(No Model.) 2 Sheets—Sheet 1.

J. G. GROFF.

SAW GUARD.

No. 323,318. Patented July 28, 1885.

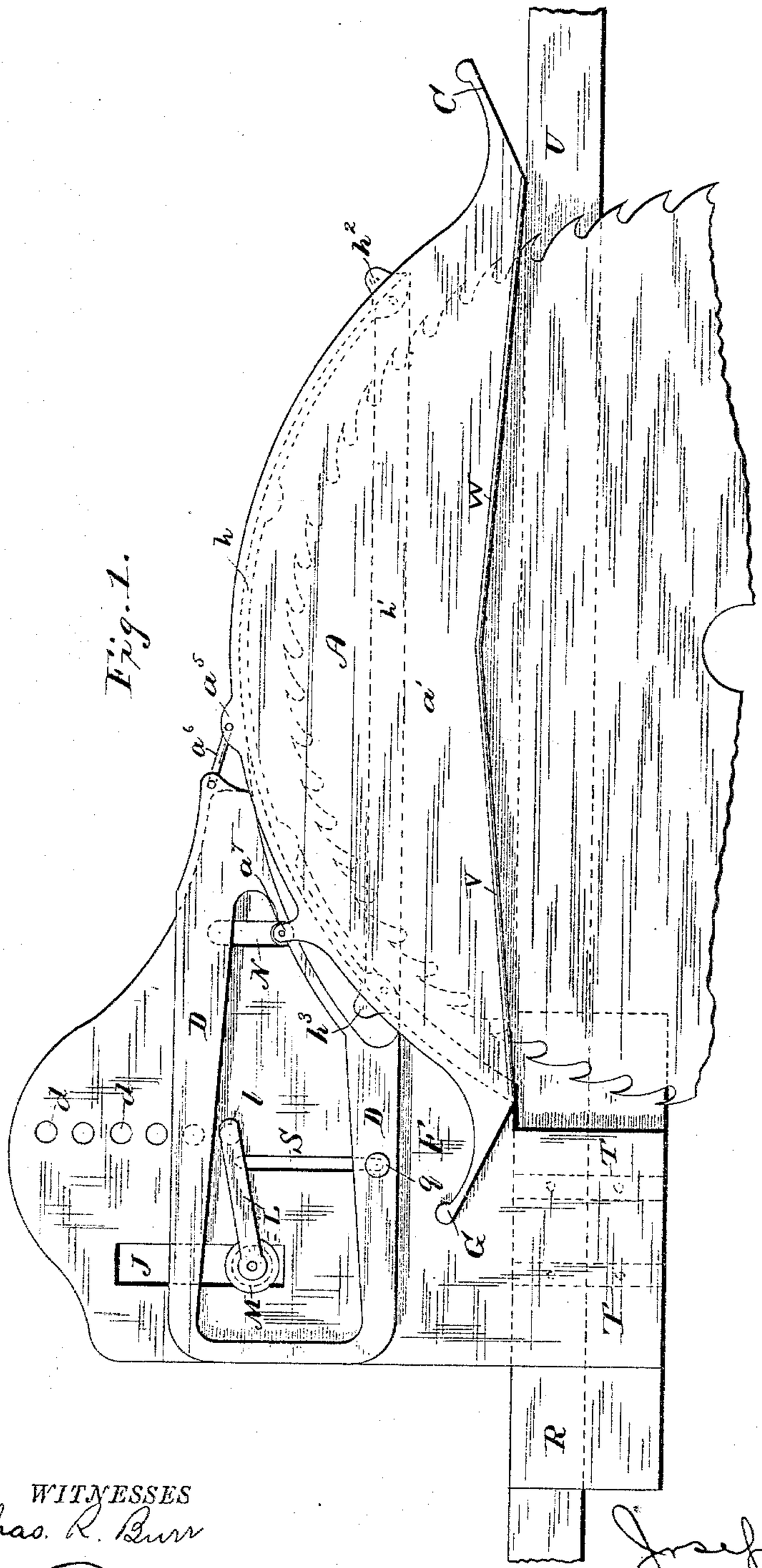

Fig. 1.

Fig. 6.

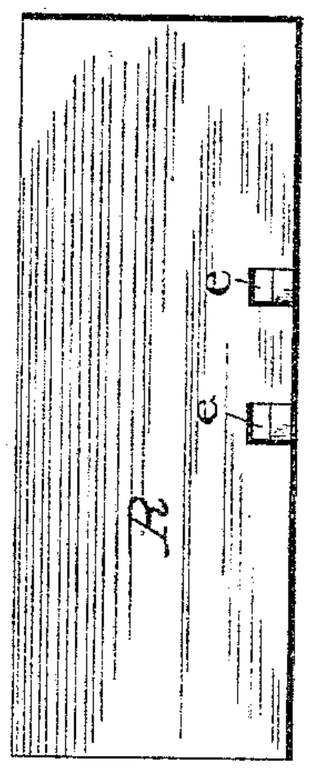

Fig. 5.

WITNESSES
Chas. R. Burr
Fred F. Church

INVENTOR
Joseph G. Groff
by Church & Church
his Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

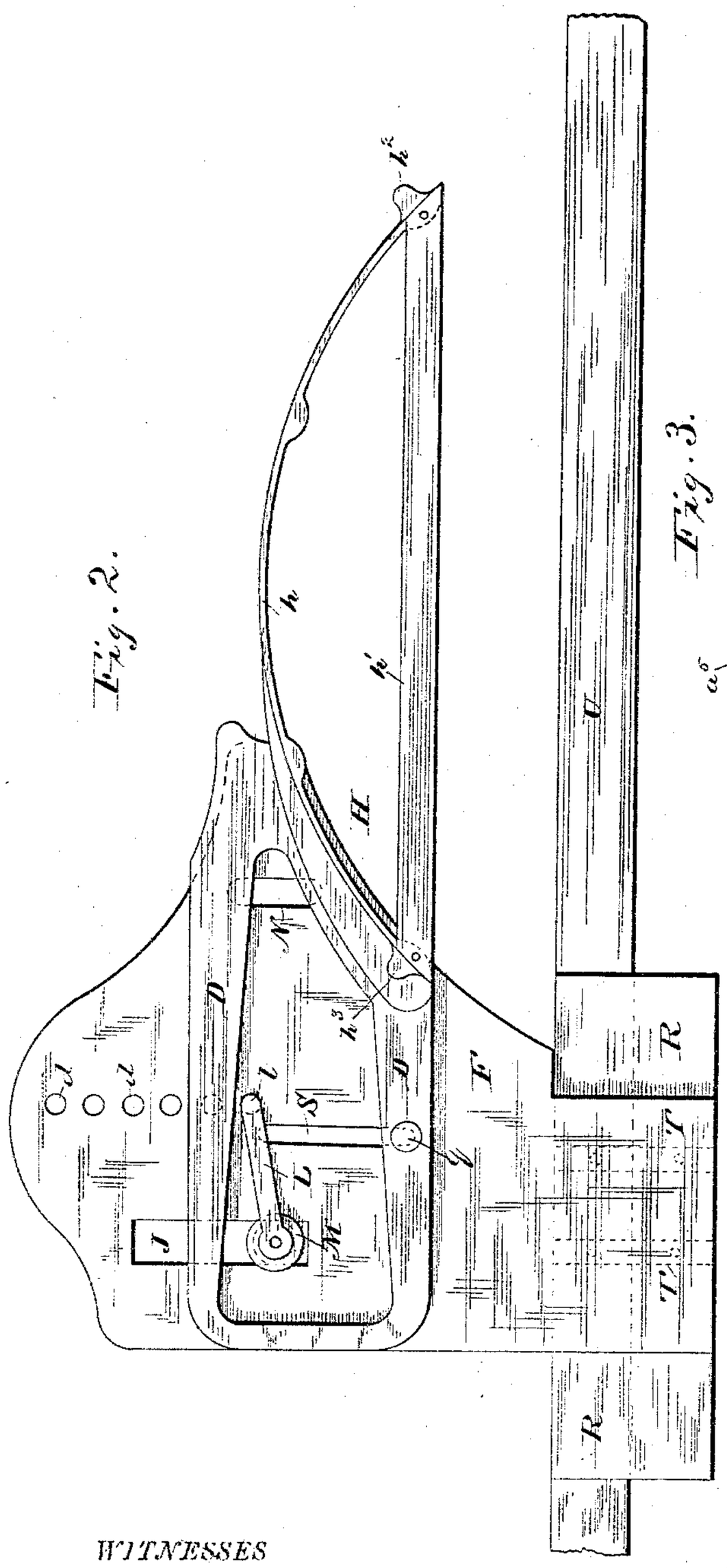


Fig. 3.

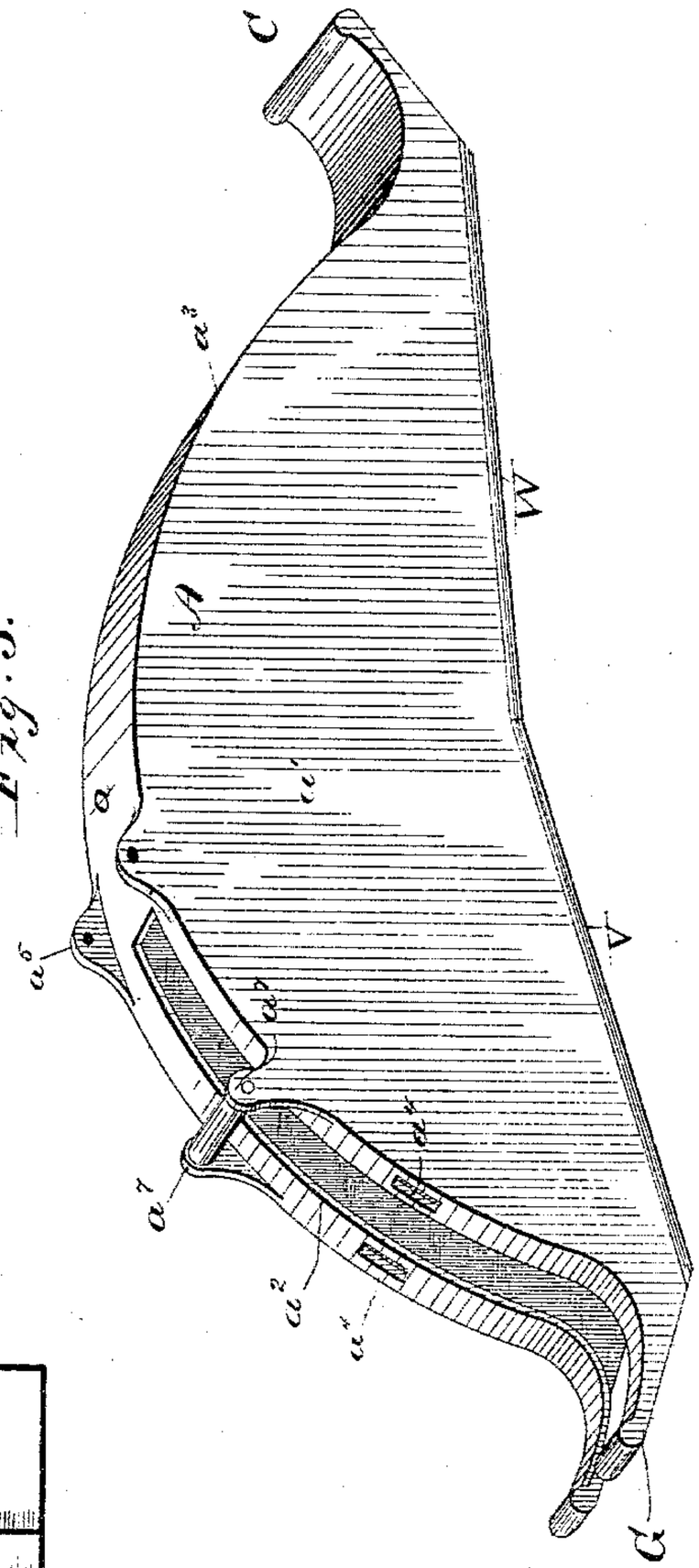
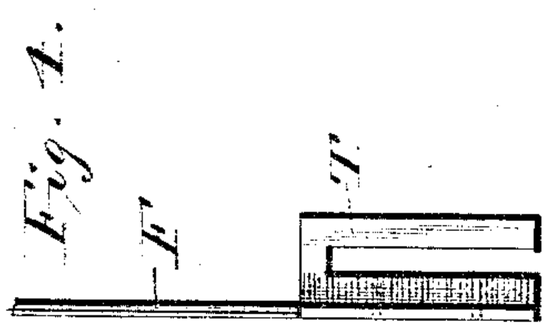


Fig. 4.



WITNESSES

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INVENTOR

Joseph G. Groff

by Church & Church

his Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH G. GROFF, OF CONNERSVILLE, IND., ASSIGNOR TO THE GROFF & BENNETT SAW GUARD MANUFACTURING COMPANY, OF CINCINNATI, OHIO.

SAW-GUARD.

SPECIFICATION forming part of Letters Patent No. 323,318, dated July 28, 1885.

Application filed February 25, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. GROFF, of Connersville, Fayette county, Indiana, have invented certain new and useful Improvements in Guards for Circular Saws; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to that class of saw-guards which are automatic in their operation—rising upon the approach of the material to be sawed, resting upon the material while being sawed, and dropping back to the saw-table after the material has passed from under it and away from the saw, the projecting portion of the saw-blade being all the time kept well covered, and the operatives being thereby protected against liability to accidents.

I will first describe my improvements, and will then particularly point them out in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 represents a side elevation of a saw-guard constructed in accordance with my invention. Fig. 2 is a similar view of the same with the hood proper removed. Fig. 3 is a perspective view of the hood proper. Fig. 4 is an edge view of the lower end of the supporting-blade. Fig. 5 is a plan view of the bed-plate, and Fig. 6 a detail view of the spring-locking pin.

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

The letter U indicates the saw-table, to which is secured the bed-plate R. This bed-plate is provided with openings *e e*, in which are adapted to fit vertical ribs T T, secured to and projecting laterally from the side of the blade F of the guard, as shown in Figs. 1 and 4. Inasmuch as it is necessary that this blade F should be in line with the saw to be protected, one of its functions being to enter the kerf made by the saw and assist in keeping the sawed parts of the material separated, the particular form of connection is important, as it enables the blade to be held off slightly from the bed-plate, and thus gives a better opportunity to secure the proper alignment. It is also strong and simple, and enables the blade to be applied to and removed from the bed-plate with facility.

The upper portion of the blade is embraced by arms D D, that are connected to and extend backwardly from a frame, H, consisting of a curved top portion, *h*, and side bars, *h' h'*, as shown in Figs. 1 and 2. The function of this frame is primarily to support the hood proper, A, the construction and operation of which will be presently described.

The upper portion of the blade F is provided with two vertical slots, J and S, and, preferably, with a third vertical slot, N, also. It is further provided with a series of openings, *d*, as shown in Fig. 1.

A pin or roller, *q*, supported in the lower portion of the arms D, works within the slot S and assists in guiding the arms and frame in their up and down movements.

In the slot J is arranged a flanged roller, M, to the axis of which a spring-arm, L, is connected, said arm having near its outer or free end a laterally-projecting stud, *l*, that is adapted to engage with one or the other of a series of openings, *d*, in the plate F, and thus, by forming a stop, limit the downward movement of the arms D.

The hood proper, A, before alluded to, has a curved top or back, *a*, and closed sides *a'*. At its rear side it is slotted or cut away, as shown at a^2, for the accommodation of the arms D, blade F, and the rear portion of the inner frame, H, while at both front and rear, at the points marked a^3 and a^4 a^4, respectively, it is slotted to accommodate lugs h^2 and h^3 h^3 that project upwardly from the front and rear portions of the inner frame, H. To a projection, a^5, near its top, is connected a link, a^6, that is also connected to the arms D, and a short distance behind said projection it is provided with other projections or lugs, a^7 a^7, which support a wheel or roller that plays in the slot N of the plate F. At its front it is formed with an upwardly-projecting inclined arm, C, and at its rear with a similar inclined arm, G, and the bottom edges, V W, of its sides form an obtuse angle, as shown. When this hood proper is in place it covers the frame H, and normally rests with its covered top or back upon the curved top surface of the frame H,

and with its bottom upon or near the surface of the saw-table.

Upon the approach of the material to be sawed the operation of the guard is as follows: As the material strikes the front inclined arm, C, of the hood, the forward end of the hood is tilted upward, the frame H, link a^6, and roller and slot N O operating to guide it and control its motion. As it rises it is freed from the front projection or lug, h^2, of the frame H; but the rear projections, h^3, of said frame operate to assist in preventing any backward motion. In its advance the material, with the forward end of the hood resting upon it, next strikes the inclined under surface, V, which causes the rear end of the hood to rise, being controlled in this movement also by the frame H, roller and slot N O, and link a^6. As the rear end of the material passes from under the hood the previous movements of the latter are just reversed—that is to say, its forward end first drops back upon the table and then its rear end—the projections or lugs h^2 and h^3 in such movements acting, in the order named, as stops to prevent the continued longitudinal movement of the hood in either direction.

When the material operated upon is narrow, the hood proper only rises and falls, the frame H and arms D remaining undisturbed; but when the material is thick and the hood proper is required to rise higher than the range of its independent movement will permit, it will in rising carry with it the frame H and the arms D, the latter parts being guided in their movements by the vertical blade F, the roller q, and slot S.

The roller M, spring-arms L, and series of holes d in the plate F serve as means for regulating the normal height of the arms D and frame H. When it is desired to change the elevation, it only becomes necessary to spring out the arm L till the stud l becomes disengaged from the opening in the plate, and then move the arm up or down, as the case may be, and cause the stud to engage with one of the other openings.

It will be observed that by the use of this improved guard the saw to which it is applied is under no circumstances exposed; but, on the contrary, is at all times covered, thus completely protecting the operatives and guarding against accidents to their persons.

Having thus described my invention, what I claim as new is—

1. The combination, with the plate, the supporting-arms, and the frame connected thereto having the projections or lugs co-operating with the perforations in the hood, of the hood proper working over the frame having the inclines for raising and lowering it, substantially as described.

2. The combination, with the arms and the frame connected thereto having the projections or lugs at front and rear, of the hood proper working over said frame and having slots for accommodating said projections or lugs, substantially as described.

3. The combination, with the plate and the supporting-frame having the arms connecting it to the plate, of the hood proper working over the frame, and the link connecting it to the arms, substantially as described.

4. The combination, with the blade, the arms, and the supporting-frame, of the connecting-link and the hood proper carrying the roller which works in the slot in the blade, substantially as described.

5. The combination, with the vertical blade having the series of adjusting-openings and the slot J, of the hood-supporting arms and frame, the roller, and the spring-arm connected to the roller and adapted to co-operate with the adjusting-openings, whereby the normal height of the arms may be regulated, substantially as described.

6. The combination, with the vertical plate or blade, of the arms carrying the hood-supporting frame, and hood proper working over said frame, substantially as described.

7. The combination, with the vertical plate or blade having the slots, the arms carrying the supporting-frame and having the roller q, the hood proper working over the frame and having the roller working in a slot in the blade, and the link connecting the arms and the hood proper, substantially as described.

JOSEPH G. GROFF.

Witnesses:
WILLIAM C. FORREY,
W. H. BECK.