

M. Free.

Slat Blind Weaving.

N<sup>o</sup> 56,493.

Patented Jul. 17, 1866.

Fig. 2.

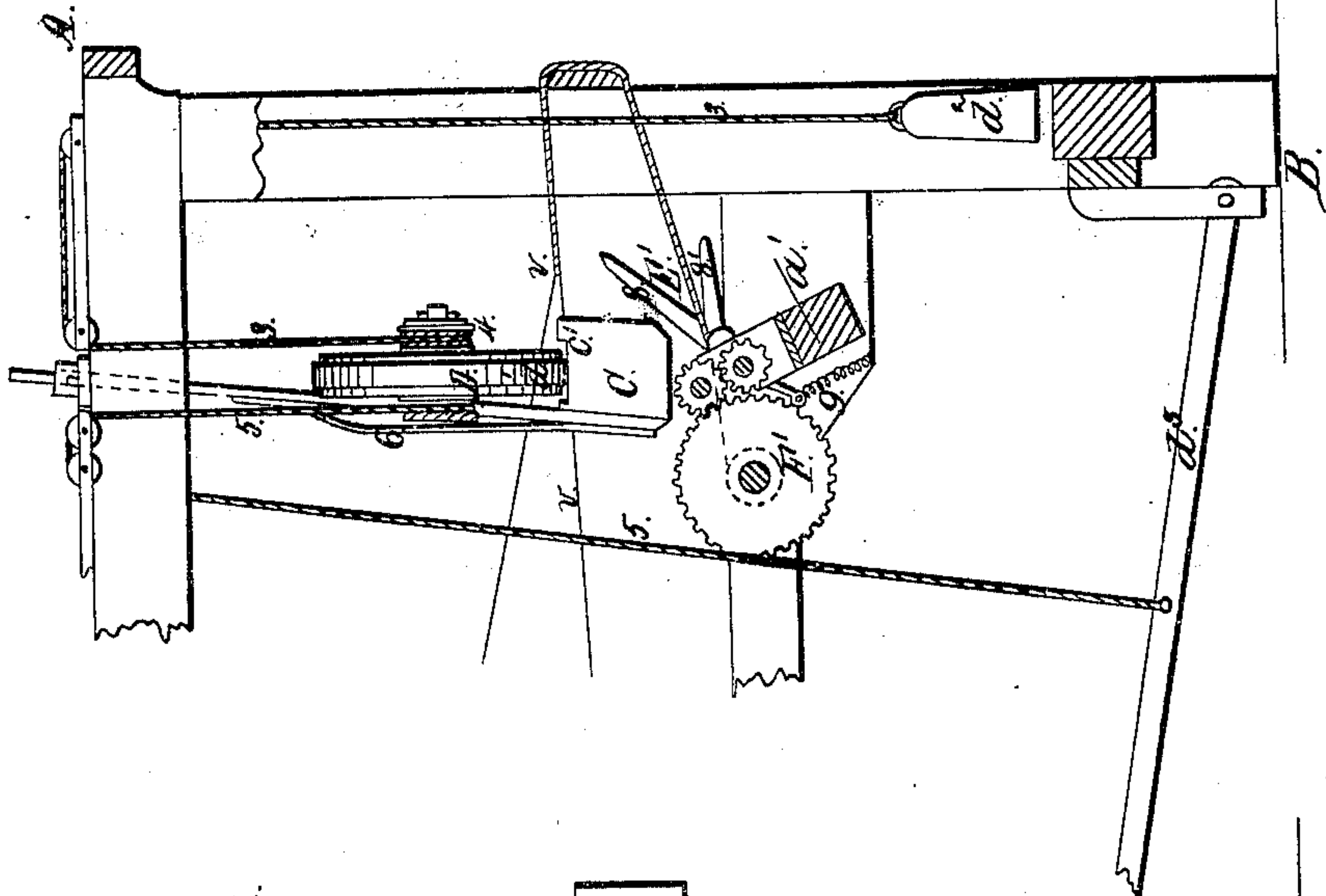
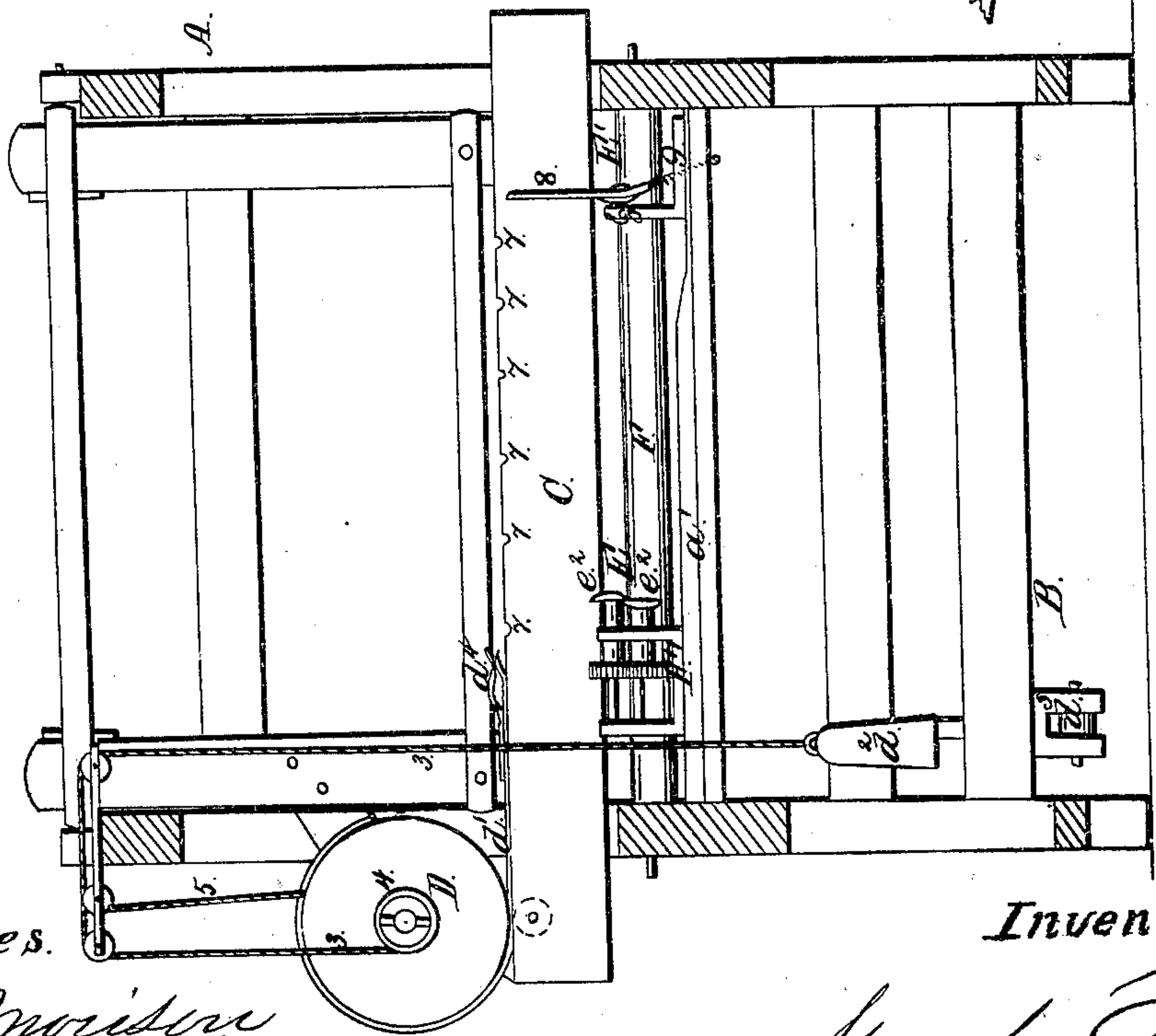


Fig. 1.



Witnesses.

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## IMPROVEMENT IN LOOMS FOR WEAVING SLAT-BLINDS.

Specification forming part of Letters Patent No. 56,493, dated July 17, 1866.

*To all whom it may concern:*

Be it known that I, MARTIN FREE, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Looms for Weaving Slat Blinds or Shades for Windows; and I 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 accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of a blind-loom having the front rails and posts removed, and showing my said improvement applied thereto, and Fig. 2 a sectional side view of the forward portion of the loom, having the lower part of the near side of the frame removed, showing my improvement applied, like letters and numbers of reference indicating the same parts when in the different figures.

The object of my improvement is to facilitate the introduction of the wooden slats within the shed produced in the warp in weaving the blinds, and also to facilitate the trimming or cutting the side edges of the same.

My invention consists in the application of a device constructed and operating substantially as hereinafter described, whereby the slats are automatically drawn within the shed, and thus the difficult and tedious practice of inserting them by hand avoided, and great facility in the operation afforded.

My invention also consists in the employment or use of automatically-operating cutters, applied as hereinafter described, for the purpose of trimming the edges of the blinds as they pass through the loom in weaving.

In the drawings, A B is the frame of the loom; C, the lay thereof; D, the device for drawing the slats within the shed, and E E' the cutters for trimming the edges of the blinds.

The usual treadles and heddles for producing the required shed in the warp, being well known and not necessary to explain my invention, are not shown in the drawings.

The lay C has a flat-bottomed groove,  $c'$ , made along in its upper side, in which a strap,  $d'$ , of stiff leather, about a quarter of an inch thick and one and a quarter inch wide, is caused to slide longitudinally right and left by

means of the wheel D, which has a flat groove in its periphery for the reception of the strap  $d'$ , which has one of its ends fastened therein. It is also pivoted to the lay C, so as to be capable of being oscillated in such a manner that it will cause the strap  $d'$  to advance and retreat along in the groove  $c'$  of the lay, the oscillations being effected by means of a weight,  $d^2$ , and a cord, 3, the latter being attached around a pulley, 4, which is fixed on one side of the wheel D, and by a treadle,  $d^3$ , and a cord, 5, attached around a pulley, 6, which is fixed on the opposite side of the wheel D, (see Fig. 2,) so that when the treadle  $d^3$  is pressed downward by the operator's foot the wheel D will be turned around, and thus push the strap  $d'$  along in the groove  $c'$  of the lay, and when his foot is removed from the treadle the weight  $d^2$  will sink, and thus turn the wheel D around in an opposite direction and cause it to wind up or withdraw the strap  $d'$  to its normal position in the groove  $c'$ , as seen in Fig. 1.

Attached to the free end of the strap  $d'$  is a spring-nipper,  $d^4$ , and the sides of the groove  $c'$  are divided into equal parts by a series of transverse grooves or notches, 7 7, for the purpose of allowing the warp-cords of the lower part of the shed to come in contact with the bottom of the groove  $c'$ , and thus allow the strap  $d'$  and its nipper  $d^4$  to pass over them freely and accurately without leaving the groove  $c'$ .

There are two differently-constructed trimming-cutters, E and E', shown, one for each edge of the blind. The cutter E consists of two disk-knives,  $e^2 e^2$ , having their cutting-edges lapped together, and these disks are caused to rotate in a suitable support fixed on a cross-beam,  $a'$ , in front of the take-up roller F by means of a small pinion on the shaft of each disk, and operated by means of a large spur-wheel, F', fixed on the take-up roller F, which gears into one of them. (See Fig. 2.) The cutter E' consists of two cutting-blades, 8 8', operating together as a pair of scissors; but the lower blade, 8', is fixed, while the upper one, 8, is raised upward by a spiral spring, g, attached to its rear end and to the beam  $a'$ , and is closed upon the lower blade, 8', by means of the lay, which strikes it down, so as to cause it to cut, by closing on the said under



blade in beating up the slats of the blinds. Both the cutters of the loom may be of either of the two constructions shown.

Operation: The faint lines *vv* represent the warp-cords and a portion of a blind as in the loom, the warp being separated to form the shed for the reception of the slat; and it will be readily understood that when the operator presses down the treadle *d*<sup>3</sup> he will cause the strap *d'* to be advanced along in the groove *c'* of the lay C to the right-hand end of the shed, and that then all that is necessary to introduce the slat along in the shed is that the operator push one end of the slat between the jaws of the spring-nipper *d*<sup>4</sup>, and then remove his foot from the treadle, when the weight *d*<sup>2</sup> will turn the wheel D around in an opposite direction, so as to cause it to quickly wind up the strap *d'*, and thus draw the slat along within the shed, as required, after which the beating movement of the lay C forces it in place and releases it from the nipper.

It will also be seen that as the woven blind fabric is drawn back by the take-up roller its

edges will be accurately and uniformly trimmed by the actions of the two cutters E E'.

By means of this my improvement the well-known slat blinds or shades can be woven and trimmed with much greater facility and accuracy than heretofore.

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

1. The application to a slat-blind loom of the slat-feeding device D *d'* *d*<sup>4</sup>, the same being constructed, arranged, and operated substantially as and for the purpose described.

2. The employment or use in a slat-blind loom of either or both of the automatically-acting cutters E E', the same being applied so as to operate substantially as and for the purpose described.

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Witnesses:

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