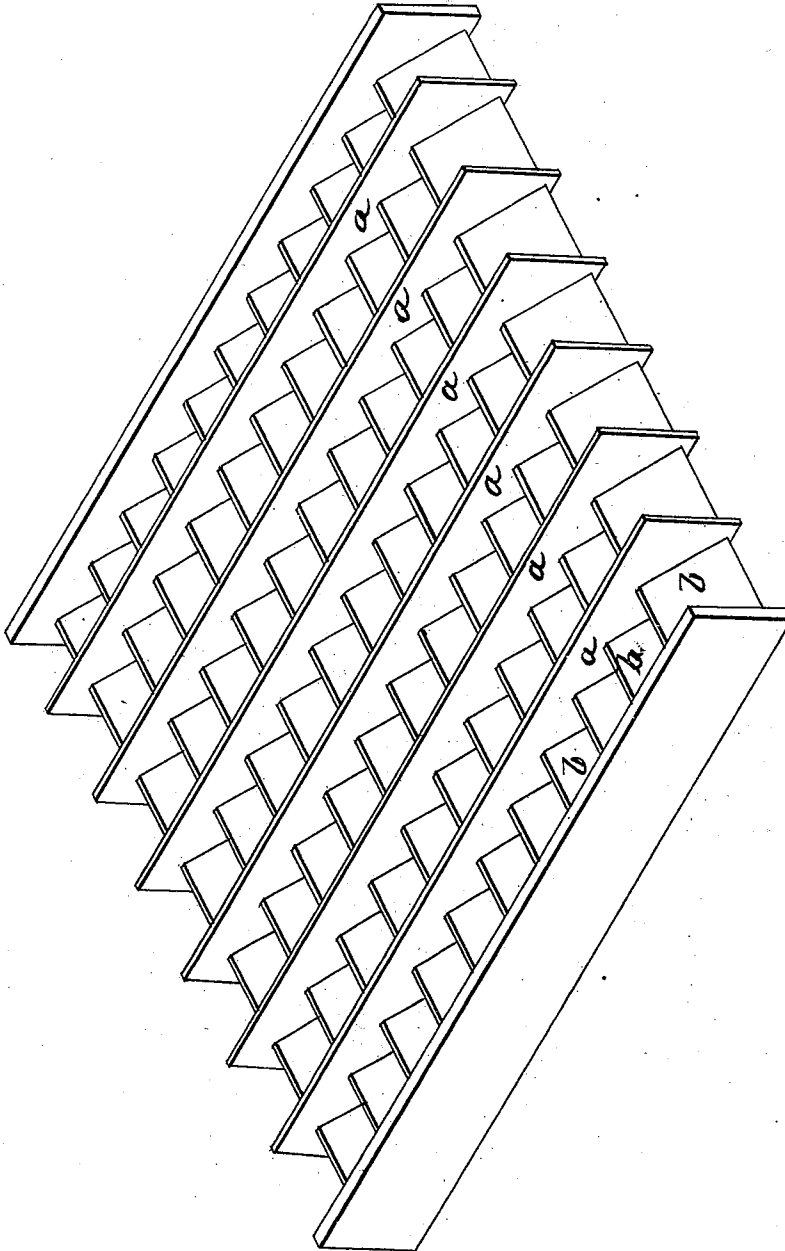


D. A. & S. CHURCH.

Grain Screen.

No. 4,600.

Patented June 27, 1846.



UNITED STATES PATENT OFFICE.

D. A. CHURCH AND S. CHURCH, OF FRIENDSHIP, NEW YORK.

IMPROVEMENT IN SCREENS FOR GRAIN, &c.

Specification forming part of Letters Patent No. 4,600, dated June 27, 1843.

To all whom it may concern:

Be it known that we, DAMON A. CHURCH and SMITH CHURCH, of Friendship, in the county of Allegany and State of New York, have invented a new and improved screen to be used in a winnowing-machine for the purpose of separating wheat or other grain from straw, chaff, &c.; and we do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing, making a part of this specification.

We construct our screen of thin broad strips of wood or metal, and combine them in a suitable frame as follows: The strips *a a* run longitudinally with the frame, parallel with each other and with the sides of the frame, having their sides in a vertical position. The strips *b b* cross the strips *a a* at right angles, having about three-fourths the space between them that there is between the longitudinal strips *a a*. The cross-strips *b b* pass through mortises in the longitudinal pieces *a a*, or are halved into mortises on their lower edges. The cross-strips *b b* are arranged with their sides at an angle of forty-five degrees, (more or less,) being in a line with the current of air from the wind-wheel. The upper edges of the longitudinal strips *a a* rise a little above the upper edges of the cross-strips *b b*, for the purpose of preventing the straws and chaff from falling into the spaces between the cross-strips, and also for the purpose of furnishing straight and smooth ways for the straw and chaff to pass off by the power of the blast of air from

the wind-wheel, thereby preventing their clogging and adhering to the cross-strips. The wheat falls through the spaces between the strips of the screen, and passes into the spout of the machine in the usual manner.

We arrange our screens in the vibrating frame of a winnowing-machine constructed in the usual manner, arranging them one above the other, the spaces between the strips of each screen diminishing from the uppermost to the lowest one in the frame; or we sometimes use a single screen by itself for some kinds of grain, or combine our improved screens with a series of wire screens in the same vibrating frame, placing our improved screen at the top of the frame and the wire screens underneath the same. The cross-strips *b b* should be of such a width that the top of each strip will overlap the bottom of the next strip adjoining it in the rear throughout the screen.

What we claim as our invention, and desire to secure by Letters Patent, is—

The forming a screen or series of screens of thin broad pieces or strips of wood or metal, united longitudinally and transversely with each other, the upper edges of the longitudinal strips being elevated above the upper edges of the transverse strips, substantially in the manner and for the purpose herein set forth.

DAMON A. CHURCH.
SMITH CHURCH.

Witnesses:

W. B. EVERETT,
WM. H. KING.