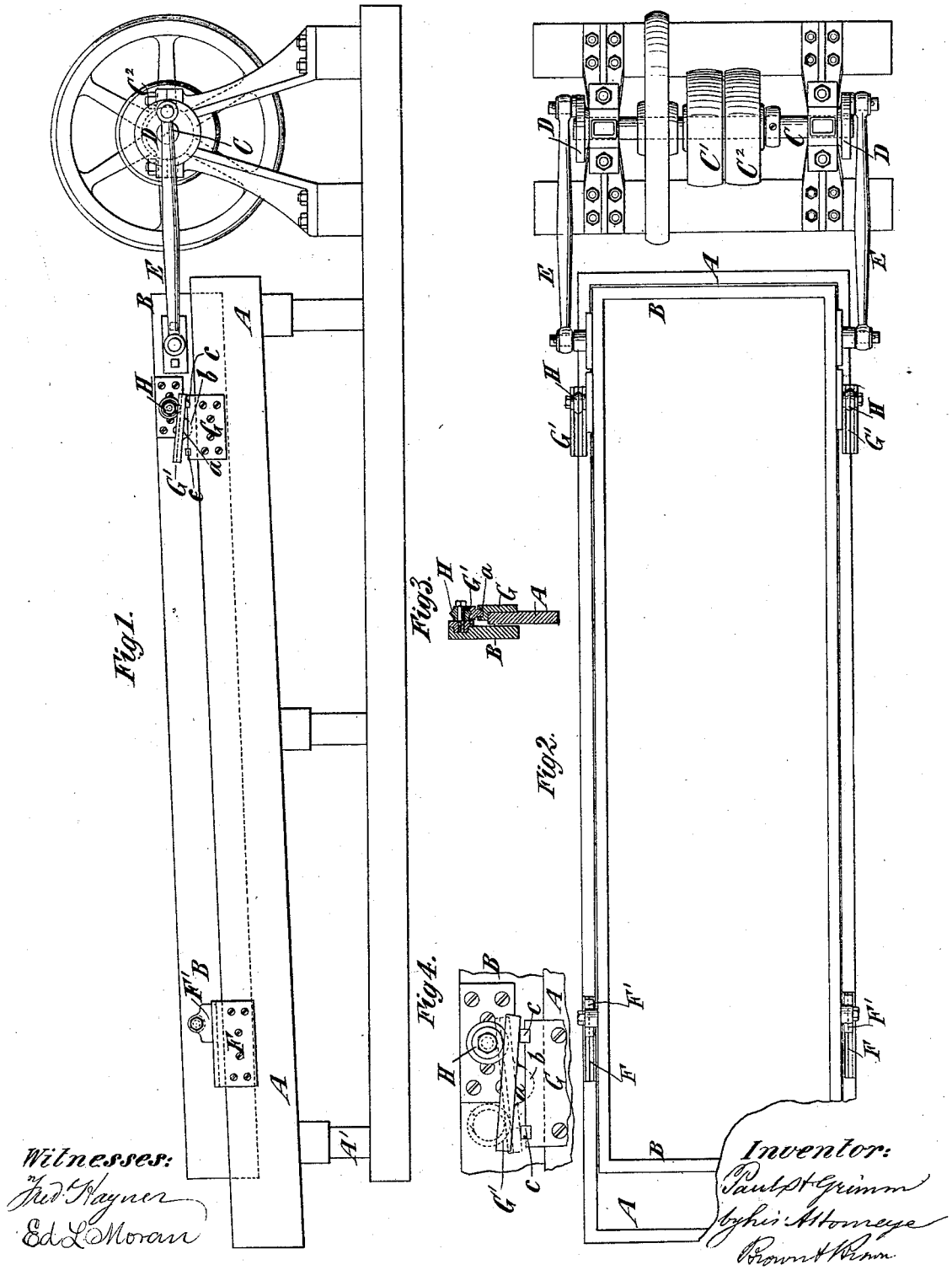
(No Model.)

P. H. GRIMM.

STARCH SEPARATOR.

No. 264,688. Patented Sept. 19, 1882.



UNITED STATES PATENT OFFICE.

PAUL H. GRIMM, OF GLEN COVE, NEW YORK, ASSIGNOR TO THE GLEN COVE MANUFACTURING COMPANY, OF SAME PLACE.

STARCH-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 264,688, dated September 19, 1882.

Application filed July 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, PAUL H. GRIMM, of Glen Cove, in the county of Queens and State of New York, have invented a new and useful Improvement in Starch-Separators, of which the following is a specification.

My invention relates to the kind of starch-separator which comprises a reciprocating screen, into which the water containing the amylaceous substance is allowed to run, and through which the finer amylaceous particles pass into a box or receptacle placed below the screen. In such separators the screen has been supported on swinging arms, which are pivoted to the box or receptacle, or which extend upward from a rock-shaft placed below said box or receptacle, and when thus supported the screen has, in addition to its reciprocating motion, a rising-and-falling motion, due to the arc-shaped paths described by the ends of the arms which support it.

My present invention consists in the combination, with the box or receptacle, the screen, and devices for imparting a reciprocating motion to the screen, of novel devices, hereinafter particularly described, for supporting the screen and giving it the necessary rising-and-falling motion, and which are simpler and more desirable than the rock-shaft and arms heretofore used.

In the accompanying drawings, Figure 1 represents a side elevation of a separator embodying my invention. Fig. 2 represents a plan thereof. Fig. 3 represents a sectional view of one side of the box or receptacle and screen and the devices for supporting the latter, and Fig. 4 represents the supporting devices upon a larger scale.

Similar letters of reference designate corresponding parts in all the figures.

A designates the stationary box or receptacle, and A′ the frame-work of the machine whereby it is supported.

B designates the screen, which consists of a rectangular frame, with a bottom of wire-gauze or other reticulated or foraminous material, which is not here shown.

C designates a shaft provided with fast and loose pulleys C′ C², over which a belt may be passed for rotating it, and at the ends of the shaft are cranks D, which, through rods E, impart a reciprocating motion to the screen B.

In lieu of the crank-shaft and connecting-rods, any other suitable mechanism may be employed to reciprocate the screen.

Both the box or receptacle A and the screen B are inclined, and at the lower end of the box or receptacle are secured pieces F, the upper surfaces of which are grooved or otherwise prepared to form bearings for shoes or runners F′, which are attached to the sides of the screen, and which slide freely on said bearings as the screen is reciprocated.

At the higher end of the box or receptacle it has secured to each side a plate, G, which supports a tilting block or piece, G′, that forms a bearing for a roller, H, attached to the side of the screen B. In this example of my invention the piece or block G′ has upon its under side a projection or lug, *a*, which fits in a recess, *b*, of corresponding form in the piece or plate G, and the projection or lug *a* forms a fulcrum or pivotal point, on which the piece G′ may rock or tilt from the position shown in full lines in Figs. 1 and 4 to the position shown in dotted lines in Fig. 4.

The piece or plate G may be provided under the opposite ends of the piece or block G′ with blocks of rubber, *c*, or other cushions, upon which the ends of the piece or block G′ alternately impinge as it rocks or tilts to and fro, and which prevent noise and deaden the shock which would result from the contact of iron with iron. The upper surfaces of the pieces or blocks G′ are provided with V-shaped grooves, and the rollers H have V-shaped peripheries, which fit the grooves and prevent the screen from movement laterally relatively to the box or receptacle A. The pieces or blocks G′ form bearings, on which the rollers H run back and forth as the screen is reciprocated, and as the rollers pass from one side to the other of the pivotal points of the bearings G′ the said bearings will tilt or rock, and thus produce the rising-and-falling motion of the screen. The rising-and-falling motion will be sudden, and will terminate with a slight jar as the ends of the bearings G′ strike the cush-

ions *c*, which will be beneficial, as it will tend to produce a more rapid separation of the finer amylaceous particles from the coarser.

The rollers H constitute in effect runners, and, instead of the rollers, shoes or runners approximately like those lettered F′ may be used.

It will also be evident that if the bearings G′ and the rollers H or runners were reversed in position, the rollers being on the box and the tilting blocks G′ on the screen, the action would be the same. In such case the rollers would constitute the bearings, and the pieces G′ would constitute runners. One tilting or rocking bearing and a single roller or runner might be arranged at the higher end of the screen, midway of its width, and, in connection with bearings on each side of the screen at its lower end, would properly support the screen.

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

1. The combination, with the box or receptacle A, the screen B, and devices for reciprocating said screen, of one or more tilting or rocking bearings, G′, and one or more rollers or runners, H, substantially as and for the purpose specified.

2. The combination, with the box or receptacle A, the screen B, and devices for reciprocating the screen, of the tilting or rocking bearings G′, attached to the box or receptacle, and the rollers or runners H upon the screen, substantially as and for the purpose specified.

3. The combination, with the box or receptacle A, screen B, and devices for reciprocating said screen, of the pieces or plates G, the tilting or rocking bearings G′, the cushions *c*, and the rollers or runners H, substantially as and for the purpose specified.

PAUL H. GRIMM.

Witnesses:
WM. H. EASTMENT,
E. T. PAYNE.