

(No Model.)

5 Sheets—Sheet 1.

F. M. MOULTON & J. BOOTH.

ROAD SCRAPER.

No. 370,347.

Patented Sept. 20, 1887.

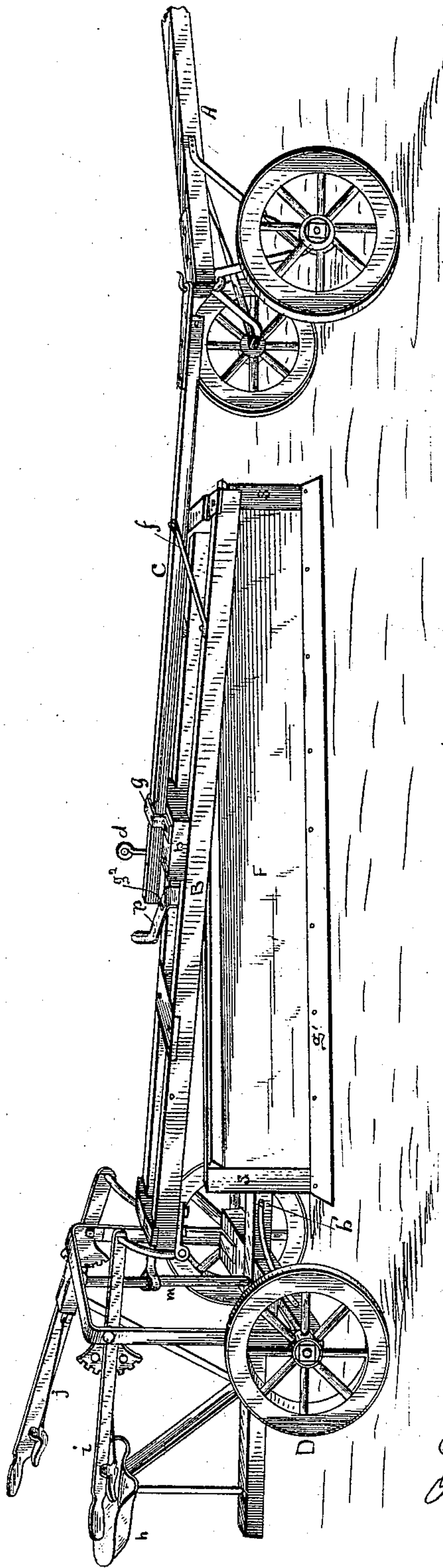


Fig. 1

Witnesses:
J. B. McGinn
W. E. Sharpe

Inventor:
F. M. Moulton
Jared Booth
By their atty
R. D. Smith

(No Model.)

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F. M. MOULTON & J. BOOTH.

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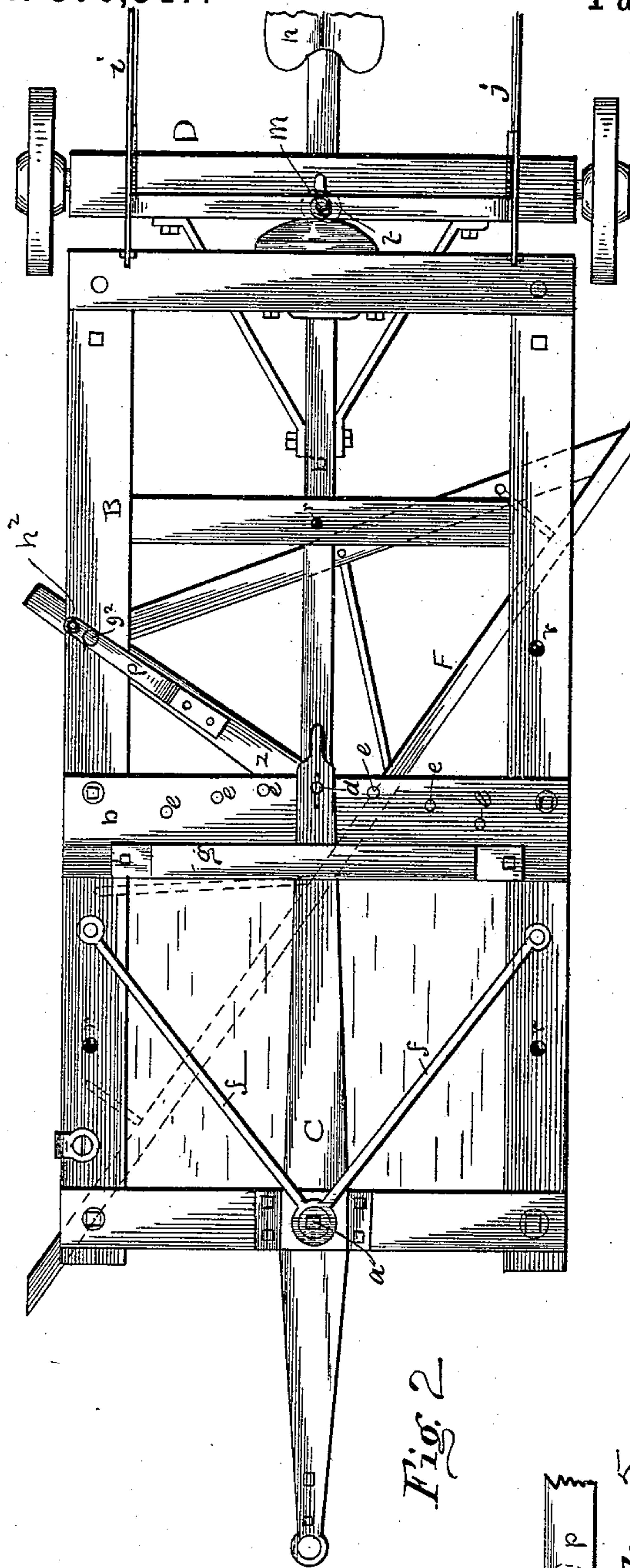


Fig. 2

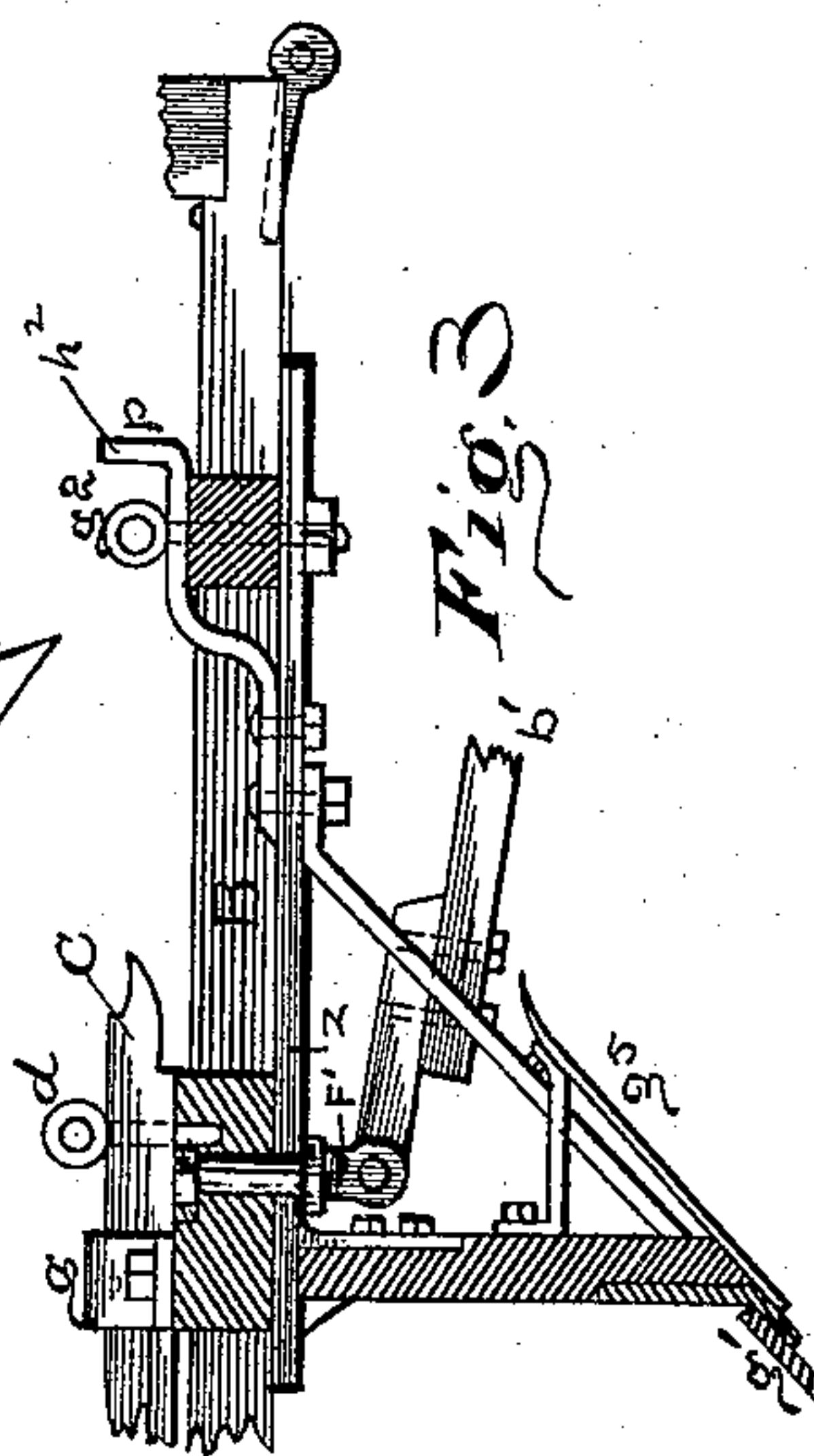


Fig. 3

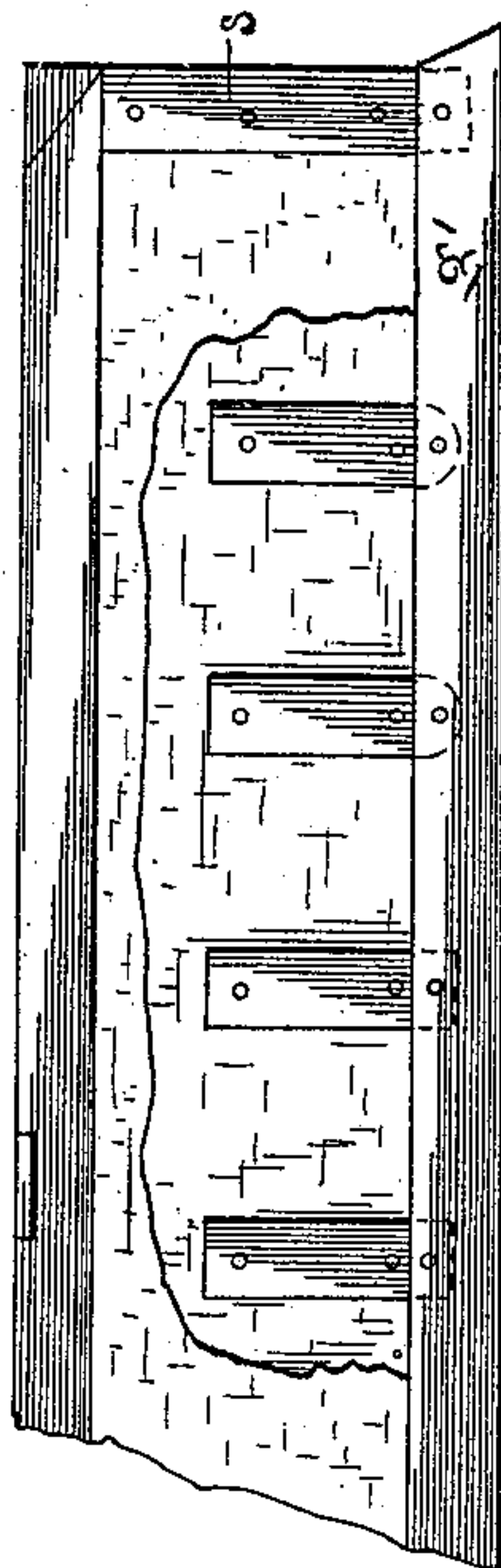


Fig. 4

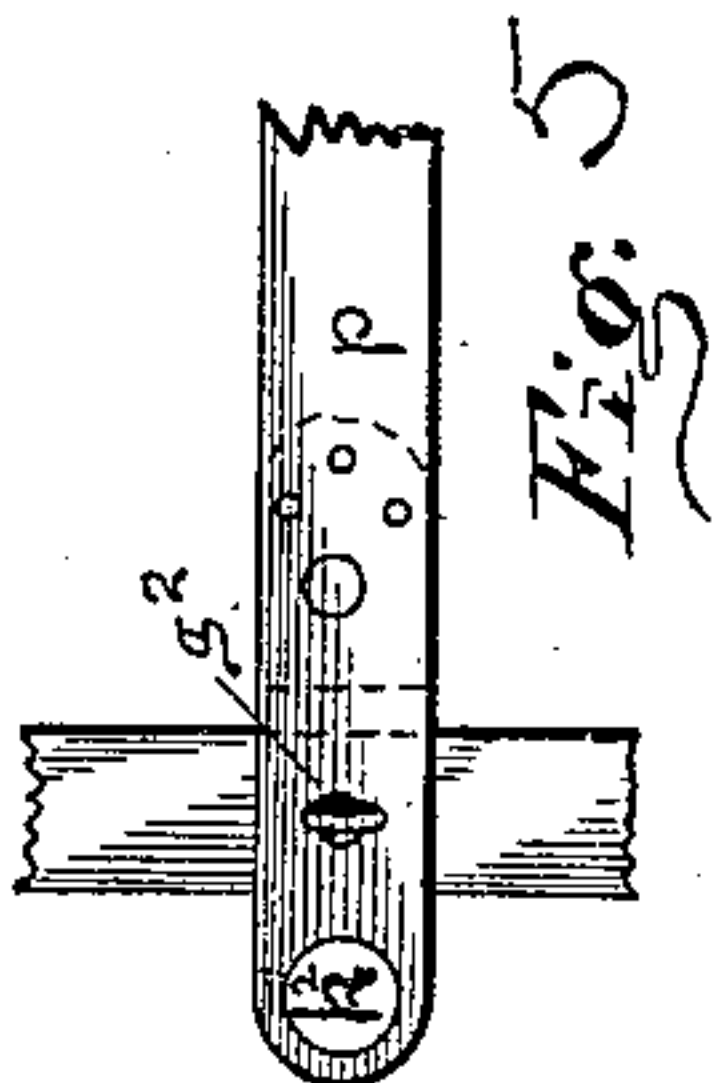


Fig. 5

Witnesses:
J. B. McGinnis.
W. E. Strawn

Inventor:
F. M. Moulton
Jared Booth
By *Arthur C. Smith*
R. D. Smith

(No Model.)

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Fig. 6

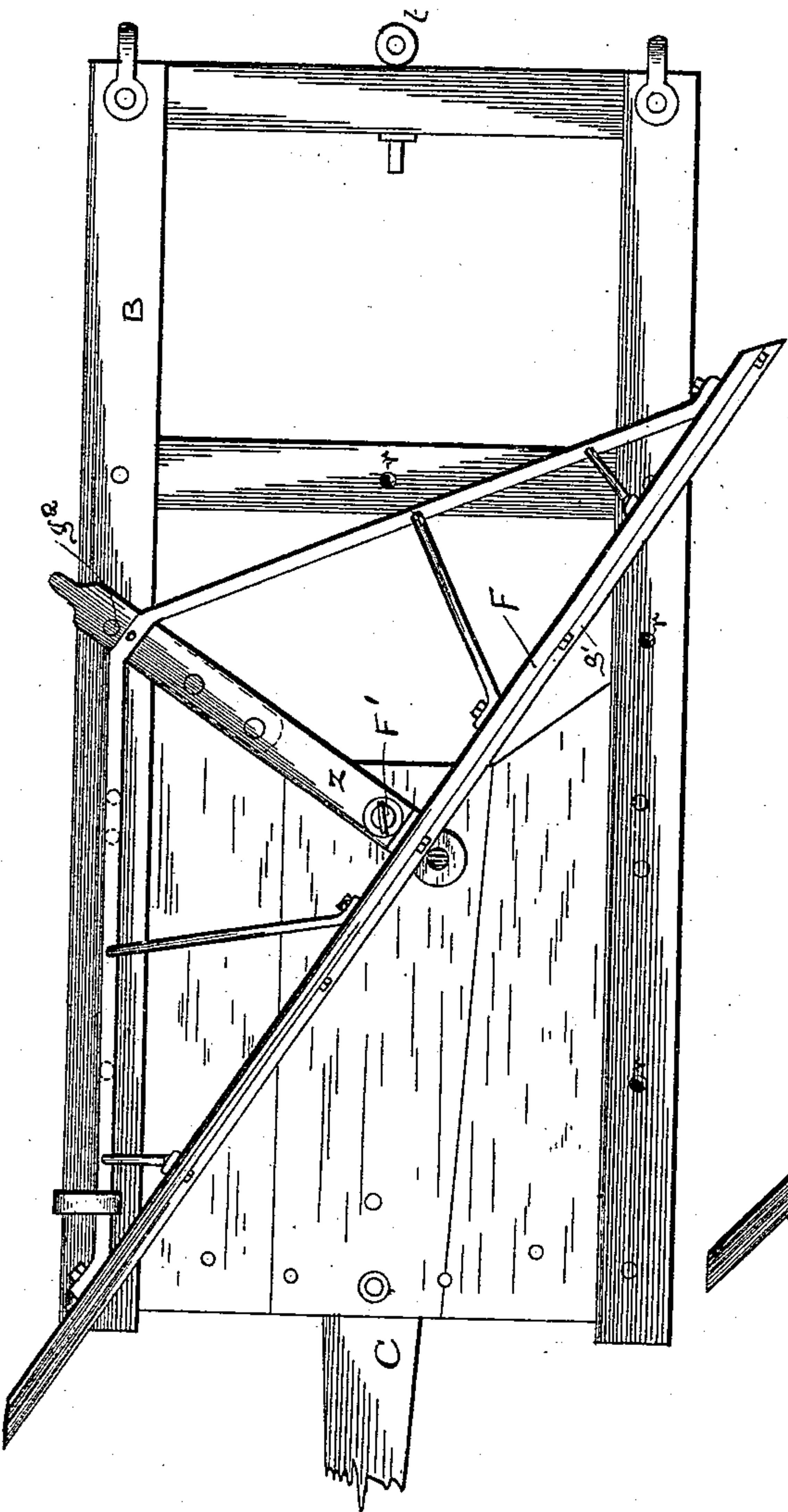
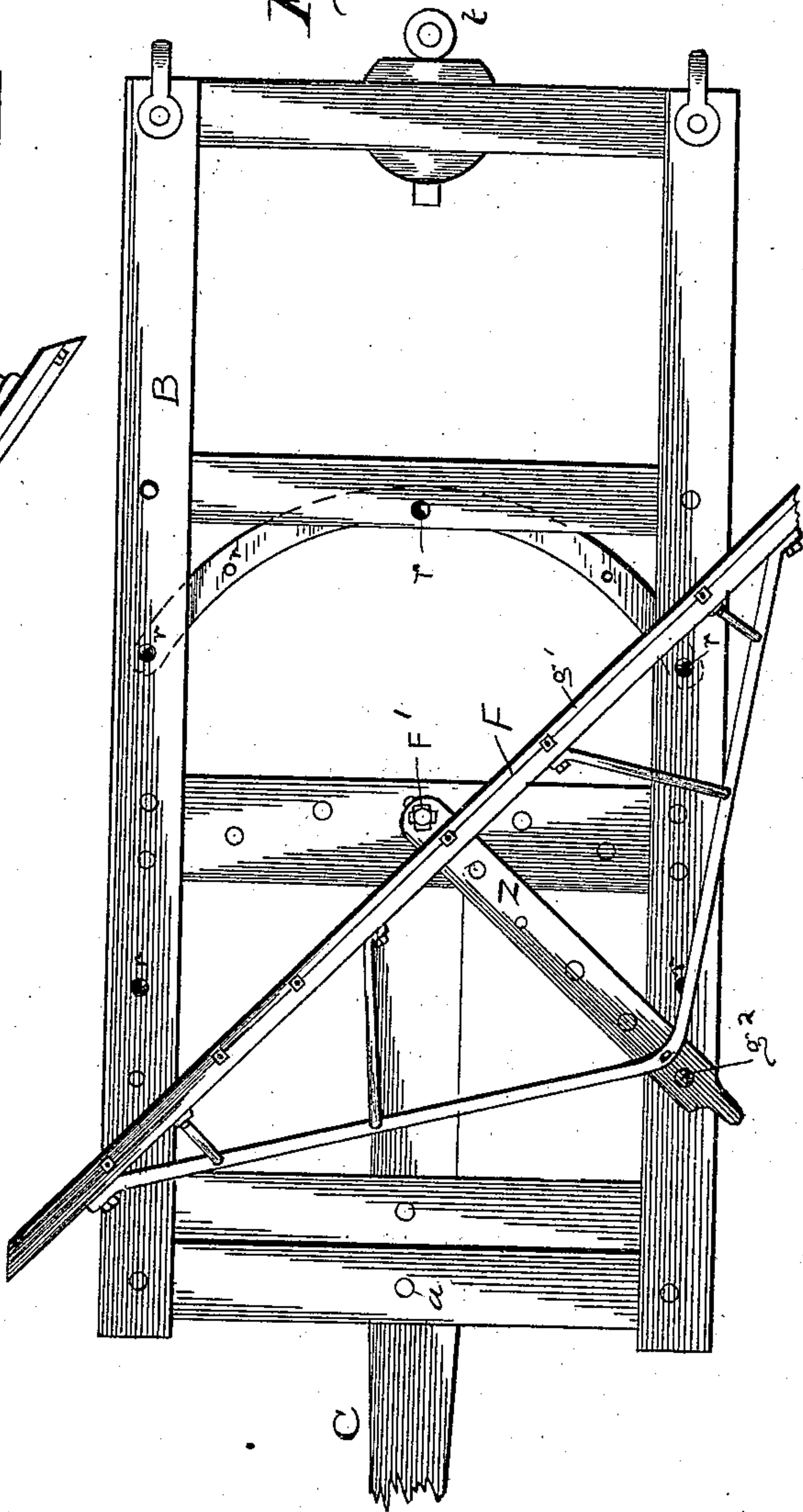


Fig. 7



Witnesses:

J. B. McGinnis
W. E. Skarup

Inventor:

F. M. Moulton
Jared Booth
By their atty
R. D. Smith

(No Model.)

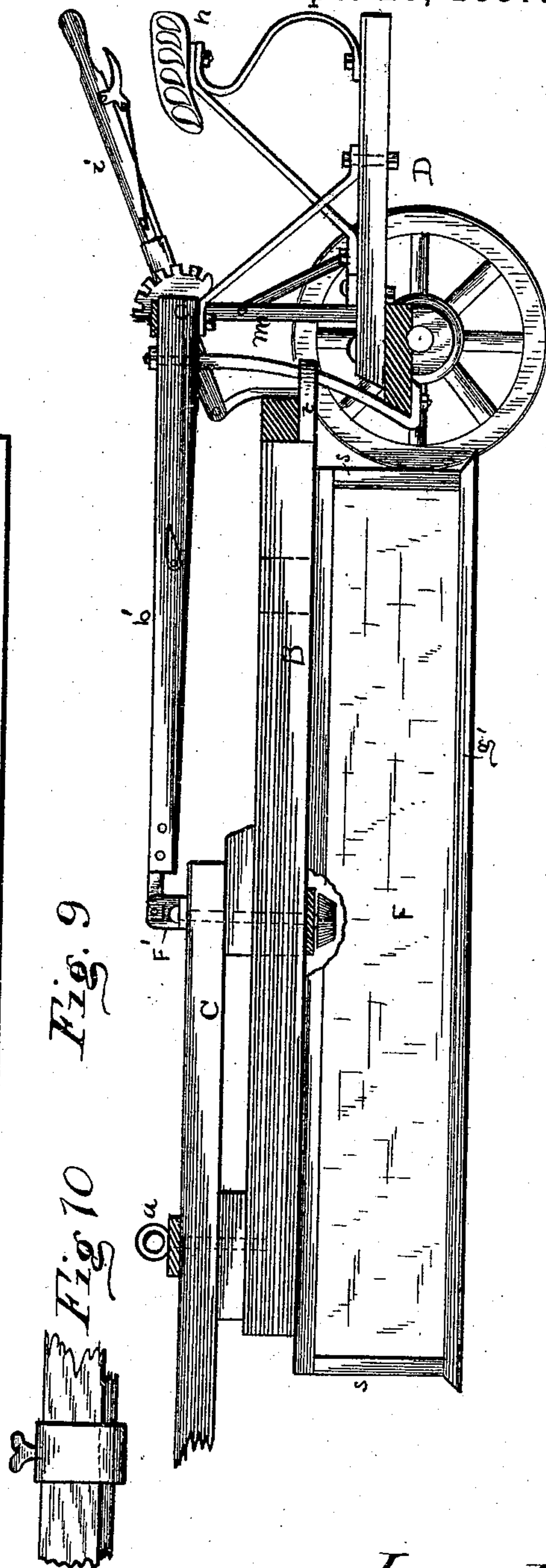
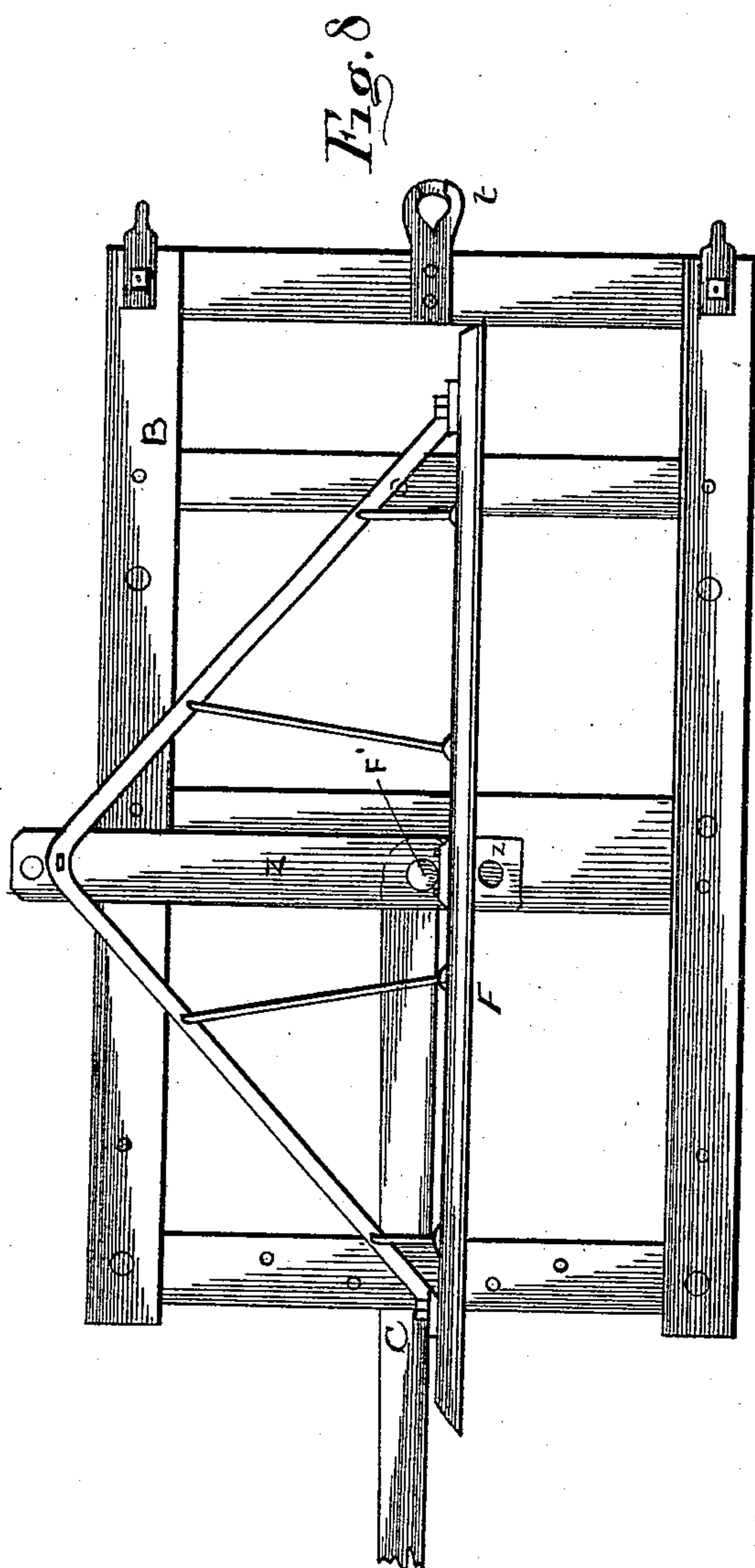
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F. M. MOULTON & J. BOOTH.

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No. 370,347.

Patented Sept. 20, 1887.



Witnesses
J. B. McGinn
W. C. Stearns

Inventor:
F. M. Moulton
Jared Booth
By their atty
R. D. Smith

(No Model.)

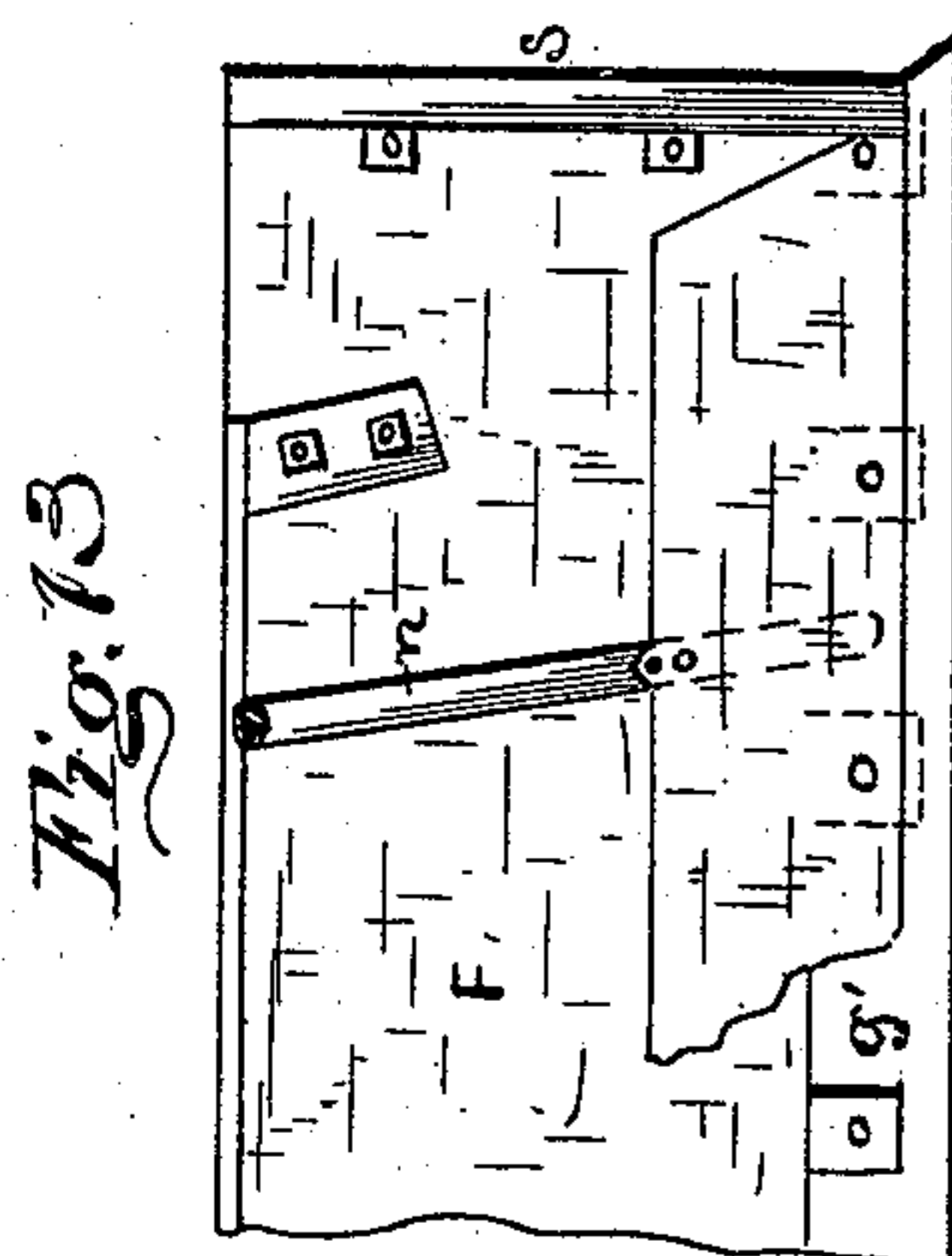
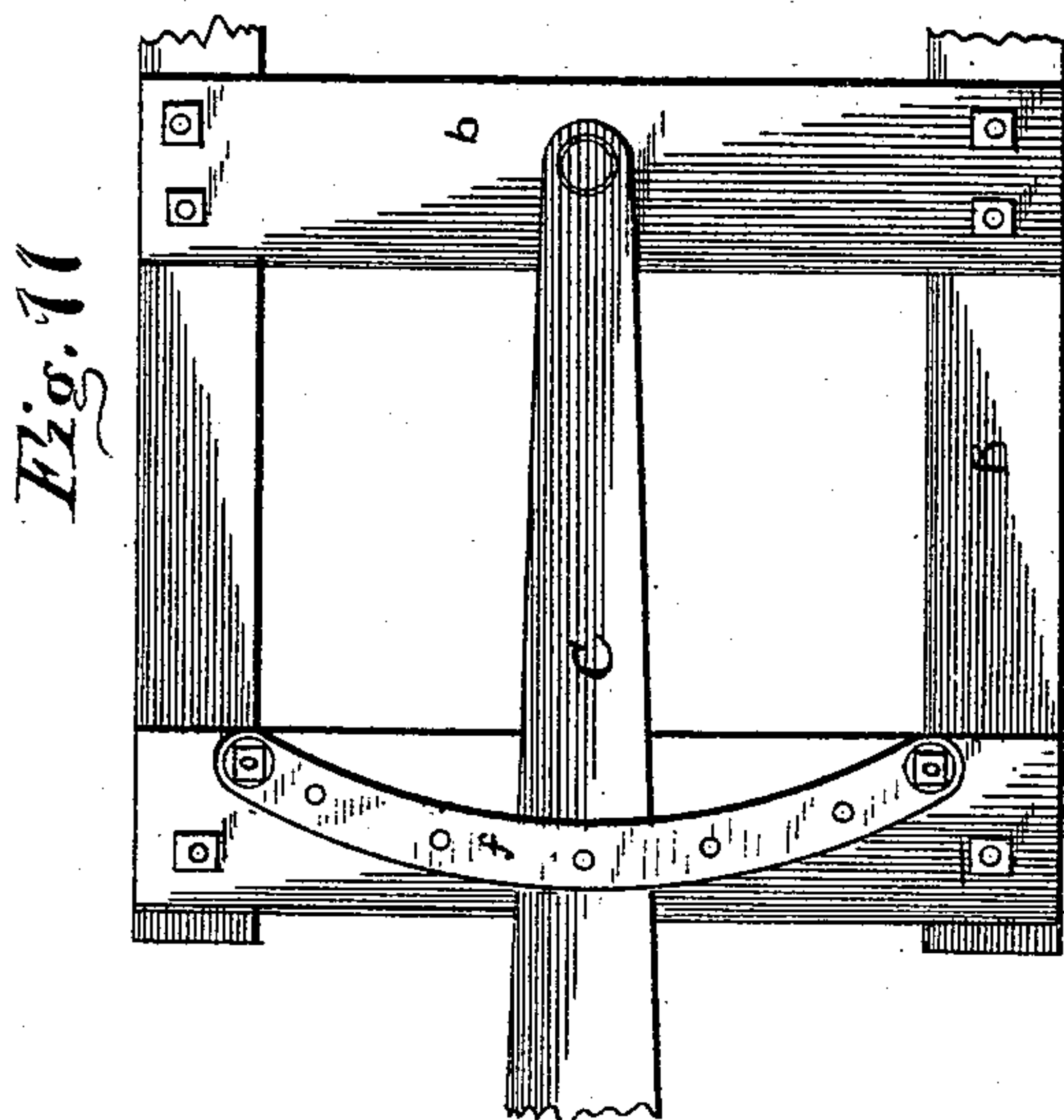
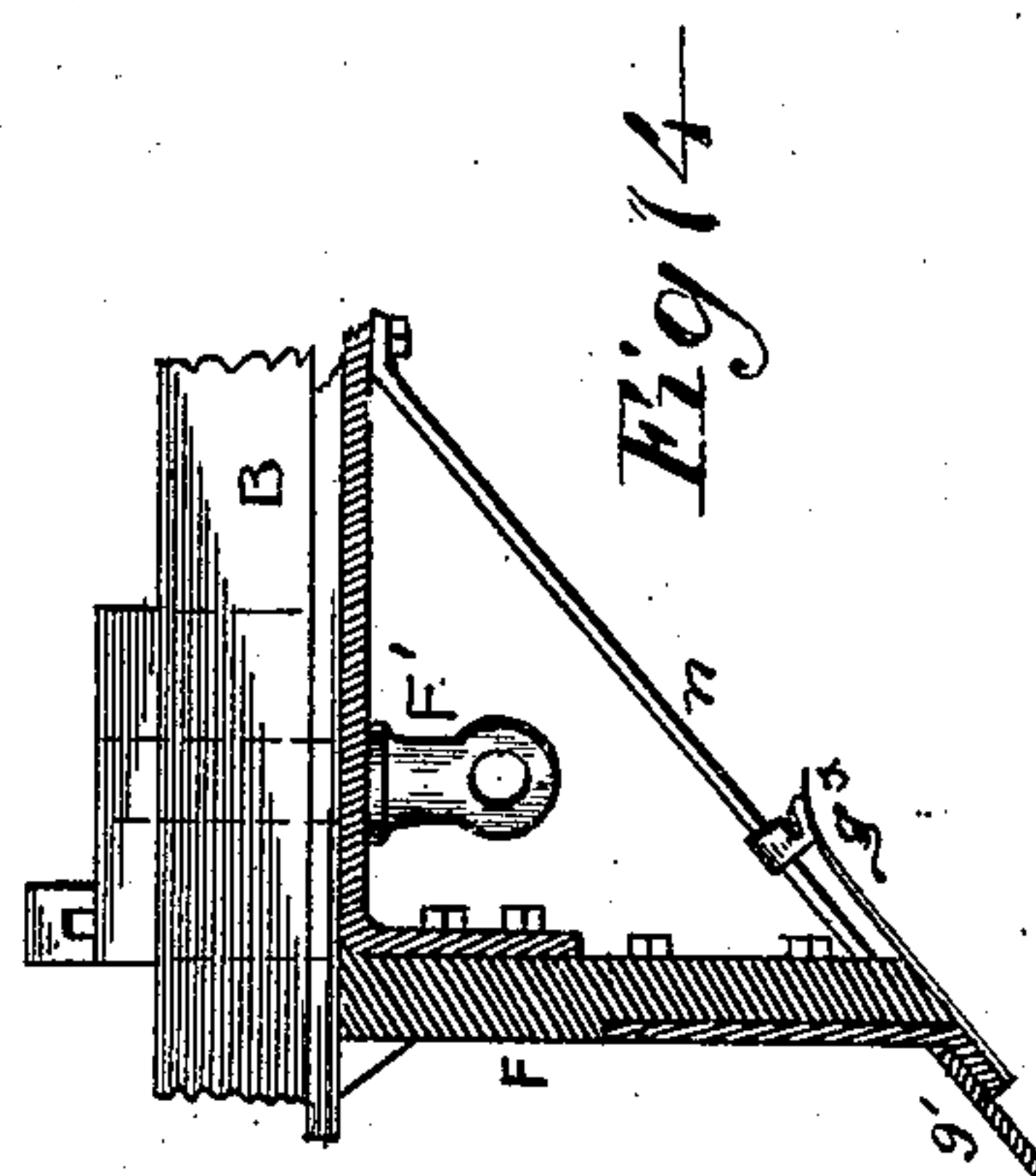
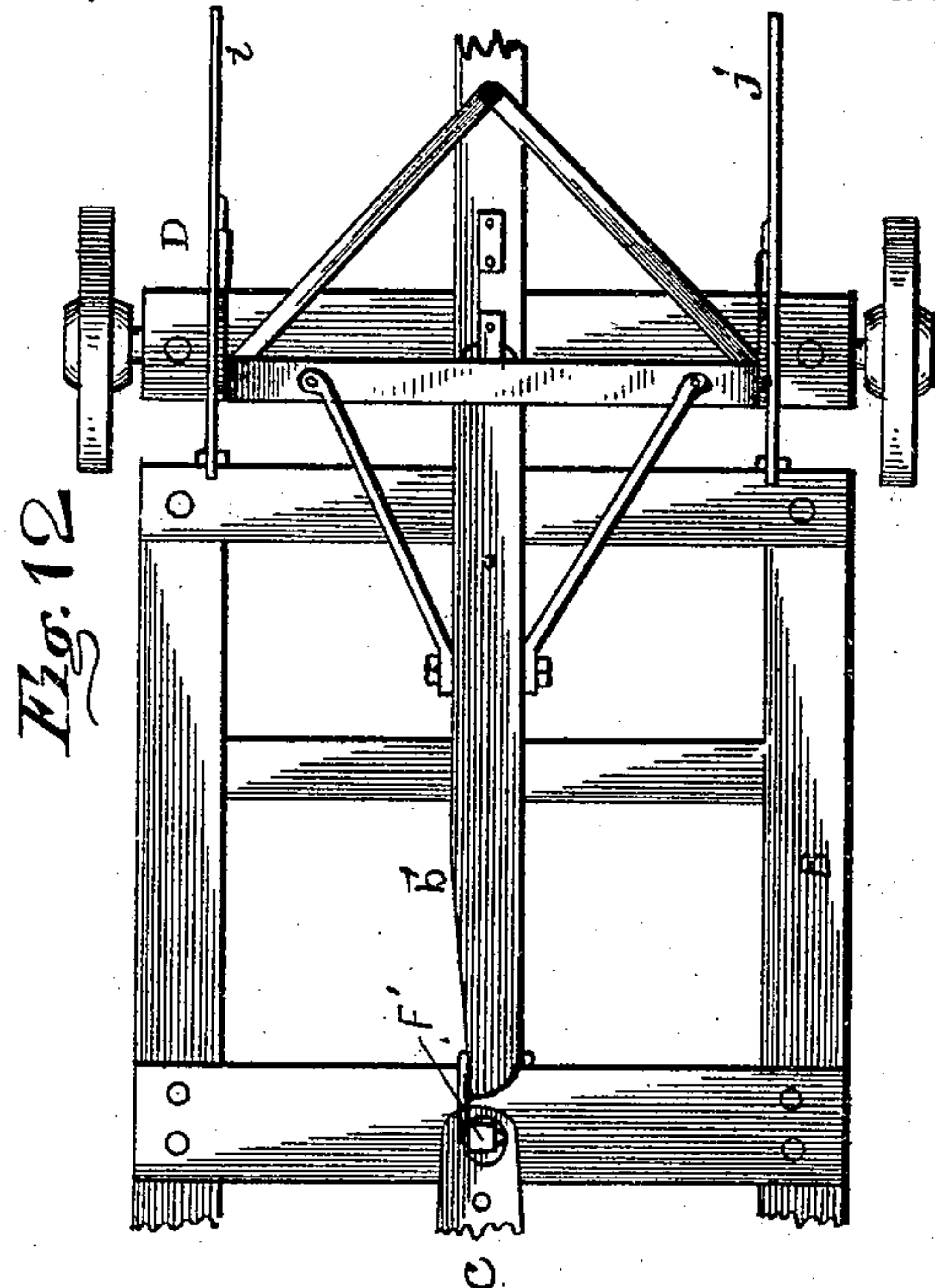
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F. M. MOULTON & J. BOOTH.

ROAD SCRAPER.

No. 370,347.

Patented Sept. 20, 1887.



Witnesses:
J. B. McGinnis
W. E. Strauss

Inventor:
F. M. Moulton
Jared Booth
By their atty.
R. D. Smith

UNITED STATES PATENT OFFICE.

FORDYCE M. MOULTON, OF VERGENNES, AND JARED BOOTH, OF FERRISBURG, VERMONT.

ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 370,347, dated September 20, 1887.

Application filed May 5, 1887. Serial No. 237,234. (No model.)

To all whom it may concern:

Be it known that we, FORDYCE M. MOULTON, of Vergennes, and JARED BOOTH, of Ferrisburg, county of Addison, and State of Vermont, have invented new and useful Improvements in Road-Scrapers; and we do hereby declare that the following is a full and accurate description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a perspective view of our machine. Fig. 2 is a plan view of our machine. Fig. 3 is a vertical longitudinal section of the scraper and part of the frame. Fig. 4 is a front elevation, partly in section, of a part of the mold-board. Fig. 5 is a plan of the central part of the mold-board and its pivot-holes. Figs. 6 and 7 are under plans showing the mold-board in opposite positions, respectively. Fig. 8 is an under plan showing the mold-board arranged longitudinally for transportation. Fig. 9 is a side elevation showing the mold-board suspended above the ground. Fig. 10 is a clip employed to clamp the end of the mold-board fast to the side frame of the machine. Figs. 11 and 12 are plan views showing modified structures. Fig. 13 is an elevation of a part of the mold-board, showing the rear side. Fig. 14 is a transverse section of the mold-board.

This machine is intended for use in building, grading, repairing, and smoothing highways and streets, digging and cleaning out surfaces, ditches, covering water or drain pipes, filling sink-holes in land, removing snow in winter-time, and other similar work; and the principal elements of it are, first, with the main frame, a leading truck attached to the said frame by a pivoted adjustable draft-bar, by which the position of the line of draft may be shifted laterally; second, the rear truck provided with a rear guide and a sustaining-frame, to which a seat and operating-levers are attached; third, the mold-board and smoother of novel construction pivoted on the main frame, rigidly bolted and barred to a truss-frame and cross-arm.

A is the leading truck, provided with a stout axle, two wheels, and a draft-tongue.

B is the main frame, rectangular in shape, and composed of suitable material. At any desired place on the main frame, but preferably its forward end, is pivoted the adjustable

draft-bar C. Its front end is provided with means for coupling it with the leading truck. A hole is made through the draft-bar C at a convenient distance from the pivot *a*, and a pin, *d*, is passed through one of a series of holes, *ee*, made in the main frame on a curved line around the axis of the pivot *a* as a center. By removing the pin *d* said draft-bar may be placed at any angle to the right or left of the median line of said main frame, and it therefore follows that the lateral adjustment of the draft-bar will move the median line of the main frame to the right or left of the median line of the truck, and thereby cause the operation of the machine to take place to the right or left hand from the line of draft, as desired.

The brace-rods *ff* and guide-bar *g* may be used to give additional strength to the pivot and hold the draft-bar in place, as desired. They extend from the upper end of the joint-bolt *a* back to the side girts of the main frame to support said bolt, and the long guide-bar *g* passes over the rear end of the draft-bar and is secured to the sides of the main frame. The rear end of the draft-bar may move freely from side to side under said guide, but is thereby prevented from rising up.

At its rear end the main frame is attached to a rear truck, D, which is provided with two bearing-wheels and a seat, *h*, for the driver, and a long upright guide-bolt, *m*, secured at its ends to the truck and guide-frame attached thereto. There are also two hand-levers, *ij*, fulcrumed on said truck and attached by links to the rear corners of the main frame. By means of these levers the driver can lift the main frame bodily, together with the mold-board, hold them in any position desired, or can raise either side, as he may desire.

The truck D is provided with a rigid tongue, *b'*, which extends forward to the middle portion of the main frame most convenient to the cross-bar *b*, where it is attached by a loose removable joint-bolt, and at its rear end it is also connected with said truck by means of an eye-bolt, *t*, set in the rear cross-bar of the main frame and free to move up and down on the long guide-bolt *m*. By these means the rear end of the main frame may be readily raised or lowered as to its support upon the two rear

truck-wheels and kept securely in its position relative to the truck.

The mold-board F is straight, and extends across the main frame below and is pivoted thereto at its middle, and may be adjusted at any desired angle as to the line of advance, so that it may be set to discharge the dirt to the right hand or left, as the case may be; or it may be set at right angles to the line of advance, so as to scrape and carry the dirt with it. It may also be reversed, so as to present its sloping edge backward, when it will ride on and crush down the lumps and clods and act as smoother instead of a scraper. Ordinarily the scraper will be adjusted at an angle of forty-five degrees to the line of advance, or thereabout, as shown in Fig. 2, and then, to relieve somewhat the strain upon the mold-board braces, the advance end of the mold-board is fastened to the side bar of the frame by a clip. (Shown in Fig. 2 and shown in elevation in Fig. 10.)

The mold-board is made of a strong plank, F, of less than the required width, with metal strips or bars laid in grooves cut transversely into one side and securely bolted there. Their lower ends extend below the plank and are bent outward on the desired slant, curve, or angle, and the bottom steel plate, g' , is attached by bolts or other suitable means to said bars. This bottom plate extends from below their lower ends and up to the plank along its entire length. The two end strips are sharpened on their outer edges and are left without cover. All the others and the plank on this side are covered with a metal plate, making a smooth metal surface its entire length. The reverse side is provided with a truss-frame strongly bolted thereto and braced from its lower side. This frame is connected at its center to an arm, Z, which extends to and across the top of the mold-board, and is strongly attached to each. This arm is provided with a bolt-hole on each side of the mold-board and one or more at its outer end. These and other holes through the truss-frame are made for attaching this frame and mold-board to the main frame, with bolts or pins passing through a part or all of them, and other holes in the main frame to bolt this frame and mold-board to the main frame at any desired angle either side in front. At the rear side the mold-board is provided with a backwardly-inclined concave plate, g^5 , which, when the mold-board has been reversed to be used as a compacter and smoother, serves to direct the clods and loose earth downward to the share g' .

It is convenient to pivot the mold-board by means of a bolt, F' , having an eye or eye-nut at one end to serve as a joint for the tongue b' of the truck D. This bolt passes up through one or the other of the holes in the arm Z at front and rear of the mold-board, respectively, and through the center cross-piece of the main frame. This arm Z is provided with a hammer-strap, p , easily attached to or de-

tached from its upper side, having a bolt-hole near its outer end to receive a bolt or pin, g^2 , which passes through it, and one of the holes r in the main frame and one of the end holes in the arm Z, to lock the mold-board and its frame at any desired angle. This hammer-strap p may terminate with a handle. At each end the mold-board is shod with an upright plate, s , of iron, and the plate g' is cut inclined on the end, so that the advance end of the mold-board will be able to cut its way and loosen the earth to be removed.

When the rear truck-tongue is on the lower side of the frame, it is disconnected and the nut is removed from the center bolt, if the mold-board is reversed for packing and smoothing the dirt and sharpening the bottom plate, g' , by use; but if the rear truck-tongue is on top of the main frame, as shown in Fig. 9, we have only to remove the bolt g^2 (if the hammer-strap is not used) and the mold-board can be reversed, revolved, or adjusted, as desired, in either direction.

Having described our invention, we claim as new—

1. The leading truck A, provided with its draft-tongue, the main frame, and the mold-board or scraper pivoted thereto, combined with a draft-bar, C, pivotally attached to said frame and adjustable to any desired position to the right or left of the median line, as set forth, by means of a series of holes, e , in the frame, and a stop-bolt, d , to lock the mold-board in position, whereby said frame and mold-board may be caused to advance more or less extended to one side of said median line.

2. In a road-scraper, a main frame, a scraping mold-board pivoted at its middle thereto, and means for adjusting and holding said scraper at any desired angle to the line of progression, combined with a leading truck, a draft-bar, and means for lateral adjustment to maintain the scraper in a position at one or the other side of the line of progression, and a following truck, with means to connect the same to the main frame with freedom for vertical movement, substantially as set forth.

3. In a road-scraper, a main frame provided with a transverse mold-board and a supporting-truck behind, combined with a leading truck and a draft-bar pivoted to the main frame and connected at its forward end to said leading truck, and means whereby said draft-bar may be adjusted and held in position oblique to the line of advance to cause the line of draft to be in the center or at either side of the same, as set forth.

4. In a road-scraper, a main frame, B, provided with the transverse mold-board, and supporting-trucks at the front and rear ends, combined with the draft-bar C, pivoted at its middle to the front cross-bar of said frame, and provided at its rear end with means for locking said draft-bar in position oblique to the line of advance.

5. In a road-scraper, a main frame, B, a transverse mold-board, and supporting-trucks

A D, loosely attached to said frame, combined with lifting-levers *i j*, fulcrumed on the truck D and attached by connecting-rods to the rear corners of said main frame to lift the same and the mold-board from the ground, as set forth.

5 6. In a road-scraper, a main frame, B, and mold-board F, supported at the front by a leading truck, A, combined with a following truck, D, and a reach, *b'*, extending therefrom to a jointed attachment at or about the middle of said main frame, whereby the rear end of said frame may be raised or lowered without material change in the position of the truck.

10 7. In a road-scraper, a mold-board or scraper constructed with a plank, F, provided with transverse metal bars bent forward below said plank, and the share-plate *g'*, bolted to said bars and extending the whole length of said plank, and an arm, Z, rigidly fastened
20 and braced to said plank at its upper edge and

at right angles therewith, extending backward therefrom and provided with truss-rods to the extremities of the scraper, and brace-rods, said arm being also provided with a pivot-hole before and another behind said scraper, whereby said mold-board is made stiff and may be pivoted to said frame and held in position by attachment of said arm Z to the frame.

8. In a road-scraper, a main frame connected loosely at its front end to a leading truck, combined with a rear truck provided with an upright guide-bolt, *m*, supported at its ends by attachment to said truck, and a sliding connection attached to said frame and sliding on said rod, for the purpose set forth.

FORDYCE M. MOULTON.

JARED BOOTH.

Witnesses:

LEICESTER F. BENTON,
S. W. HINDES.