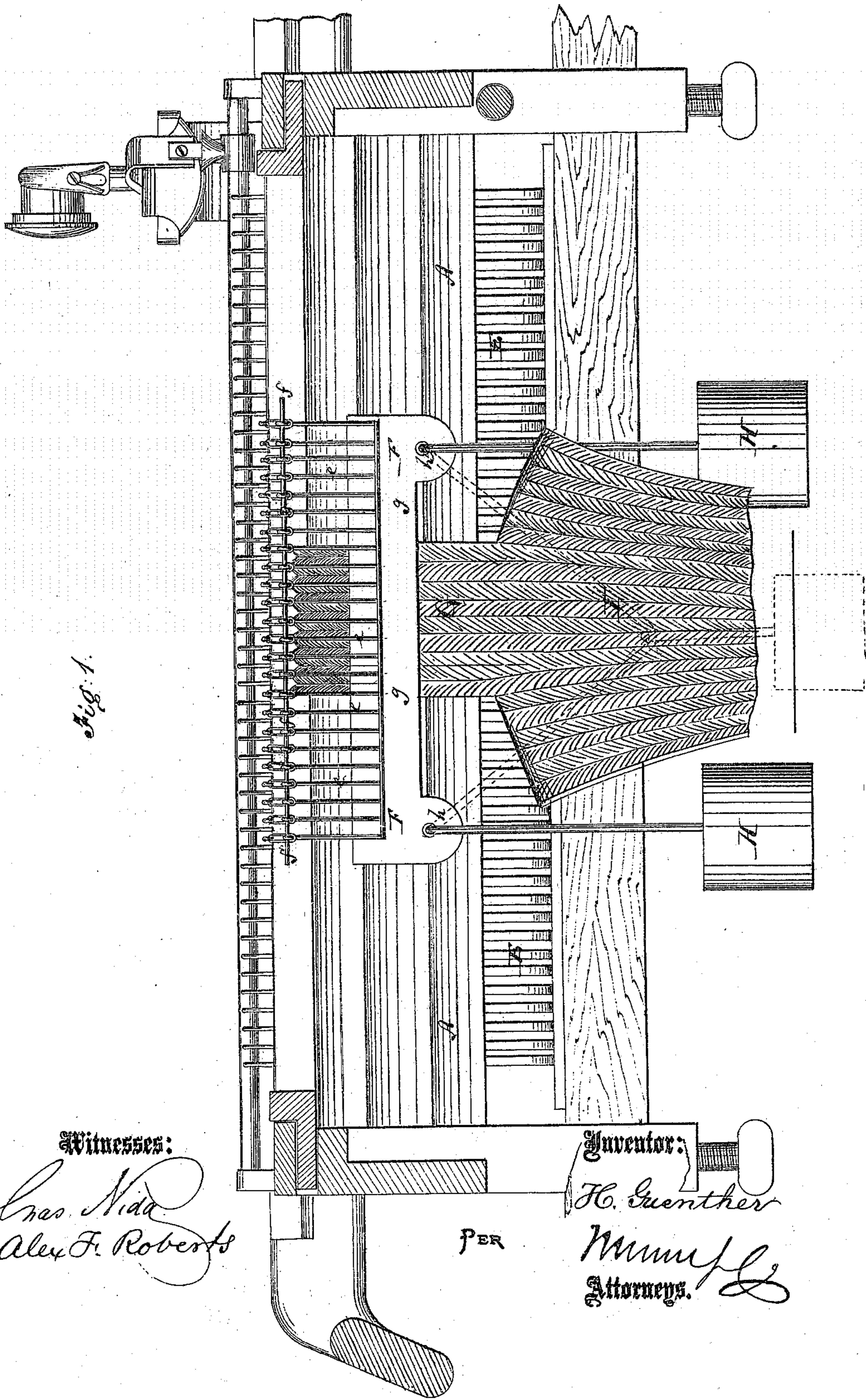


**2 Sheets--Sheet 1.**

HUGO GUENTHER.  
No. 124,950.

**Improvement in Knitting Machines.**  
Patented March 26, 1872



**Witnesses:**

Chas. Nida  
Alex F. Roberts

**Inventor:**

H. Guenther

*Wm.*  
Attorneys.

PER



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Improvement in Knitting Machines

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Fig. 2.

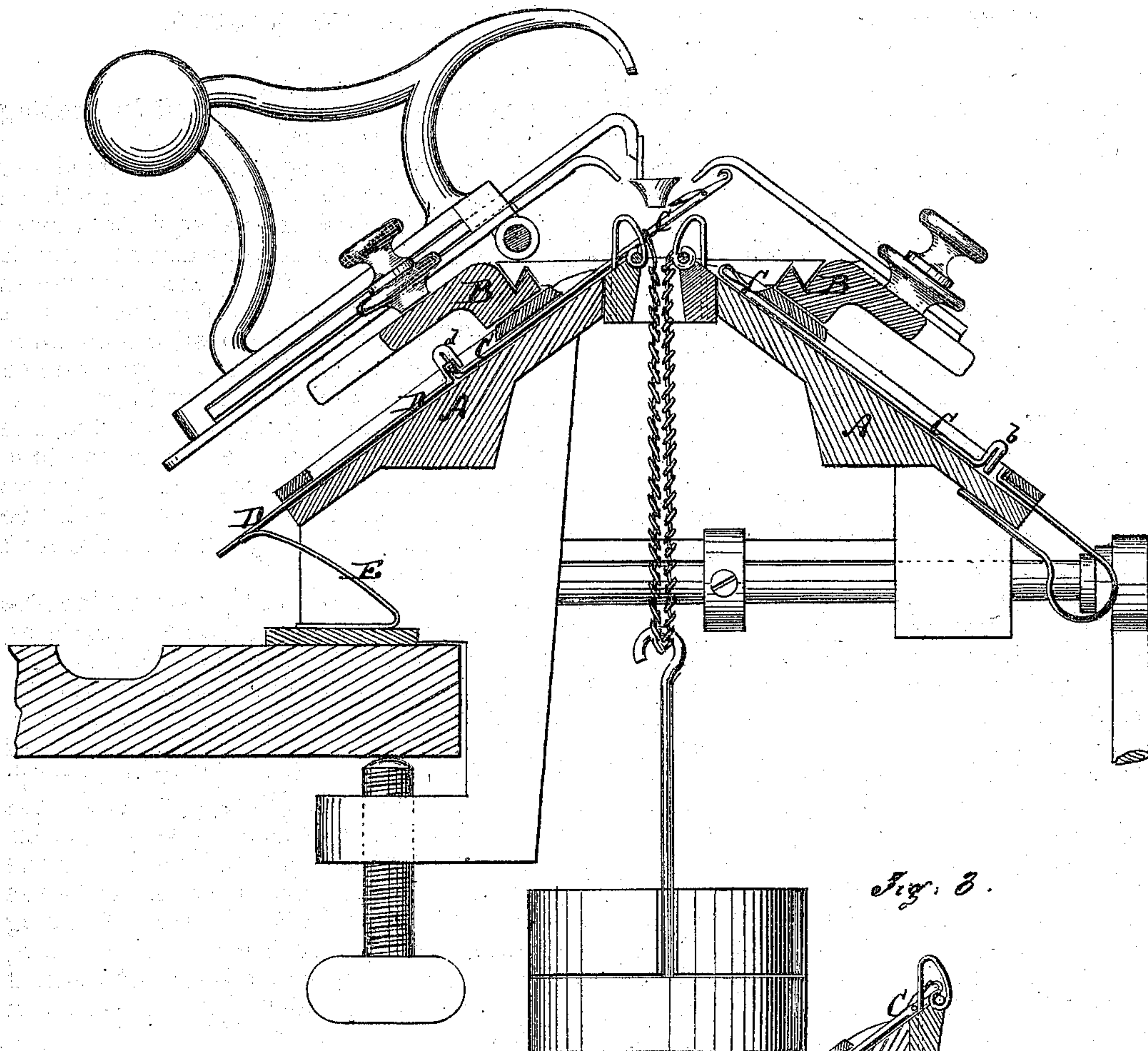
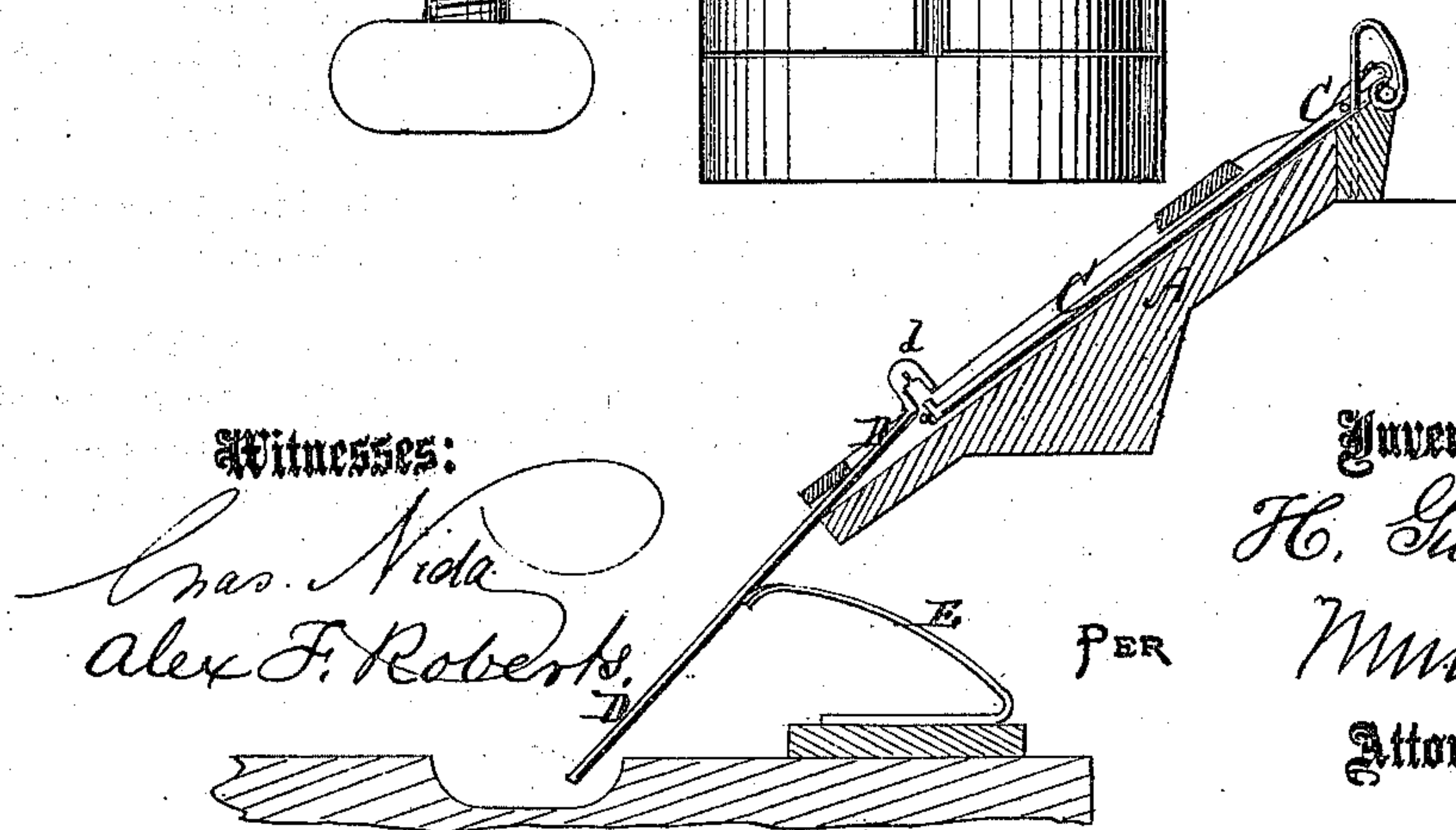


Fig. 3.



Witnesses:

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## UNITED STATES PATENT OFFICE.

HUGO GUENTHER, OF NEW YORK, N. Y.

## IMPROVEMENT IN KNITTING-MACHINES.

Specification forming part of Letters Patent No. 124,950, dated March 26, 1872.

Specification describing a new and Improved Knitting-Machine, invented by HUGO GUENTHER, of the city, county, and State of New York.

Figure 1 represents a longitudinal vertical section of a knitting-machine, showing the improved comb attachment. Fig. 2 is a vertical transverse section of the same, showing also the improved needle-holder. Fig. 3 is a detail side view of the latter.

Similar letters of reference indicate corresponding parts.

The invention relates to the Lamb or other knitting-machines; and consists in providing the needles with detachable shanks, which, as well as the needles, are constructed as hereinafter fully described, and pointed out in claim.

A, in the drawing, represents the stationary supporting frame of the machine. B is the reciprocating frame, carrying the cams, whereby the needles are moved. The inclined surfaces of the frame A are grooved transversely for the reception of the needles C. These needles are made at their outer ends with turned-up ears, as at *a* in Figs. 2 and 3, while heretofore they had doubled projecting ears *b*, as in the right-hand side of Fig. 2. The ears *b* fitted the grooves of the cams, as heretofore mentioned. The ears *a* are not long enough to project from the grooves of the bed A, as indicated, and the needles alone, when having such ears *a* cannot be moved by said cams. D D are the detachable shanks, which I have provided for the needles without the ears *b*. Every shank D is a rod or wire, with its outer or upper end doubled into a projecting hook, *d*, which, when hooked over the projecting end *a* of the needle, will constitute the lug or ear that is set in motion by the cams. The shank D fits at its outer part through a slot of the frame A, as shown in Fig. 2. E E are springs applied under the outer parts of the shanks D, serving to hold the hooks *d* over

the ears *a*, and to produce friction for keeping the needles and shanks in position.

When a needle is connected with its shank D, in the manner shown in Fig. 2, it will be moved back and forth in the requisite manner for knitting whenever reciprocating motion is imparted to the frame B. When, however, a needle is to be thrown out of action without being disengaged from the mesh or loop hanging on it, the shank D is by hand swung down so as to raise the hook *d* clear off the ear *a*, as is clearly shown in Fig. 3, and the shank is then drawn back out of the way of the cam. This leaves the needle where it was, but throws it entirely out of action. It can readily be again thrown into action by replacing the hook *d* over the ear *a*.

F, in Fig. 1, is the comb for stretching the commencement of the foot part of a stocking after a narrow-heel connection, G, has been knit. The upper part of this comb is substantially of ordinary construction, consisting of upright wires *e e*, with closed loops at their upper ends, and of a wire, *f*, drawn through said loops. The lower plate *g*, to which the wires *e e* are attached, has, however, perforated ears *h h* at the ends, as shown, for the reception of weights H that will straddle the leg part I of the stocking. Instead of having a separate weight at each end of the comb F, the two ears *h* may receive the ends of a forked wire or frame, from which but one weight is suspended.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The shank D, provided with hook *d*, in combination with needle C, having the short up-turned ear *a*, as and for the purpose described.

HUGO GUENTHER.

Witnesses:

GEO. W. MABEE,  
T. B. MOSHER.