2 Sheets--Sheet 1.

O. & E. W. ALLEN.

Harvesters.

No. 150,930. Patented May 12, 1874.

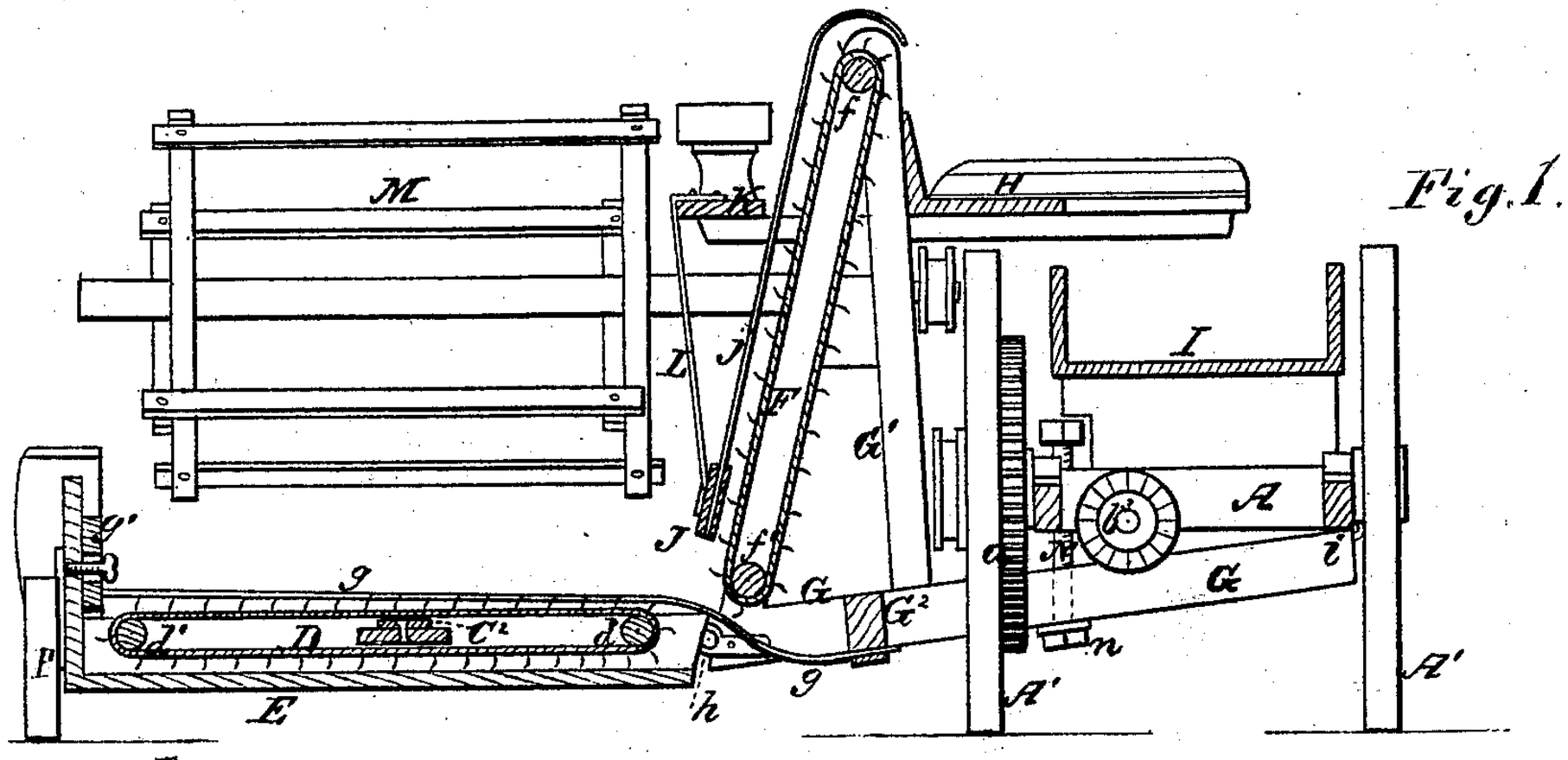

Fig. 1.

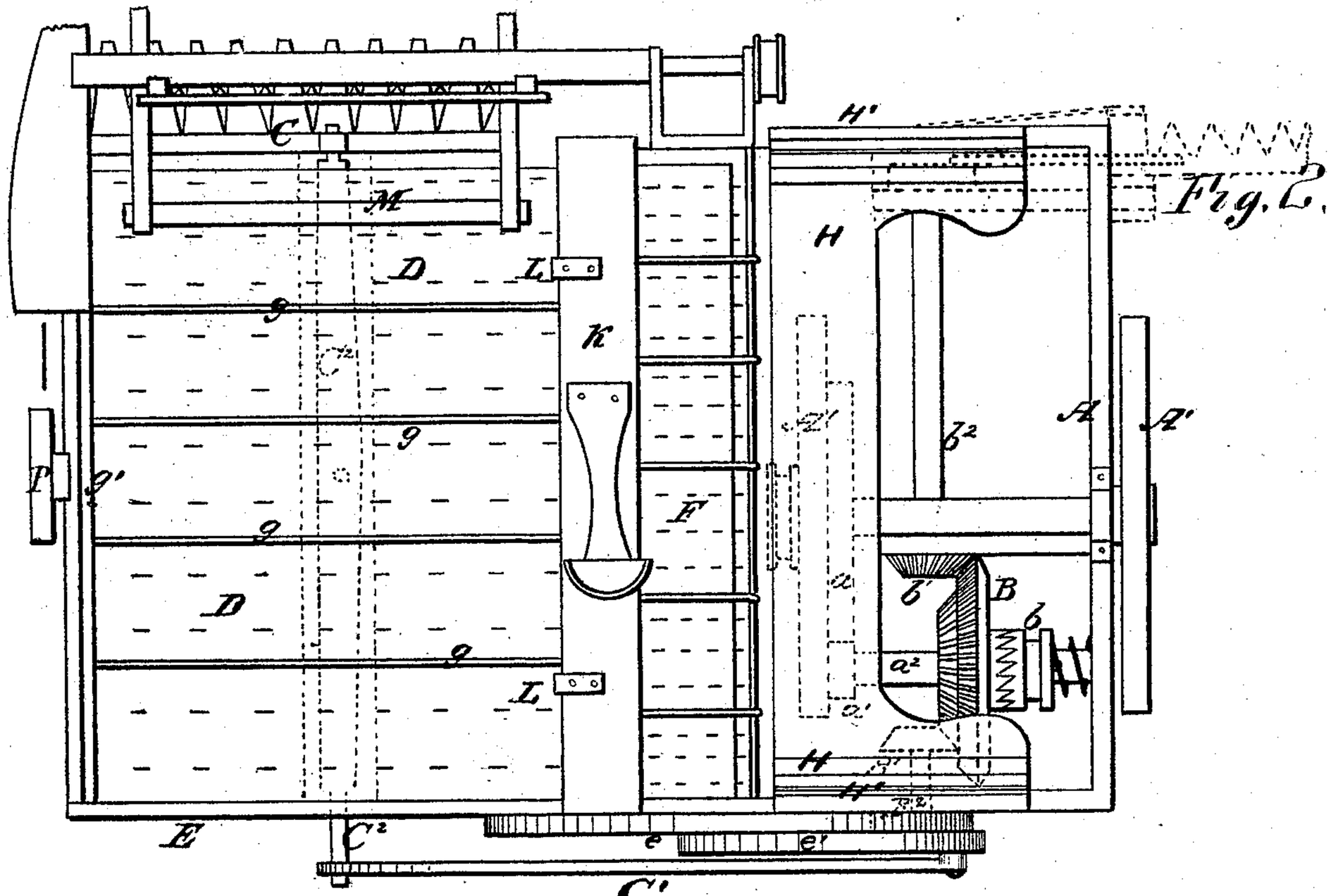

Fig. 2.

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2 Sheets--Sheet 2.

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Fig. 3.

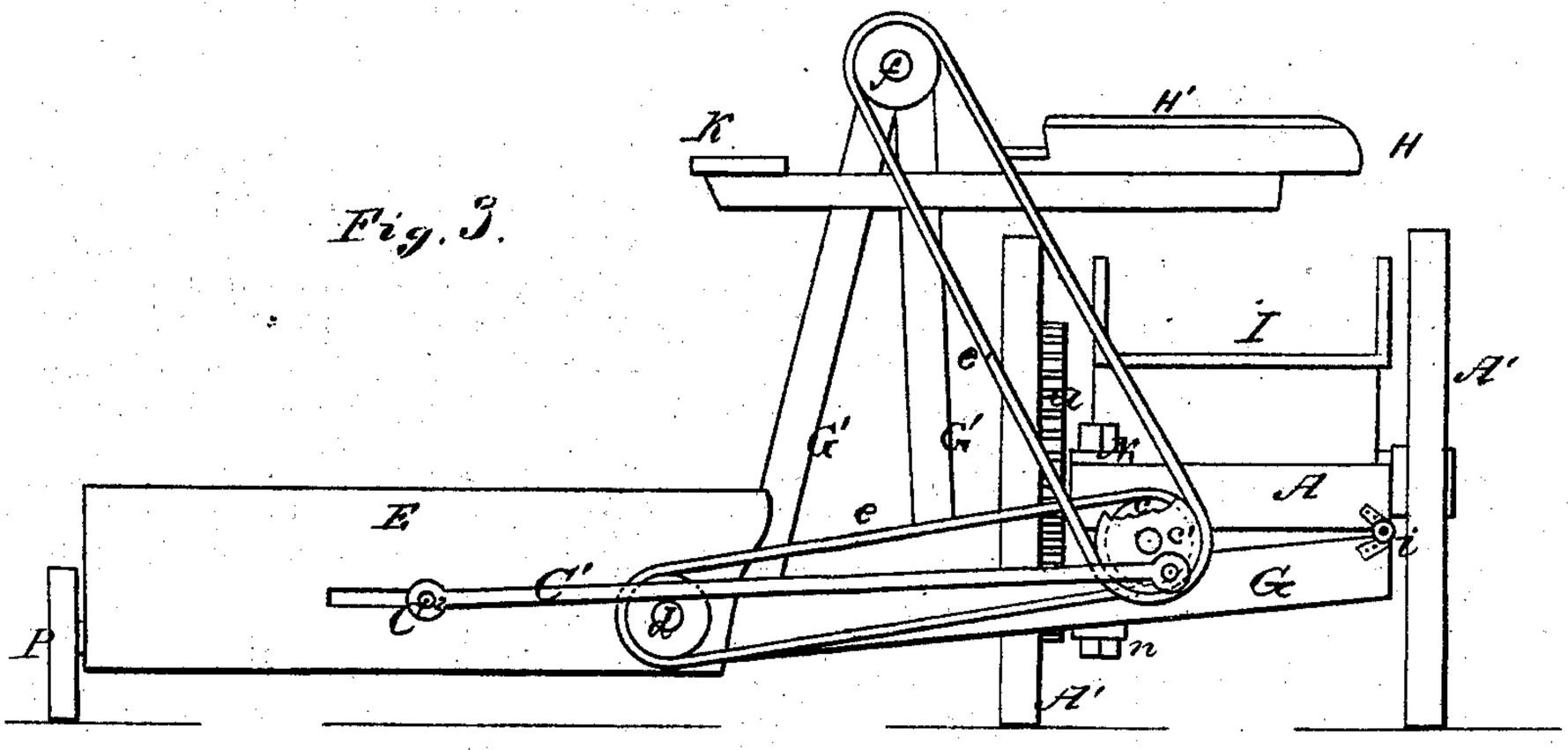
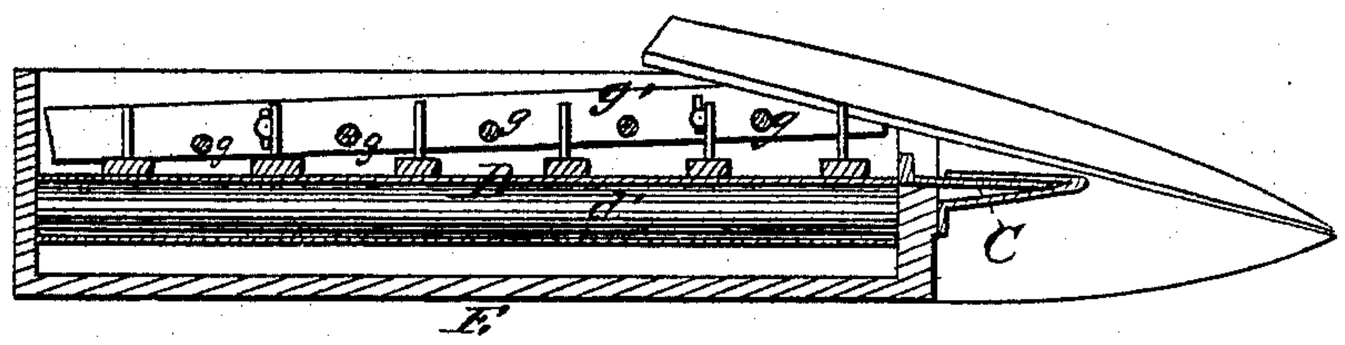


Fig. 4.



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UNITED STATES PATENT OFFICE.

OSCAR ALLEN AND ETHAN W. ALLEN, OF MARSHALLTOWN, IOWA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **150,930,** dated May 12, 1874; application filed December 13, 1873.

To all whom it may concern:

Be it known that we, OSCAR ALLEN and ETHAN W. ALLEN, of Marshalltown, in the county of Marshall and State of Iowa, have invented a new and valuable Improvement in Harvesters; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a sectional view of our harvester. Fig 2 is a plan view of the same. Figs. 3 and 4 are detail views of the same.

This invention has relation to machines for cutting grain, and delivering the same upon an elevated table to be bound. The nature of our invention consists in the novel construction and arrangement of the parts, as will be hereinafter more fully described and claimed.

The following is a description of our improvements.

In the annexed drawings, A represents the main draft-frame, which is supported by two driving-wheels, A′ A′, on the axle of which a large spur-wheel, *a*, is keyed. This wheel *a* engages with a pinion, a^1, on a transverse shaft, a^2, on which shaft the bevel-wheel B is applied, which has two concentric rows of teeth, and which is connected to its shaft by a spring-clutch, *b*. By means of this clutch the mechanism which actuates the sickle and the grain elevator can be stopped or started at pleasure. The external circle of teeth on the wheel B engage with a pinion, b^1, on a shaft, b^2, which has a crank-wheel on one end, which wheel gives motion to a pitman for operating a mowing-sickle, not shown in the drawing. The inner circle of teeth on the wheel B engage with a pinion, B^1, on a short shaft, B^2, which has two belt-wheels keyed on it in rear of the frame A. One of these belt-wheels, *c*, communicates rotation to a roller, *d*, by means of a belt, *e*, and the other belt-wheel, *c′*, communicates rotation to a roller, *f*, by means of a belt, *e′*, and also communicates a reciprocating motion to a sickle, C, by means of a pitman-rod, C^1, and a vibrating lever, C^2, which latter is arranged between the upper and lower portions of an endless platform-apron, D. The apron D passes around the roller *d*, and a roller, *d′*, which rollers have their bearings in the front and rear bars of the platform-frame E. This apron D may be furnished with rows of teeth arranged at and near its front part for the purpose of taking positive hold of the butt ends of the grain. Over the apron D, and parallel to the front edge of the platform-frame E, we arrange rods *g*, which are secured at their outer ends to a vertically-adjustable strip, *g′*, which is secured to the outer guard-board by set-screws. The inner portions of these rods *g* are curved downward so as to form a rack beneath an elevating-apron, F, and the inner extremities of these rods are adjustably secured to a longitudinal bar, G^2, for a purpose hereinafter explained. The strip *g′* is adjustable for the purpose of raising or lowering the rods *g*, according to the condition of the grain, so that the butts of the grain will be moved by the apron D evenly with the heads of the grain, thus delivering the grain straight and properly to the elevating-apron F. The endless apron F passes around the roller *f* and a roller, *f′*, which rollers have their end bearings in standards G^1 of two transverse bars, G, to the outer ends of which the platform-frame E is connected by hinges *h*. These bars G extend laterally beneath the front and rear ends of the draft-frame A, and are connected to the inner side thereof by means of hinges *i*. The apron F may be armed with teeth which will take the grain from the rack formed by the rods *g*, elevate it and deliver it upon a binder's table, H, the ends of which are hinged so as to form folding wings H′ H′. This table is supported by horizontal arms springing from the standards G^1, and it has beneath it a binder's stand, I, which is supported upon, and removable from the draft-frame A. To keep the grain on the apron F, we employ self-adjusting rods *j*, the upper ends of which are curved over the upper apron-roller *f*. The lower ends of these rods *j* are secured into a horizontal board, J, which, together with the rods *j*, is suspended from a seat-board, K, by means of flexible straps L, adjustably attached to this board for the purpose of raising or lowering this board and its rods. These parts J*j*, we term the "guard,"

as they cover the grain while being raised by the teeth on the apron F, and prevent the grain from falling back or being scattered by the wind; at the same time this guard accommodates itself to the varying bulks of grain, and allows the same to be evenly elevated. M represents the grain-reel, the supports of which are secured to the standards G^1, so that it will rise and fall therewith. This reel is rotated by means of a belt applied around a pulley on its shaft, and also around a pulley on the axle of the transporting-wheels. The bars G, to which the platform-frame is hinged, are vertically adjustable by means of screws N and nuts *n*, for the purpose of cutting higher or lower, as may be required. The outer end of the platform-frame is supported by a grain-wheel, P, and is vertically adjustable thereon.

By removing the grain-cutting and elevating apparatus from the draft-frame, and hinging a cutting apparatus to the front right-hand corner of this draft-frame, we have a machine which is adapted for mowing.

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

1. The transverse bars G, supporting the elevating-apron F, and hinged to the inner side of the draft-frame, in combination with the hinged platform, substantially as specified.

2. The rods *g*, having their inner portions curved downward to form a rack beneath the elevating-apron F, and their inner ends adjustably secured to the bar G^2, and their outer ends secured to the vertically-adjustable strip *g'*, substantially as and for the purpose described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

OSCAR ALLEN.
ETHAN W. ALLEN.

Witnesses:
RICHD. CROCKER,
LEWIS YOUNG.