

J. F. RIGGS.

Skimmer for Evaporating Pans.

No. 43,743.

Patented Aug. 2, 1864.

Fig. 1,

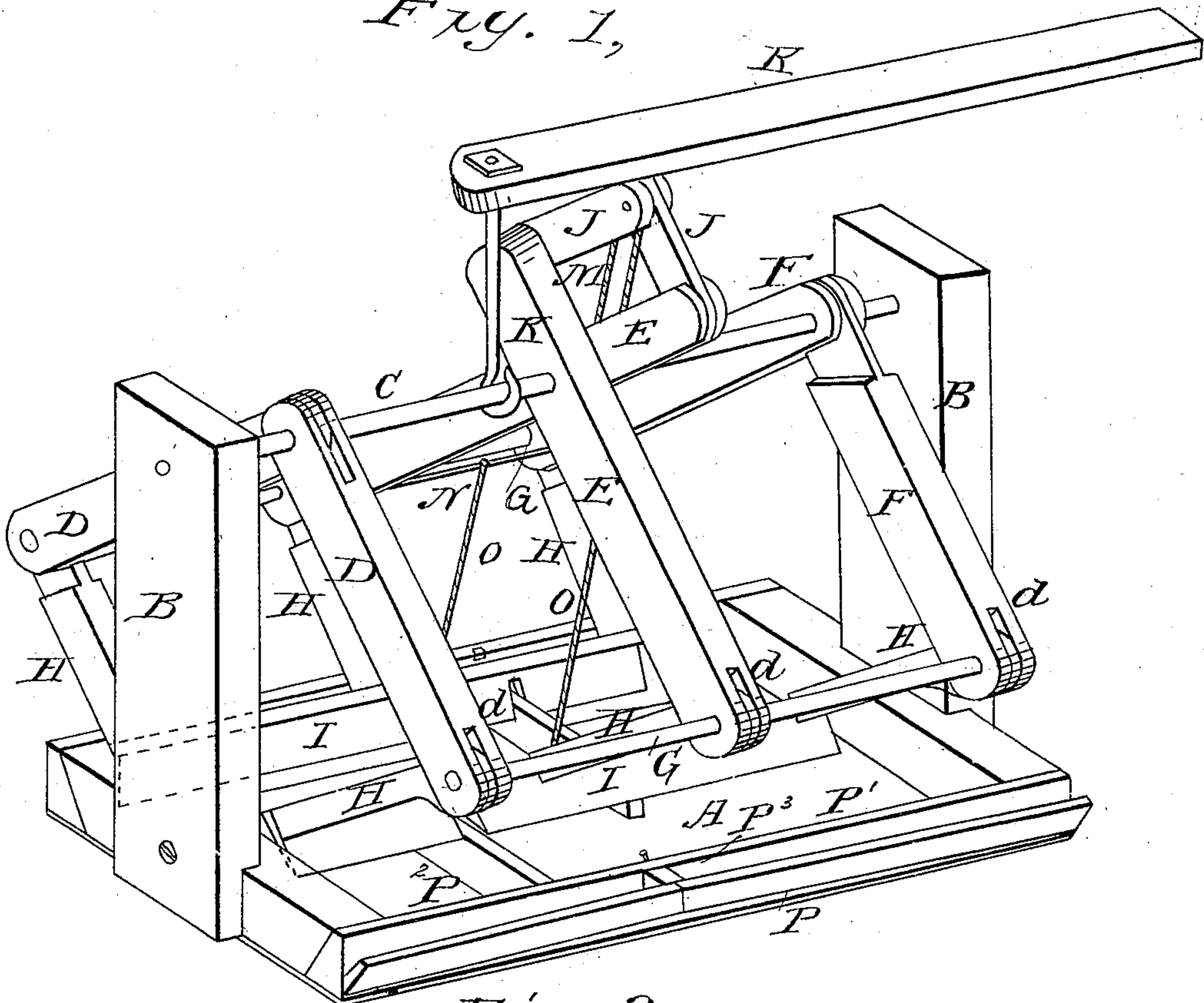
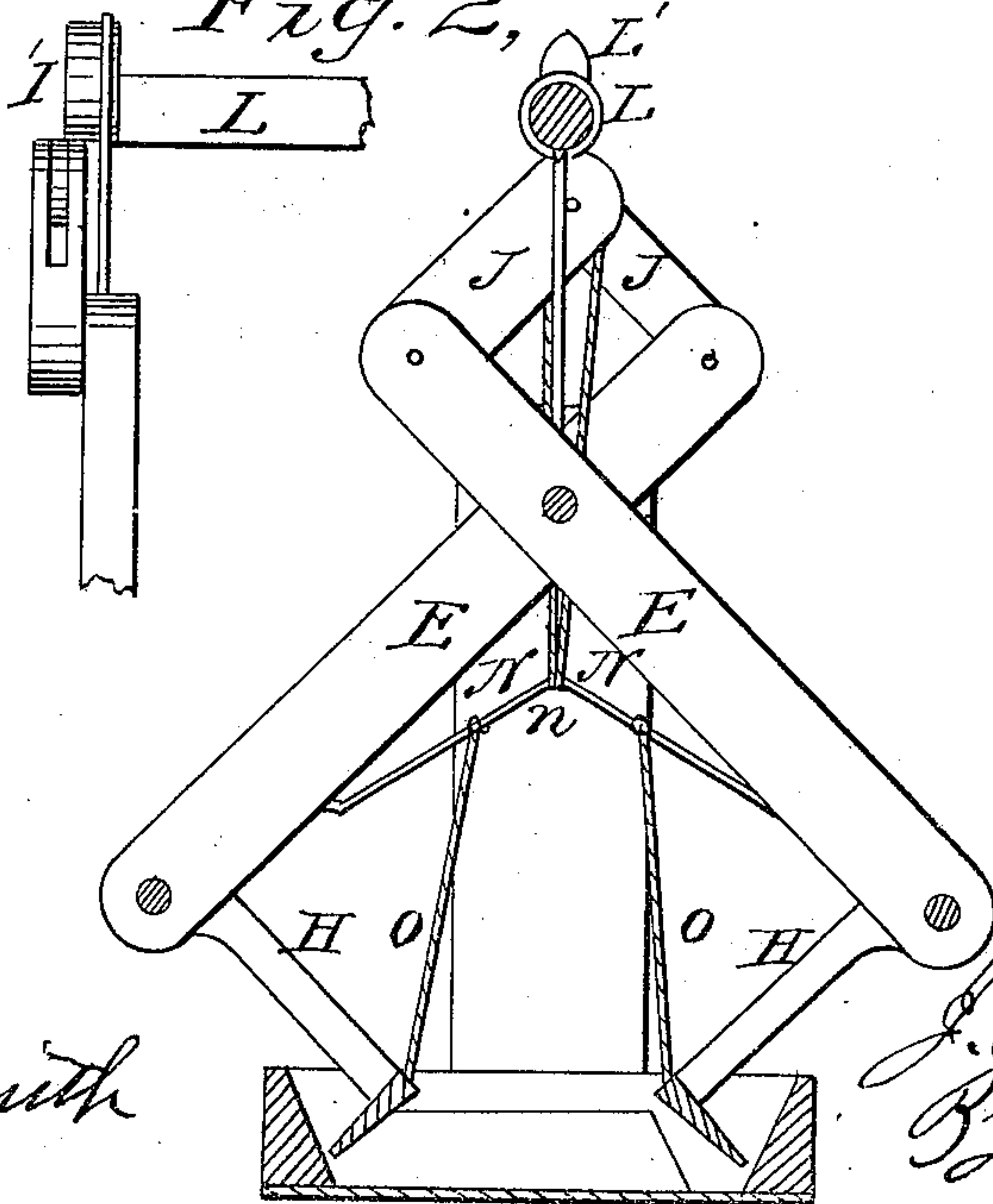


Fig. 2,



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JOHN FINDLEY RIGGS, OF FREMONT, NEBRASKA TERRITORY, ASSIGNOR TO HIMSELF AND S. G. DAILY.

IMPROVED SKIMMING ATTACHMENT FOR SUGAR-EVAPORATORS.

Specification forming part of Letters Patent No. 43,743, dated August 2, 1864.

To all whom it may concern:

Be it known that I, JOHN FINDLEY RIGGS, of Fremont, in the county of Dodge and Territory of Nebraska, have invented a new and Improved Skimming Attachment for Evaporators; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved skimmer. Fig. 2 illustrates a manner of operating the same by steam or other power.

Similar letters of reference indicate corresponding parts in the several figures.

The subject of my said invention is a novel and improved skimming attachment, applicable to evaporators of any form, by which scum may be readily and effectually removed from the sirup during the boiling process, and (if desired) that portion of it which is worthless separated from that which is useful, in order that the latter may be returned to the pan and resubmitted to the evaporating process, as will be hereinafter fully explained.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A may represent an evaporating-pan of any suitable construction, formed with sloping sides, as shown, to facilitate the skimming operation.

B B represent uprights rising from the opposite ends of the pan A, and supporting a rod, C, which is rigidly inserted into the upper ends of said uprights.

D D E E F F represent a series of levers, which are pivoted or loosely hung in couples upon the rod C, and attached at their respective lower ends to rigid rods G G.

H may represent a series of levers somewhat shorter than the levers D E F, and pivoted upon the rods G, with their upper ends occupying slots *d* in the lower ends of the several levers D E F.

To the inner and lower ends of the levers H are attached the skimmers I I, which may be formed of suitable strips of wood, having niches in their lower ends to adapt them to

work between the partitions in the evaporating-pan.

J J represent toggle-levers attached to the upper ends of the levers E E.

K represents a lever, which may be fulcrumed by means of a rod, K', adapted to be hooked over the rod C. By this lever K it is designed to operate the skimmers I I by hand, by bearing down upon the toggle-levers J J, as will be explained.

As shown in Fig. 2, the apparatus is adapted to be readily operated by steam or other power by the employment of a shaft, L, upon the end of which is mounted a cam, L', of any suitable form; which cam may be so attached to either of the toggles J that the rotation of the shaft L will cause the cam to press down said toggles and operate the skimmers in the manner to be described.

M represents a cord or chain suspended from the toggle-levers J J, and sustaining the inner ends of rods N N, which are jointed together at *n*, and attached at their other ends to the lower ends of the levers E by means of suitable hinges, these rods being employed to limit the movement of the skimmers I I.

O O represent cords or chains, attached at their respective ends to the rods N N and skimmers I I. These cords O O prevent the skimmers from penetrating too deep, and cause them to move in a direct horizontal plane across the pan A.

On each side of the evaporator A is formed a trough, P, which is divided into two compartments, P' P², by a partition, P³.

Operation: The toggle-levers J J being pressed down in either of the methods described, the levers D E F are expanded or turned outward, so that each is made to describe the arc of a circle, whereby the upper ends of the levers H are both elevated slightly and drawn away from the center of the evaporating-pan A. As the levers H are pivoted, as before explained, their lower ends have a natural tendency to fall or descend as their upper ends are elevated by the movement of the levers D E F; but they are caused to maintain a uniform or unchangeable position with relation to the pan A by the rods N N and cords O O, the jointed ends of said rods being adapted to descend in such gradual manner, as

the levers D E F are expanded, that the distance between the points of the rods N N, at which the cords O O are fastened, and the lower ends of the levers H will remain unaltered during the movement of the various levers until the skimmers I I come in contact with the sloping sides of the pan A. It will be seen from the above description that by this arrangement of devices the skimmers act upon the liquid being evaporated with equal effectiveness throughout the entire pan. When the skimmers reach the sloping sides of the pan A, the cords O O slack, the levers H turn upon their pivots, and the skimmers are thereby allowed to ascend in close proximity to the said sides and deposit the scum which they have gathered into the troughs P. The juice is poured into the pan A at one end, and while it is traversing, say, one-half the length of the pan, or as far as the partition P³, the heat and ebullition throws to the surface of the liquid all that portion of the scum which is distinguishable by its greenish color and unpleasant odor, and which is well known to be utterly useless. After the juice passes the partition P³, the light-colored scum rises, this scum being valuable, as it contains saccharine matter which may be obtained in a pure state by resubjecting the scum to the evaporating

process. Thus it will be seen that when the skimmers are put in operation the worthless or green scum may be removed as fast as thrown to the surface and deposited into the trough P', and that the good or yellow scum may at the same time be removed and deposited into the trough P², whence it may be returned to the evaporating-pan.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The skimmers I I, operated by a lever, cam, or other suitable device through the medium of pivoted levers D E F H J J, substantially in the manner and for the purposes herein set forth.

2. The cords M O O and hinged wires or rods N N, arranged, substantially as described, and operating to cause the skimmers to move in an exact plane across the face of the liquid being evaporated, as explained.

3. The partitioned trough P P' P² P³, employed for separating the useful from the worthless scum, substantially as described.

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Witnesses:

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