

No. 629,195.

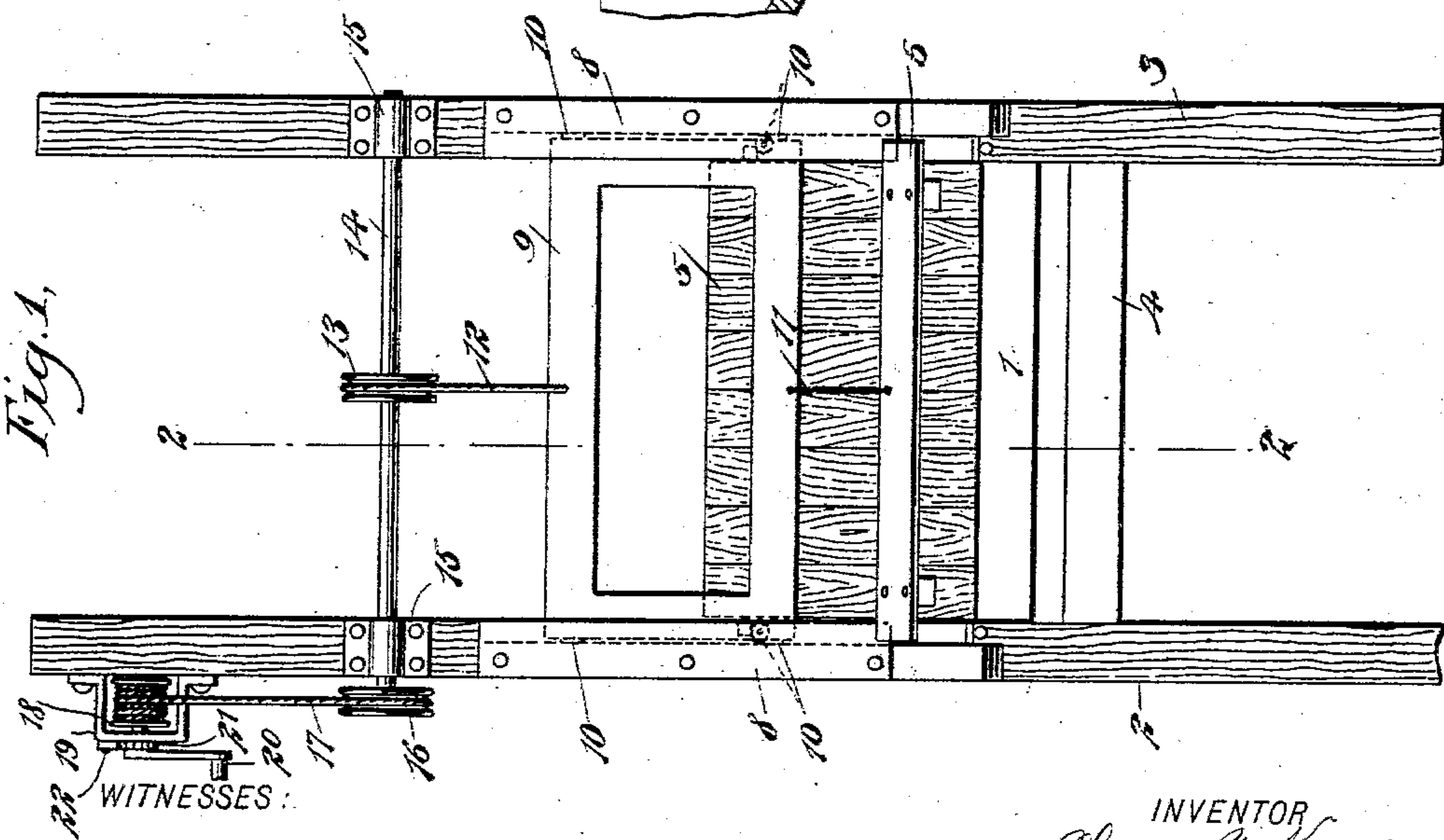
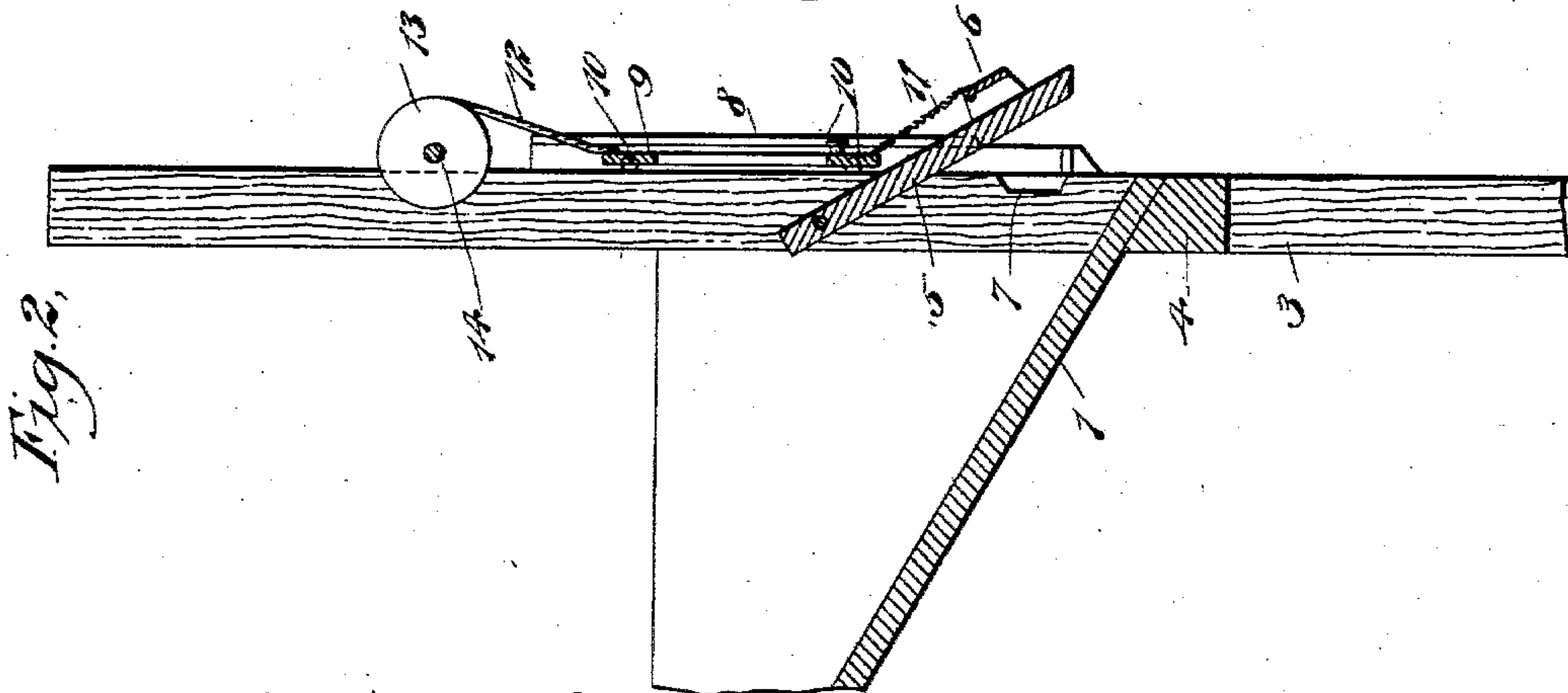
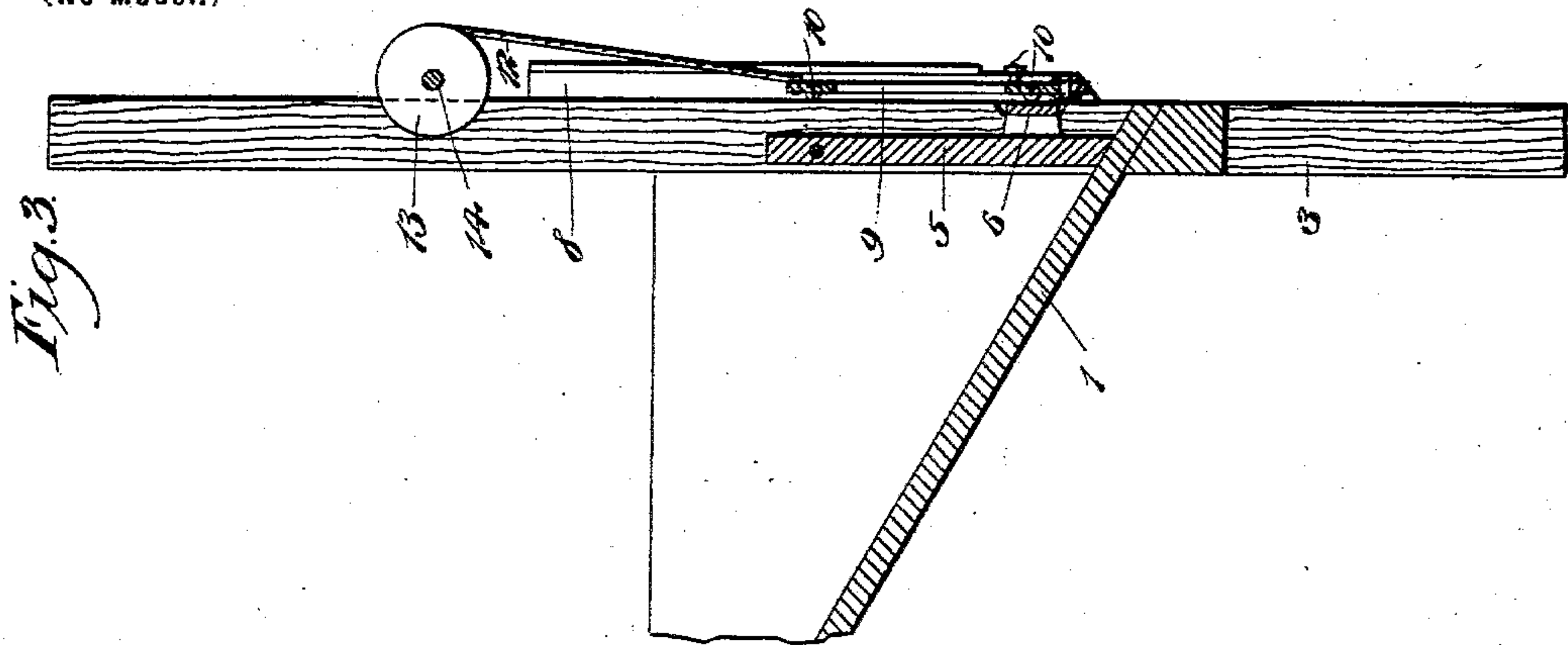
Patented July 18, 1899.

H. F. KUSS.

SPOUT GATE AND MECHANISM FOR OPERATING SAME.

(Application filed Dec. 31, 1898.)

(No Model.)



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HENRY F. KUSS, OF ESCANABA, MICHIGAN, ASSIGNOR TO HIMSELF AND
QUINTIN R. HESSEL, OF SAME PLACE.

SPOUT-GATE AND MECHANISM FOR OPERATING SAME.

SPECIFICATION forming part of Letters Patent No. 629,195, dated July 18, 1899.

Application filed December 31, 1898. Serial No. 700,839. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. KUSS, of Escanaba, in the county of Delta and State of Michigan, have invented a new and Improved Spout-Gate and Mechanism for Operating the Same, of which the following is a full, clear, and exact description.

This invention relates to improvements in gates for inclined spouts and mechanism for operating the same.

The invention is designed more particularly for use in connection with inclined spouts for discharging material from a dock into a vessel or from a platform into a car; and the object is to provide a simple gate and means connected with it whereby the work of opening the gate may be easily performed by one man standing on a dock or platform.

I will describe a spout-gate and mechanism for operating the same embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of a gate and operating mechanism therefor embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1, showing the gate as open or partly open; and Fig. 3 is a similar section showing the gate as closed and locked.

Referring to the drawings, 1 designates an inclined spout leading from a dock or platform and supported at its outlet end by uprights 2 3 and a cross-bar 4. Mounted to swing vertically between the uprights 2 and 3 and to engage with its lower edge against the bottom of the spout 1 is a gate 5, on the front of which near the lower edge is a cross-bar 6, the ends of said cross-bar being designed to be seated when the gate is closed in recesses 7, formed in the uprights. Secured to the outer side of each upright is a guide 8, and in these guides is mounted to slide a locking-frame 9, which may be made of iron or any other suitable material. To provide for an easy movement of the frame 9 in the guides, I attach rollers 10 to the frame, which rollers bear against the outer side por-

tions of the guides and also against the uprights.

From the lower portion of the locking-frame 9 a chain or similar connection 11 extends to the cross-bar 6, and from the upper portion of the frame a cable 12 extends to and engages with a pulley 13 on a shaft 14, having bearings in boxes 15, attached to the uprights 2 and 3. From a pulley 16 on the outer end of the shaft 14 a cable 17 extends to a drum 18, having its shaft bearing in the upright 2 and in a yoke 19, secured to said upright. On the outer end of the drum-shaft is a crank 20, and also on this shaft is a ratchet-wheel 21, engaged by a dog 22, pivoted to the yoke 19.

When the gate 5 is closed, it will be securely locked against any pressure that may be brought to bear upon its inner side by means of the locking-frame 9 while in its lowermost position and so that the lower rollers 10 will engage with the cross-bar 6, as plainly shown in Fig. 3. When it is desired to open the gate to discharge material, the drum is to be rotated by means of the crank 20, and this obviously will rotate the shaft 14 and raise the frame 9, and as the frame 9 moves upward the gate will be moved to its open position by means of the connection 11 between said gate and the frame. The gate may be held in its open position during the discharge of material by means of the dog-and-ratchet mechanism before described. Upon releasing the dog from the ratchet the weight of the frame 9 will cause it to move downward, and the gate will also close by gravity and become locked, as before described.

This invention may be used in connection with the spout-hoisting apparatus shown in my Patent No. 609,683, of August 23, 1898; but it is not deemed necessary to show such apparatus herein.

While I have described the mechanism in connection with an inclined spout, it is obvious that it may be used in a water sluice or spout.

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

1. The combination with a spout, of a gate

mounted to swing vertically between supports at the discharge end of said spout, guides on said supports, a locking-frame mounted to slide in said guides, a flexible connection between said frame and the gate, and means for elevating said frame, substantially as specified.

2. The combination with a spout and up-
rights at the forward end thereof, of a gate
mounted to swing vertically between said up-
rights and adapted to engage its lower edge
against the bottom of the spout, guides on said
uprights, a frame mounted to slide in said
guides, a flexible connection between said
frame and the lower portion of the gate, a
shaft supported by the uprights, a connec-
tion between said shaft and frame, a drum
supported by one of the uprights, and a cable
or the like connection between said drum and
a pulley on said shaft, substantially as speci-
fied.

3. The combination with a spout and up-
rights supporting the discharge end thereof,
of a gate mounted to swing between said up-

rights, a cross-bar on the outer side of said
gate near its lower edge, said cross-bar hav-
ing its ends projected to engage in recesses
formed in the uprights, guides on said up-
rights, a frame mounted to slide in said guides
and adapted to engage with the cross-bar, a
flexible connection between the said frame
and the cross-bar, and means for elevating
said frame and gate, substantially as speci-
fied.

4. The combination with a spout, of a gate
mounted to swing at the discharge end of the
spout, a frame mounted to slide vertically at
the discharge end of the spout, a cross-bar on
the outer side of the gate adapted to be en-
gaged by the frame, to hold the gate closed,
a connection between the frame and gate and
means for elevating the frame, substantially
as specified.

HENRY F. KUSS.

Witnesses:

GEO. RAMSPECK,
EMIL GLASER.