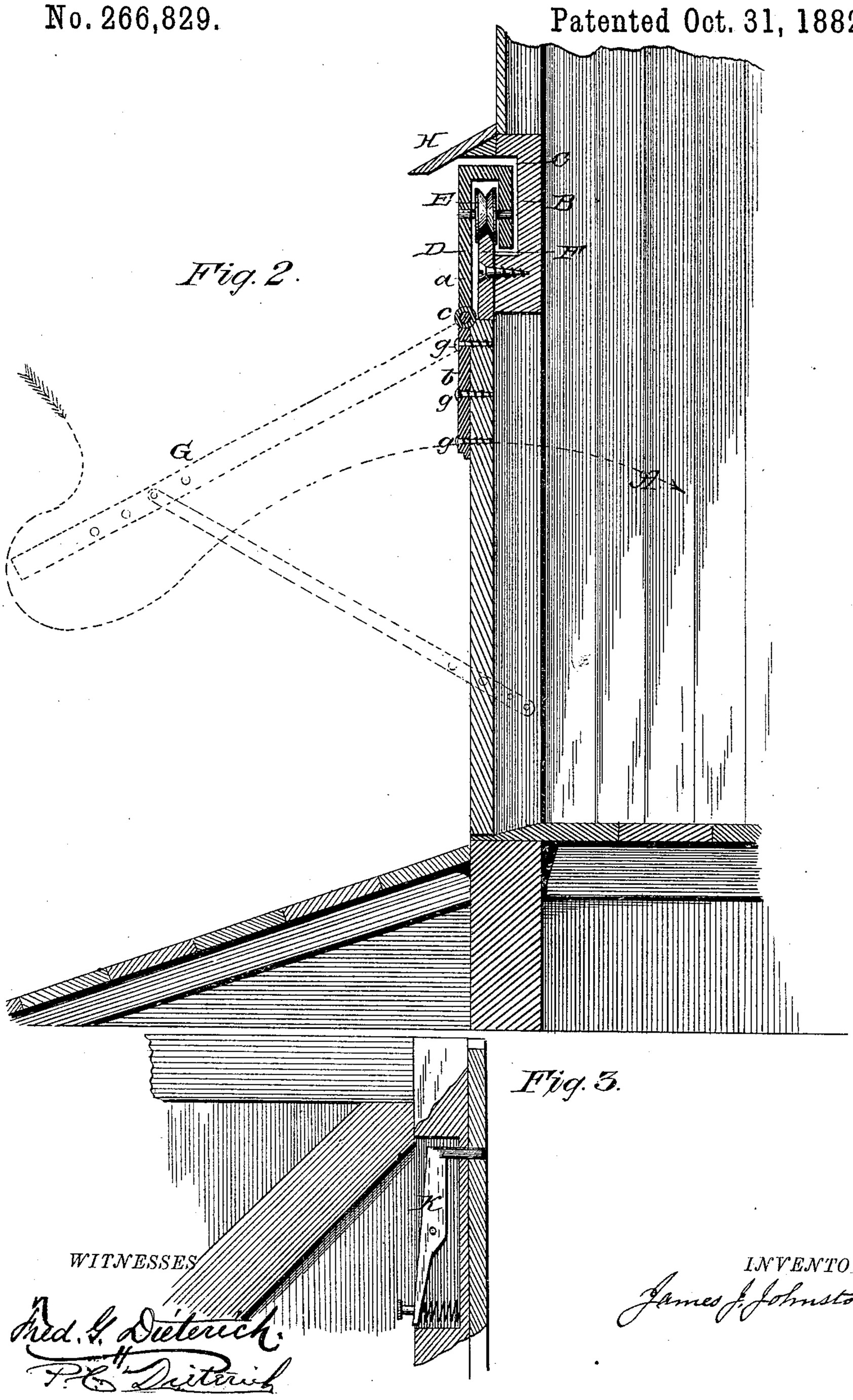

Fig. 2.

Fig. 3.

WITNESSES

Fred. L. Dieterich.

P. C. Dieterich

INVENTOR

James J. Johnston

UNITED STATES PATENT OFFICE.

JAMES J. JOHNSTON, OF COLUMBIANA, OHIO, ASSIGNOR TO THE UNITED STATES IMPROVEMENT COMPANY, (LIMITED,) OF SAME PLACE.

BARN-DOOR.

SPECIFICATION forming part of Letters Patent No. 266,829, dated October 31, 1882.

Application filed February 11, 1882. Renewed October 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. JOHNSTON, of Columbiana, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Barn-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in barn-doors; and it consists in suspending the door upon a railway through the medium of hinged hangers or supports for the friction-pulleys, and providing the door-frame with pivoted braces held in the frame by spring-catches, the whole being constructed, arranged, and combined as will hereinafter more fully and at large appear.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of a barn provided with my improvement in doors, representing the door elevated and held in position by the pivoted braces. Fig. 2 is a vertical section of the barn and its door in position for moving it edgewise. Fig. 3 is a detail view, representing the spring-catch for holding the braces in the frame of the door.

Reference being had to the accompanying drawings, A represents the barn, the front timber, B, of the upper or second floor being recessed, as indicated at C, for the purpose of receiving the upper and inner portion of the hangers or supports D for the friction-pulleys E. This recess is for the purpose of preventing the hanger and its friction-pulley from leaving the track F, and also for preventing the hangers or supports E from undue lateral tilting when swinging the door out, as represented by the dotted lines G, shown in Fig. 2. The hangers or supports are constructed in two parts, *a b*, and hinged together at *c*. The form of the hanger is clearly shown in Figs. 1 and 2. Above the recess C of the timber B, on its outer side, is placed a cap, H, for preventing the entrance of snow, rain, or other things that would likely obstruct the travel of the hangers or supports upon their track or from moving along in said recess.

The barn-door is of the construction common to that class of doors which are suspended and move edgewise on a track or tracks, excepting that it is recessed in its side edges, as indicated at I, for the reception of braces J, which are pivoted in said recesses at *d*, and are held in said recesses by means of spring-latches K, the construction of which is clearly shown in Fig. 3. The braces J are furnished with a number of openings, *e*, for the reception of a pin which passes through the braces into openings in the side jambs or timbers, L, of the doorway. The railway M is secured in position by large wood-screws *f*, with the hangers or supports D and their friction-rollers placed upon the track prior to securing the track in place on the outer face of the timber B. The barn-door N is then attached to the parts *b* of the hangers or supports D by means of wood-screws, as indicated at *g*.

As the construction and arrangement of the several parts and the relation that they bear to each other will be readily understood from the foregoing description, I will proceed to describe the operation, which is as follows: The door N, for ordinary purpose of opening and closing, is moved edgewise on the track M through the medium of supports D and friction-rollers E, care being taken to have the lower edge of the door free from any obstruction. It is often necessary to have the barn-door open for the purpose of admitting air. This is particularly the case when winnowing grain or thrashing grain on the barn-floor; and it is also often desirable just after the storing away of hay, straw, or grain in the sheaf to have the door open for free circulation of air through the barn to prevent it or them becoming musty or the grain from sprouting. In these cases, particularly in windy or rainy weather, to have the door open from top to bottom, or partly open from top to bottom, would cause the wind to sweep through the barn and over the floor or rain to be blown into the barn and over the floor. With the

door partially opened from top to bottom, the wind blowing rapidly through the partially-open door causes eddies or whirlwinds over the barn-floor, and this tendency to form whirlwinds when it is raining causes the floor to become wet, nearly as much so as if the door were entirely open, and when not raining the eddies or whirlwinds caused by the wind make it very disagreeable to the operator or operators while winnowing or thrashing.

By the use of my improvement the door can be swung up and held in a fixed position, thereby forming a shed in front of the barn-doorway, said door forming a roof of any desired angle or pitch, and at the same time admit an abundance of air into the barn and over the barn-floor through the openings at the side and lower edge of said door. This arrangement of the barn-door with its braces J enables the operator to adjust the angle or pitch of the door G, so as to adjust the lower edge at the barn-door to be at any desired distance above the plane of the barn-floor, thereby regulating the amount of current of air sweeping under it and into and over the barn-floor. The wind striking against the upper surface of the barn-door will cause a reaction, so that in passing into the barn it will take an upward direction and follow the under surface of the barn-door, as indicated by dotted lines in Fig. 2. In case of rainy weather the barn-floor will always be kept dry, with the advantage of admitting any desired quantity of air through the doorway into the barn.

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

A barn-door having pivoted braces J and spring-latches K, in combination with the hinged hanger D, having friction-rollers E, railway M, and recess C in timber B, all constructed, arranged, and operating substantially as hereinbefore described, and for the purpose set forth.

JAMES J. JOHNSTON.

Witnesses:

T. D. D. OURAND,

DE WITT C. ALLEN.