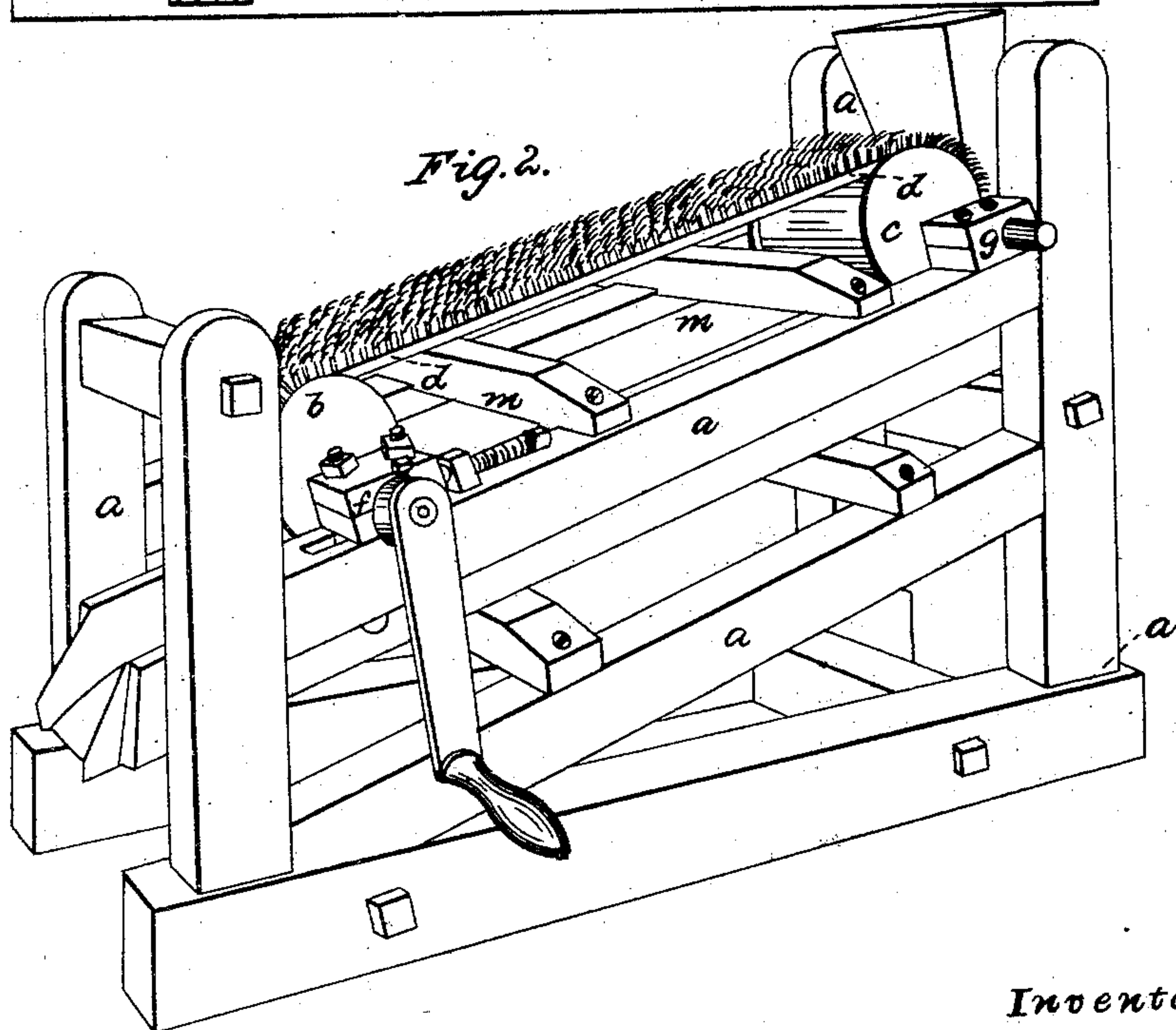
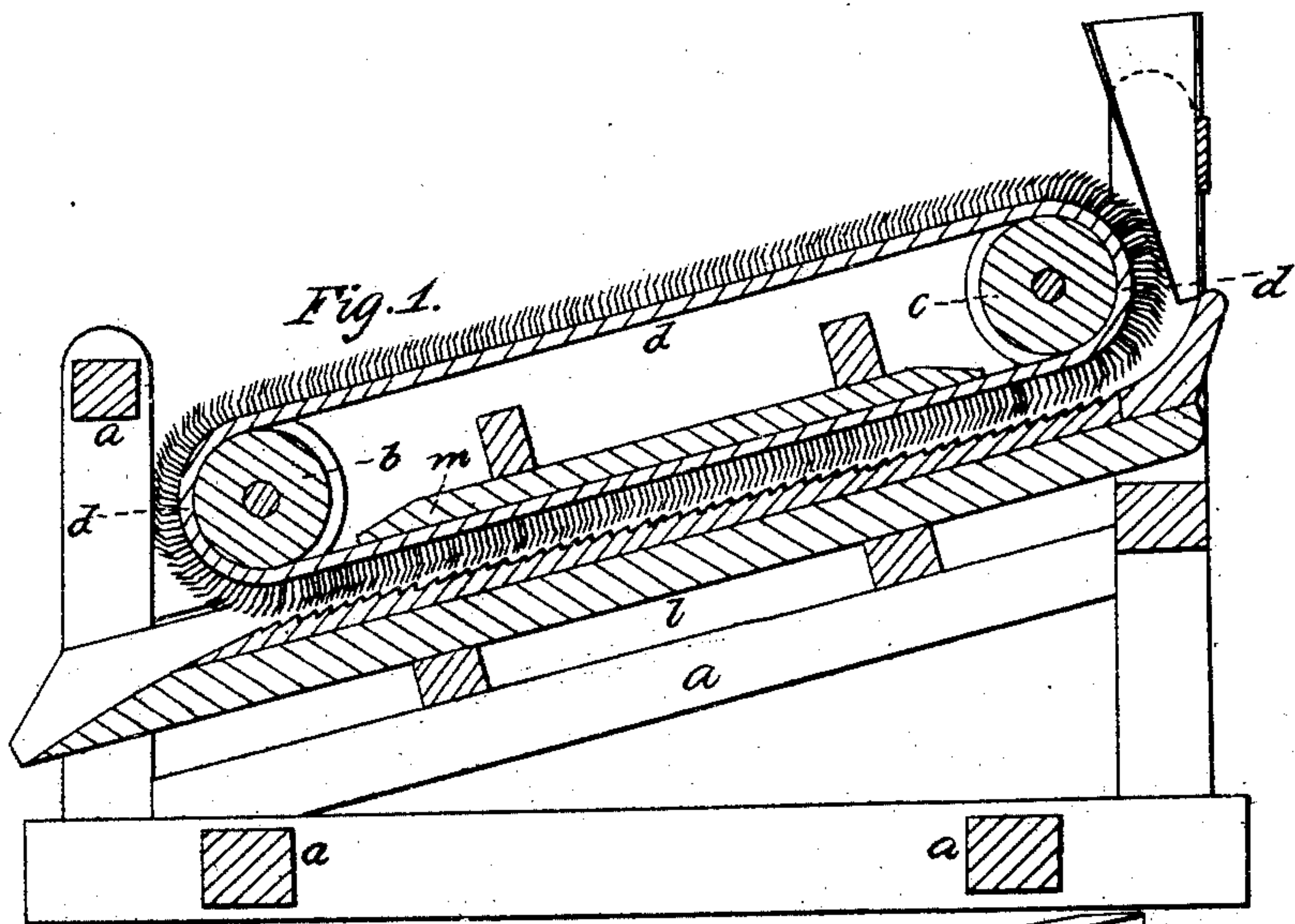


D. LOMBARD.
Rice Cleaner.

No. 30,489.

Patented Oct. 23, 1860.



Witnesses:
J. B. L. Byr-
J. B. Collins

Inventor:
Daniel Lombard

UNITED STATES PATENT OFFICE.

DANIEL LOMBARD, OF BOSTON, MASSACHUSETTS.

RICE-HULLING MACHINE.

Specification of Letters Patent No. 30,489, dated October 23, 1860.

To all whom it may concern:

Be it known that I, DANIEL LOMBARD, of Boston, in the county of Suffolk, in the State of Massachusetts, have invented certain
5 new and useful Improvements in Rice-Hulling Machines; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my
10 invention, so full and exact as to enable those skilled in the art to practice it.

Figure 1 is a vertical, longitudinal, sectional elevation, and Fig. 2, a perspective view of a machine embodying my invention.
15 Similar letters refer to similar parts in both figures.

The object of my invention is to remove the husk from the grains of the rough rice or "paddy"; and its nature consists in the
20 mechanical devices which I employ for that purpose.

The frame work, *a*, supports, at suitable distances from each other, and at different heights, the drums, *b*, *c*. The endless band
25 *d*, passes around these drums, and is thickly studded with wire teeth, having a triangular section, after the manner of the clothing for card cylinders. Below the belt, *d*, the piece, *l*, is fixed upon the same angle, and
30 parallel with it; *l* bears an iron or steel plate, having serrated teeth formed upon it, in the manner fully shown in Fig. 1, and it is provided also, as are the drums, *b*, *c*, with ledges, serving to keep the belt in
35 place. The belt is made of such width as to bear upon the ledges secured to *l*, the belt being filled with teeth between the ledges only. By this arrangement, the belt is so supported, as to prevent the teeth from
40 coming into contact with the metallic bed, by reason of its sag, when there is no rice passing through the machine. The transverse sag of the belt, will be slight, as it is made comparatively narrow and quite
45 thick. The ledges upon *l*, are the sides of the "chute" through which the rice passes, and of which the teeth in the metallic plate form the bottom, and the wire teeth the top.

The boxes, *f*, are provided, as illustrated,
50 with means for increasing or diminishing the distance apart of the drums for the purpose of regulating the tension of the belt,

the upper boxes, *g*, being stationary. At the upper or highest end of the belt, a hopper is fixed to the frame work, for supplying grain to the machine; the wire teeth catch in the husk of the rough rice, which is carried along by them, into and over the indentations formed in the serrated plate upon *l*, by which movement each grain is
55 rotated, and the different portions of the husk are presented to the cutting action of the sharp wire teeth, and are removed by the teeth, and by the friction which each grain receives in passing through the machine. The belt being very flexible between its supports, bears upon the rice sufficiently, with a yielding pressure, to cause the sharp points of the teeth to cut the husk in many places, as the grains rotate under the belt,
60 and over the serrated plate in their passage through the machine.

The back, *m*, is placed over the belt, so that it runs between the back and the serrated plate. The object of the back is to
75 prevent the belt from yielding to such an extent, as will permit the passage of the grains without contact with the teeth. The bed, *l*, and the ledges on *l*, are provided with means for adjustment, to suit the different sizes of the grains, which should be sorted by sieves, before they are subjected to the action of my machine. The triangularly shaped teeth are so set in the belt, that their sharpest edge or angle is that which
80 meets the rice in the rotation of the belt. In consequence of the form of the section of the teeth they retain their sharpness, as their length is decreased by wear, for which wear, the adjustability of the bed *l*, and the
90 ledges on *l*, affords compensation.

Having described my invention, what I claim therein as new, and desire to secure by Letters-Patent of the United States, is—

The arrangement of a wire studded belt, passing over drums, and between serrated metallic plates, or their equivalents, and the back, *m*, and supported on the ledges secured to *l*, all operating together substantially as and for the purpose described.

DANIEL LOMBARD.

Witnesses:

T. B. CROSBY,
J. B. COLLIN.