

(No Model.)

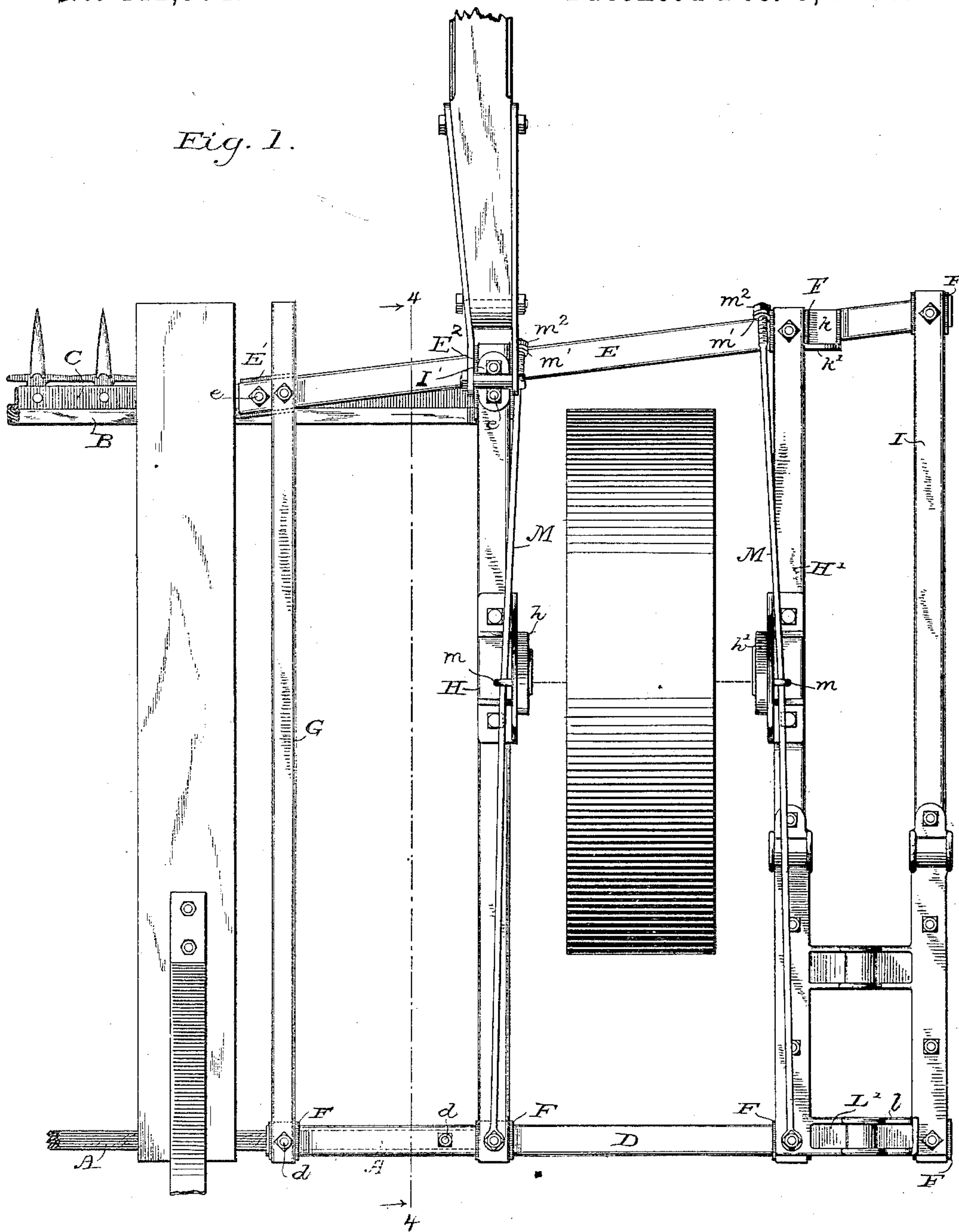
3 Sheets—Sheet 1.

W. R. BAKER & H. E. PRIDMORE
HARVESTER FRAME.

No. 442,504.

Patented Dec. 9, 1890.

Fig. 1.



Witnesses
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By Their Attorneys

Parkinson & Parkinson

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

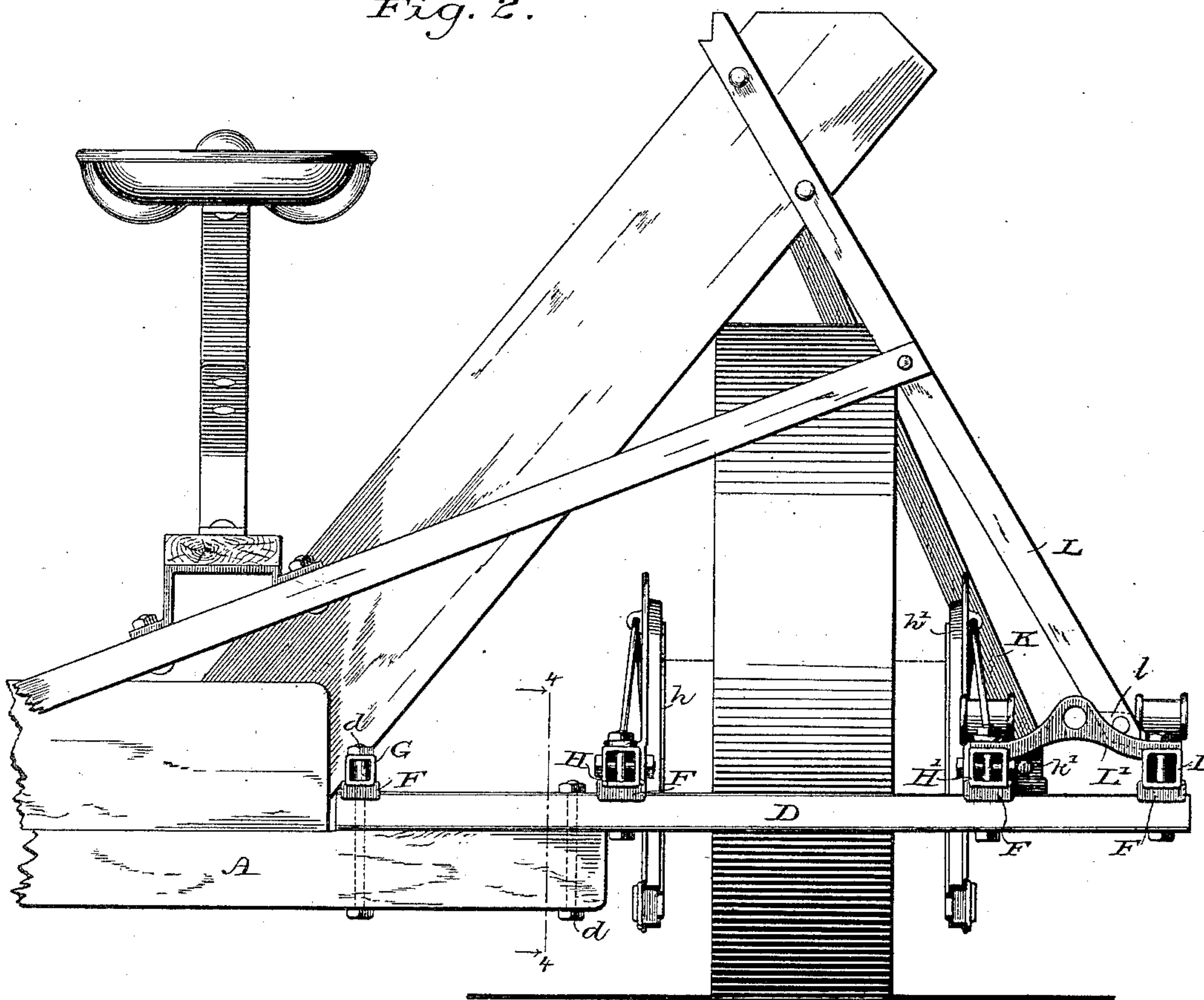
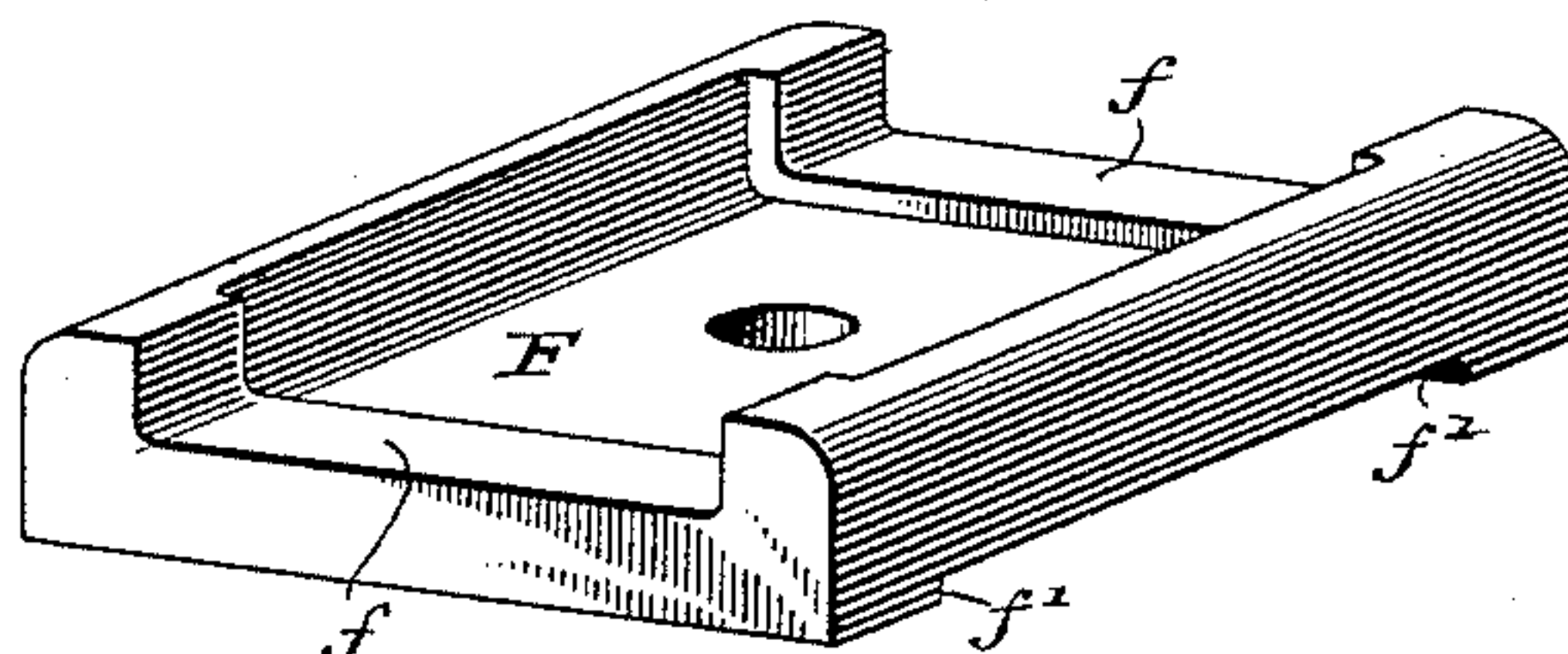


Fig. 7.



Witnesses

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3 Sheets—Sheet. 3.

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Fig. 3.

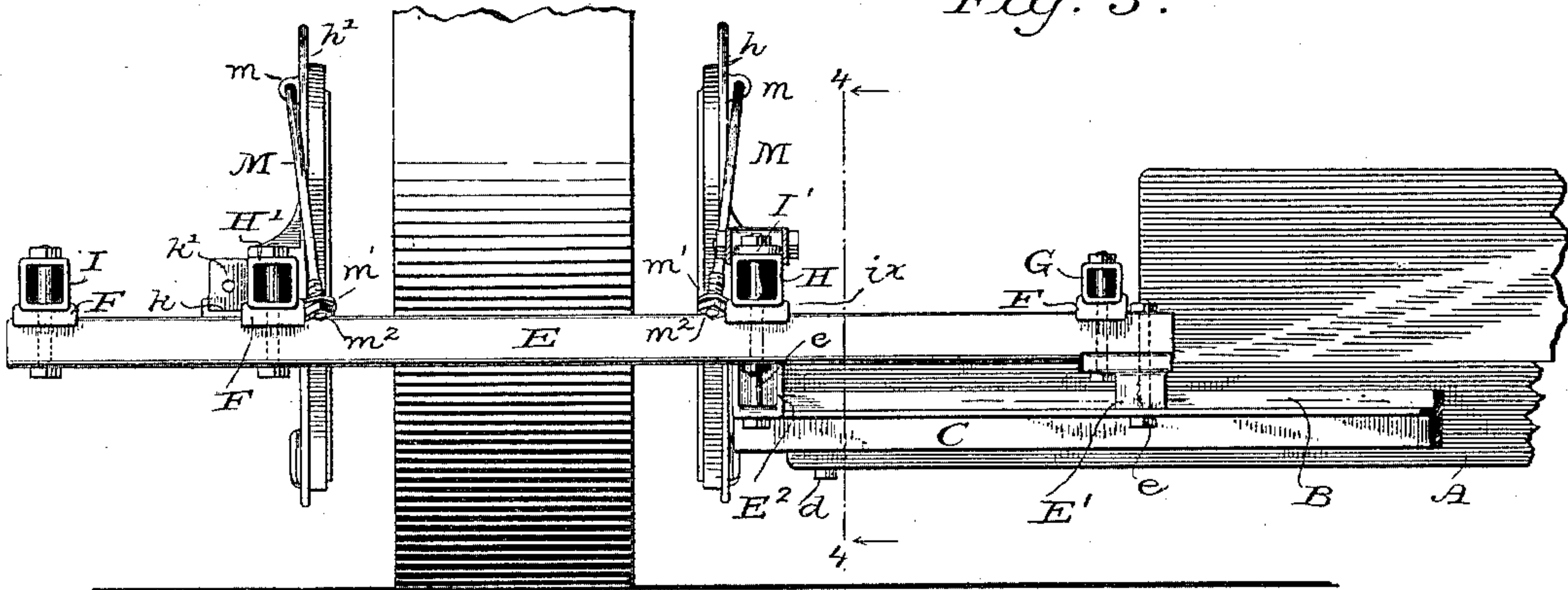


Fig. 4.

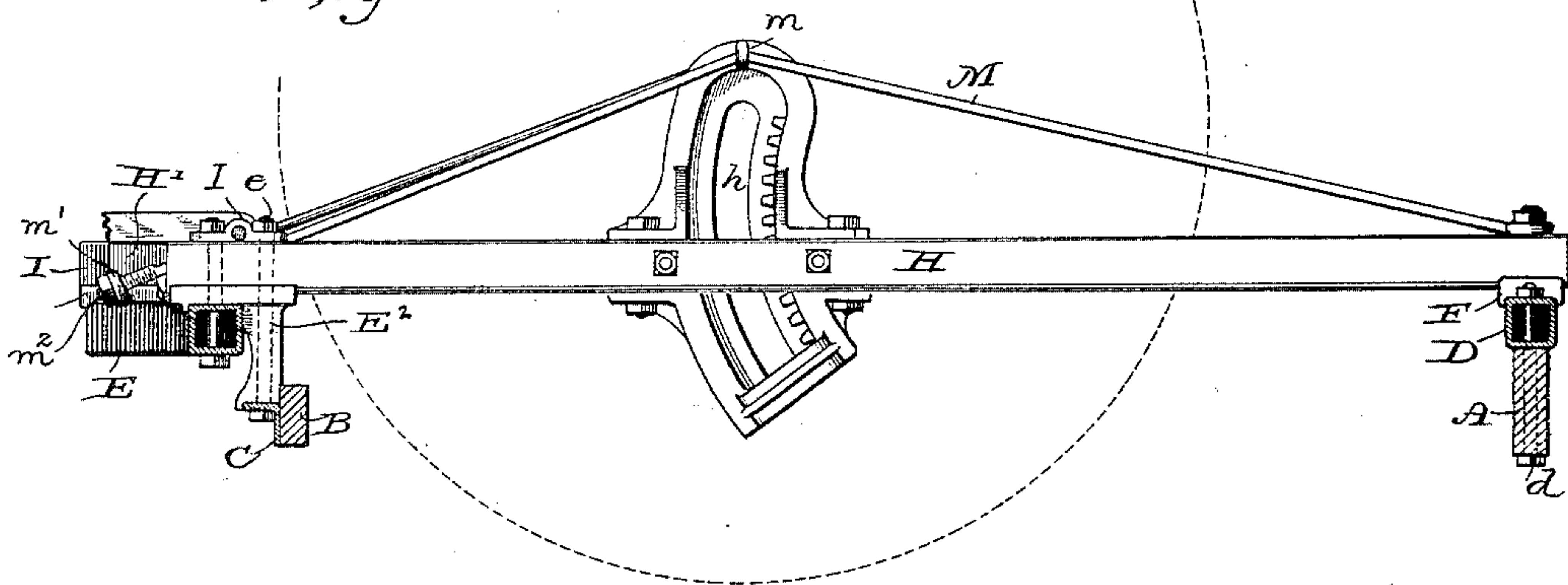


Fig. 5.

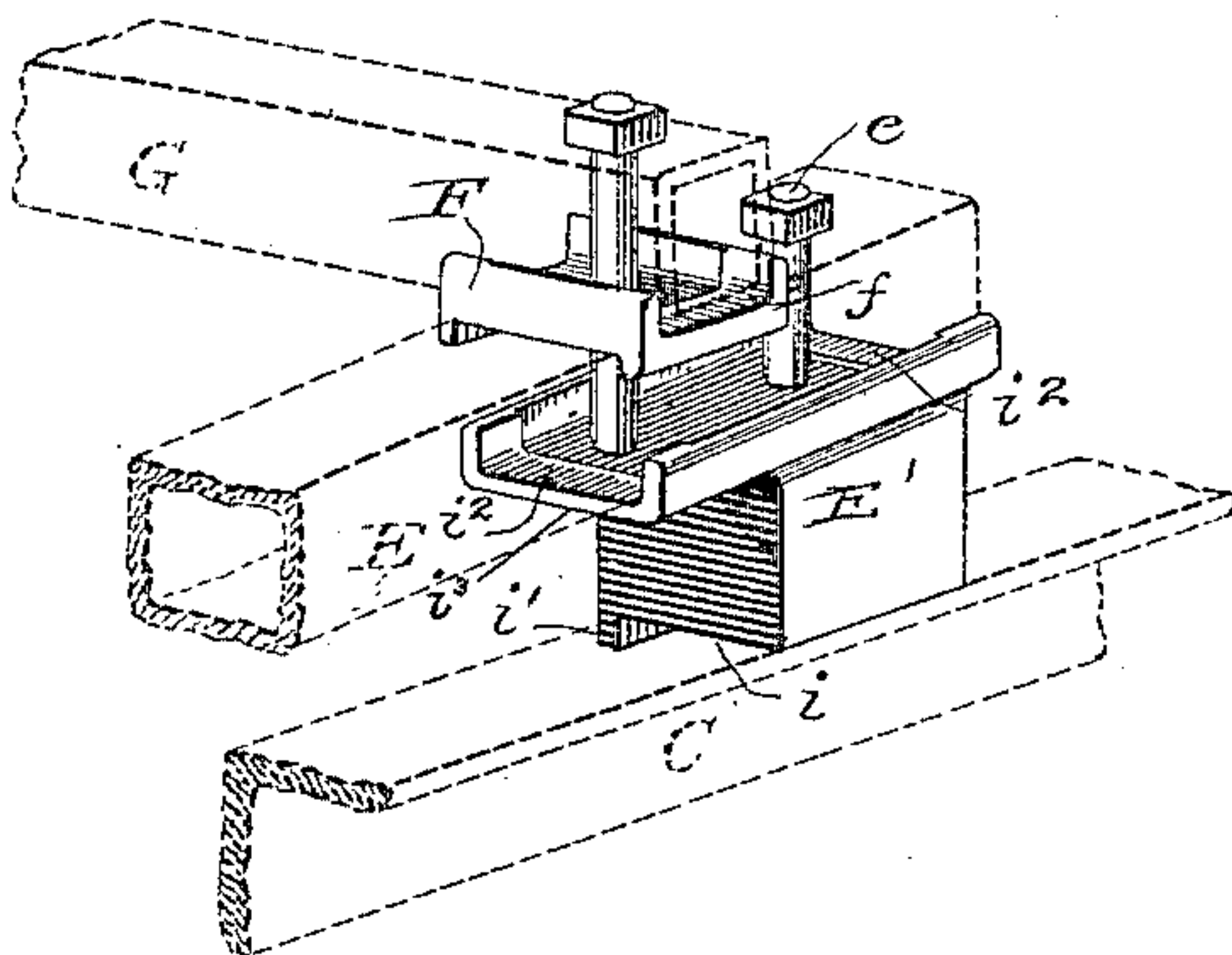
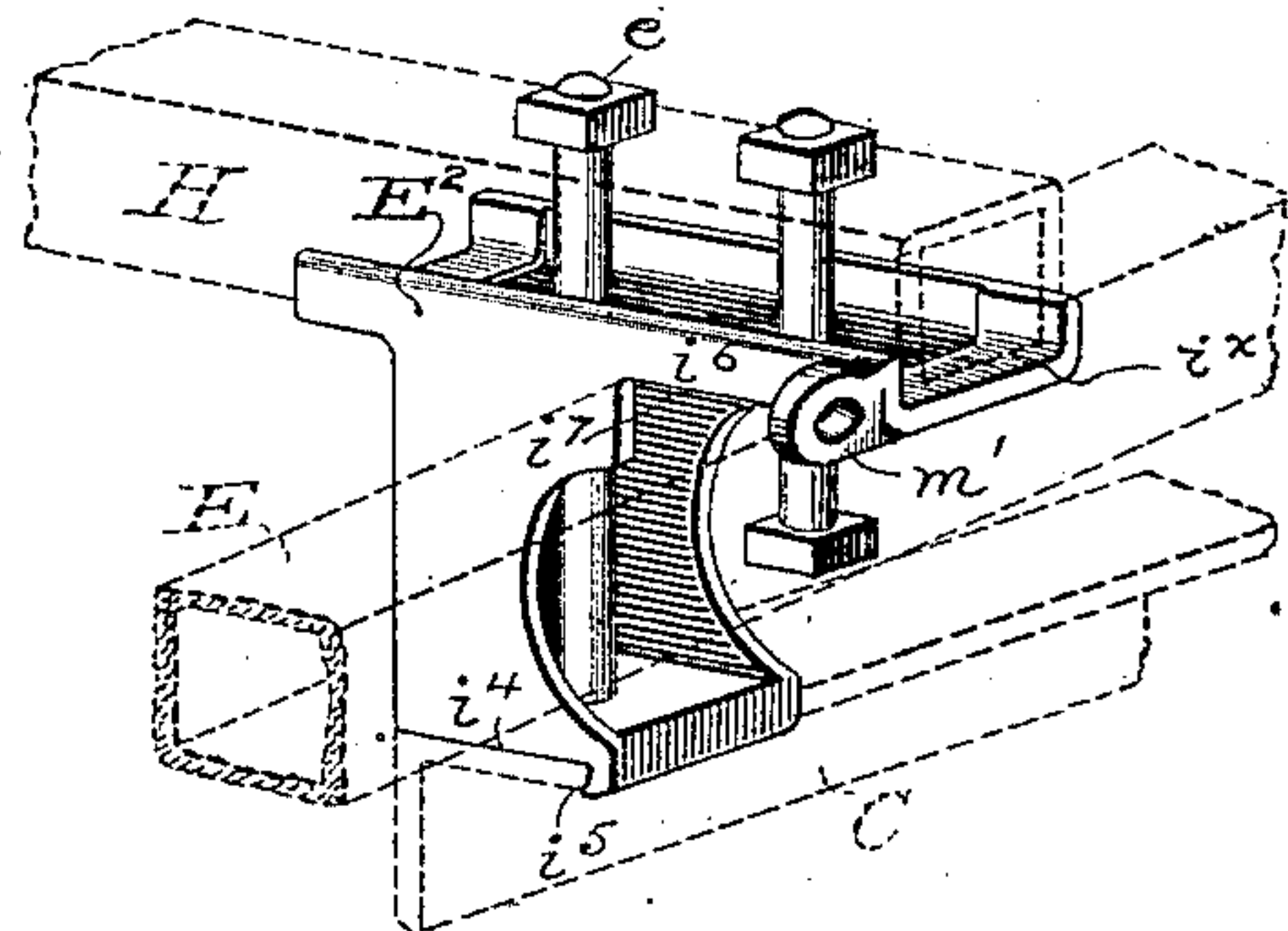


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER AND HENRY E. PRIDMORE, OF CHICAGO, ILLINOIS,
ASSIGNORS TO THE McCORMICK HARVESTING MACHINE COMPANY, OF
SAME PLACE.

HARVESTER-FRAME.

SPECIFICATION forming part of Letters Patent No. 442,504, dated December 9, 1890.

Application filed July 10, 1886. Serial No. 207,666. (No model.) Patented in England June 8, 1886, No. 7,693.

To all whom it may concern:

Be it known that we, WILLIAM R. BAKER and HENRY E. PRIDMORE, citizens of the United States of America, both residing at Chicago, in the county of Cook and State of Illinois, have jointly invented certain new and useful Improvements in Harvester-Frames, (for which Letters Patent of the Kingdom of Great Britain, No. 7,693, were granted with our knowledge and consent on the 8th day of June, 1886,) of which the following is a specification.

The base-frame of harvesters, especially those which have an elevator and support automatic binding apparatus, carries an enormous weight, and is subject to great torsional strain, which tend to twist it and disorganize the mechanism mounted upon it. Heretofore this frame has generally made been of wood; but in one or two instances, perhaps, that portion immediately beneath the binding apparatus and constituting the wheel-frame has been of heavy metal castings, and in at least one instance the base-frame has been made of gas-pipe united by T-joints and elbow-couplings. Tubular metal bars round in cross-section have been employed upon the binder attachment on account of their strength and lightness, to afford means for the adjustable attachment to the elevator-frame, and for this purpose have been found eminently suitable, their cylindrical shape offering no objection, but rather facilitating such adjustable attachment; but although we are well aware that such application has been heretofore proposed we have found that this very cylindrical outline renders them unsuitable for use in a base-frame to which other and heavier frame-work is to be applied, and upon which tremendous torsional strain will come, since the fastening-bolts will receive no assistance and will be in nowise braced by this shape, but must themselves alone sustain the entire strain.

In the present invention we propose to replace the base-sills or base-sills and girts of the harvester-frame by sills and girts of tubular metal, square or rectangular, or practically so, in cross-section, which will afford the same facility for attachment between them-

selves and other parts of the frame-work and the same or increased strength of joint at such points of attachment as do the square wooden beams and timbers heretofore used for the purpose, and will therefore involve no further reorganization of the superposed parts. Since the greatest weight and the greatest strain are in the immediate vicinity of the main wheel, which is located under the elevator, it will ordinarily be found sufficient to employ these tubular bars of rectangular cross-section in the base-frame of the elevator alone, this also including the wheel-frame, leaving the front and rear sills of the platform-frame of wood, as heretofore, overlapping and bolted to the front and rear sills of the elevator-frame, and the invention will be described as thus constructed, without, however, intending to limit ourselves in anywise thereby.

In the drawings, Figure 1 is a top plan view of a harvester-frame embodying our invention, the platform end being broken away and the A-frame of the elevator removed; Fig. 2, a rear elevation; Fig. 3, a front elevation embracing the parts and mechanism shown in the first; Fig. 4, a side elevation, as indicated by arrows and correspondingly-numbered section-line in the first, second, and third; Fig. 5, an enlarged detail view of the joint between the inner girt at the foot of the elevator, the front elevator-sill, and the angle-iron finger-bar, showing the chair and independent spacing-block at that point; Fig. 6, an enlarged detail view of the joint between the next outer girt, or that which constitutes the inner lateral bar of the wheel-frame, the front elevator-sill, and the angle-iron finger-bar, showing in perspective the combined chair and spacing-block at that point; and Fig. 7, an enlarged perspective view of one of the chairs interposed between girts and sills at their points of junction.

A is the rear sill of the platform-frame, and B the front sill, both of which may be formed of wood in the usual way, so that the finger-bar and wooden guide-bars of the apron may be readily and cheaply applied thereto.

C is the finger-bar of angle-iron, with its horizontal ledge uppermost and somewhat be-

low the upper edge of the front sill and extending therealong to the wheel-frame. Overlapping the rear platform-sill at its outer or stubble end and on its upper side, and secured thereto by bolts d , is the rear sill D of the elevator-frame, formed as a hollow bar of rolled or forged iron rectangular in cross-section. The front platform-sill and finger-bar attached thereto are likewise overlapped by a tubular bar E, of rolled or forged iron, also rectangular in cross-section, which extends therefrom a sufficient distance to constitute the front sill of the elevator-frame. The rear elevator-sill is in line with the rear platform-sill; but it is preferred that the front elevator-sill shall flare somewhat from the platform-sill and finger-bar, to which latter it is attached by bolts e , as presently explained, to give more space for the main wheel and binding attachment.

A spacing-block E' is interposed between the front elevator-sill and the angle-iron finger-bar at the point where they overlap and are bolted together adjacent to the innermost girt, and a second spacing-block E'' is also employed to connect them and preserve their vertical distance apart at the point where the next outer girt, or that one constituting the inner lateral bar of the wheel-frame, intersects them, thus providing a space for the play of the sway-bar where such bar is located beneath the A-frame of the elevator. It follows from the oblique arrangement of the front elevator-sill that the joints between the said sill and finger-bar, and also between them and the girts, will differ more or less from the others, as will be directly explained. The girts or cross-bars of this frame may, with some beneficial effect, be of angle-iron or other metal bar; but herein are also rectangular metal tubes or square pipes, and although they may be bolted directly to the front and rear elevator-sills, it is deemed advisable to interpose metal chairs F, which, for lightness, for strength, and to give a certain elasticity to the connection, are made as rectangular frames hollowed out in the center, and having upon their upper faces seats f to receive the cross-girts, while other seats f' at right angles to the foregoing, for the rear sill and at a suitable angle for the front sill, saddle and closely embrace said sills. For the innermost cross-girt G, which extends from foot to foot of the inner elevator-struts beneath the A-frame, chairs are placed in position adjacent to the extreme inner end of the elevator-sills and above an offsetting extension of the seat in the front spacing-block. Then a securing-bolt is passed through said girt, through the central space of the chair, and through the rear sill, a single bolt clamping all three pieces together. At the front a single bolt passes through the girt, through the chair, through the inner end of the front metal sill, and through the offset from the spacing-block, thus completing the fastening at that point. The two girts H H', constituting the lateral bars of the wheel-

frame and that have secured to them the rack-standards h h' , in which the axle is mounted, are likewise attached to the front and rear elevator-sills by bolts passing through the girts, through the chairs, and through the sills, except at the forward end of the inside girt of the pair where the bolt passes through the girt, the spacing-block, and the upper flange of the finger-bar, and a fourth girt I at the extreme stubble side of the machine is also secured by a bolt passing through each end of the girt and the chair at that end and through the sills.

The spacing-blocks for the front sills may be either of wood, as heretofore used, or of metal; but it is much preferred to make them as metal brackets which should be hollow or of skeleton outline to gain lightness so far as consistent with the requisite strength. The inner spacing block or bracket, or that adjacent to the front inside elevator-strut, is formed with a foot i , which rests upon the upper or horizontal flange of the angle-iron finger-bar, and it has a snug i' to come against the rear of the bar, and may have a second snug to embrace the front edge thereof. It also has a seat i'' to receive the end of the front elevator-sill, and since this sill is in the present structure oblique to the finger-bar and it is not found convenient to arrange the innermost girt precisely above the intersection of the finger-bar and sill, the seat is prolonged by means of an offset i''' at the stubble side to come directly beneath the front chair of said girt, and a bolt is passed through this offset or prolongation, through the front sill, chair, and girt, to unite them, as already explained. A second bolt passes through the end of the front sill at the side of said chair, through the spacing-block and the horizontal flange of the finger-bar at the intersecting points, thus completing the joint.

The spacing-block for the joint between the front platform-sill or finger-bar and the inner girt H of the wheel-frame is best made as an integral part of the chair at that point, when, as here, the obliquity of the front elevator-sill causes such relation of parts as to permit it. It is then formed with a foot i^4 , to plant upon the horizontal flange of the finger-bar, a snug i^5 taking over the front edge of said flange, and a forwardly-projecting offset i^6 or continuation of the girt-seat i^x , which is undercut to afford a seat i^7 for the oblique sill, this latter running in front of the body of the block. The parts are united by two bolts, one of which passes through the girt, the chair, the block or spacer behind the oblique sill, and the upper flange of the finger-bar, and the other through the girt, the offset, and the oblique sill. These bolts also serve to fasten the clip I' for the tongue-pivot to the upper face of the girt.

In order to support the front outer elevator-strut K, the chair, which receives the forward end of the outer bar of the wheel-frame, will be formed with an offsetting seat

k for the lower end of the strut, and a flange k' , which permits a bolt to be passed through said strut to firmly secure it. The rear outer elevator-strut L may be secured at its base
 5 by bolting to a web l , which rises from the usual bearing bracket or bridge L' , connecting the two outside girts adjacent to the rear sill, and preferably rests upon a seat formed upon said bridge alongside of the flange, but
 10 may of course rest upon any other suitable contiguous part of the frame.

The rack-standards or bridle-brackets for the main axle, bolted, as before stated, to the lateral bars or girts of the wheel-frame, have
 15 each one offsetting ear m at or near the top, (best arranged on the side away from the wheel,) through which ears pass truss-rods M, fixed at their rear ends to said girts above or immediately adjacent to the rear sill, and at
 20 their front ends threaded and passing through lugs m' from the chairs at the junction of these girts with the oblique sill, beyond which lugs they receive nuts m^2 , whereby they may be tightened to serve their
 25 double purpose of bracing the rack-standards and trussing the main frame.

We claim as our invention—

1. The combination, to form a harvester base-frame, of tubular metal rear and front
 30 sills rectangular in cross-section, and metal girts uniting said rear and front sills.

2. The combination, to form a harvester base-frame, of metal rear and front sills and metal girts uniting said rear and front sills,
 35 both sills and girts being tubular and rectangular in cross-section.

3. The combination, substantially as here-
 inbefore set forth, to form a harvester-frame, of metal rear and front sills tubular and
 40 rectangular in cross-section, metal girts extending from the rear sill to the front sill, chairs interposed between the girts and the sills and having seats for their reception, and bolts passing through the sills, chairs, and
 45 girts.

4. The combination, substantially as here-
 inbefore set forth, of the metal rear and front sills and metal girts tubular and rectangular
 50 in cross-section, the skeleton chairs having seats to embrace and receive the sills and girts, and the bolts passing through the girts, chairs, and sills.

5. The combination, substantially as here-
 inbefore set forth, of the rear and front plat-
 55 form-sills, the front and rear elevator-sills formed of tubular metal, rectangular in cross-section, overlapping the platform-sills and secured thereto, and the tubular metal girts, also rectangular in cross-section, uniting said
 60 metal front and rear sills, and also at the inner side uniting the platform-sills.

6. The combination, substantially as here-
 inbefore set forth, of the platform-sills, the angle-iron finger-bar, the metallic rear ele-
 65 vator-sill overlapping and in line with the rear platform-sill, the metallic front elevator-sill flaring outwardly from the front plat-

form-sill and finger-bar, the metallic inner cross-girt secured at its ends to said plat-
 form and elevator sills and to the finger-bar, 70 and the adjacent cross-girt secured at its front end to the oblique front sill and finger-bar and at its rear end to the rear elevator-sill, said elevator-sills and girts being tubular and rectangular in cross-section. 75

7. The combination, substantially as here-
 inbefore set forth, of the wooden front and rear platform-sills, the angle-iron finger-bar secured to said front sill, the tubular front
 80 elevator-sill formed of metal and rectangular in cross-section, overlapping the front platform-sill and finger-bar, the tubular rear elevator-sill likewise formed and overlapping the rear platform-sill, the inner cross-girt se-
 85 cured to the overlapping front sill by bolts passing through said girt, the metallic elevator-sill, and the horizontal flange of the finger-bar and to the rear sills by a bolt passing through the girt and both sills, and the ad-
 90 jacent girt likewise formed and secured at its front end by bolts passing through girt, elevator-sill, and finger-bar, and at its rear by a bolt passing through girt and sill.

8. The combination, substantially as here-
 inbefore set forth, of the front and rear plat-
 95 form-sills, the angle-iron finger-bar secured to said front sill, the forwardly-flaring tubular front elevator-sill formed of metal rect-
 angular in cross-section and overlapping the front platform-sill and the finger-bar at its
 100 inner end, the rear metallic elevator-sill also formed as a rectangular tube overlapping the rear platform-sill and in line therewith, the cross-girts likewise formed, and the bolts
 105 uniting the forward end of the inner girt to the front elevator-sill and finger-bar, its rear end to the two rear sills, the forward end of the adjacent girt to said front elevator-sill and finger-bar and its rear end to the rear
 110 elevator-sill, and the outer two girts to the two elevator-sills.

9. The combination of the oblique front
 elevator-sill, the cross-girt G, the interposed
 chair, the finger-bar, the spacing-block with
 115 its offsetting seat for the elevator-sill, interposed between the latter and the finger-bar, a bolt uniting said girt, elevator-sill, chair, and block, and a bolt uniting said elevator-sill, block, and finger-bar.

10. The inside front spacing-block formed
 120 with foot i and snug i' , to plant upon the angle-iron finger-bar, and a seat for the oblique elevator-sill offsetting in the direction of the length of the sill, for the purpose described.

11. The combination of the oblique front
 125 elevator-sill, the front platform-sill, and angle-iron finger-bar, the cross-girt H, a chair having seats for said girt and elevator-sill and extended into a spacing-block, with foot planted upon the finger-bar, a bolt uniting the
 130 girt, chair, and elevator-sill, and a bolt uniting girt, block, and finger-bar.

12. The chair at the junction of the oblique
 elevator-sill and girt H, formed integral with

a spacing-block and having a seat for the frame-girt, the foot i^4 , to plant upon the finger-bar, and the extension i^6 with its seat for the oblique elevator-sill.

5 13. The chair at the junction of the oblique elevator-sill and girt H, formed integral with the spacing-block and having seats for the frame-girt and elevator-sill, and a foot to plant upon the finger-bar, arranged as described,
10 and an offsetting lug for the reception of a truss-rod.

14. The combination of the oblique front elevator-sill and angle-iron finger-bar, the cross-girt H, the spacing-block at their inter-
15 section, having a foot planted upon said finger-bar, formed and also integral with a chair, and having seats for said girt and elevator-sill, a bolt uniting the girt, chair, and elevator-sill, a bolt uniting girt, block, and finger-bar, and
20 the clip for the tongue-pivot clamped to the upper face of the girt by these two bolts.

15. The combination, with the front and rear elevator-sills, the girts forming the lateral bars of the wheel-frame, the interposed
25 chairs, and the rack-standards bolted to the girts, of the truss-rods passing through ears at or near the top of the standards and fixed

at one end to the corresponding end of said girts and at the other end passing through lugs projecting from the chairs at that end 30 of the girts and receiving nuts beyond.

16. The combination of the front elevator-sill, the cross-girt H', the interposed chair having an offsetting seat k and flange k' , and the front outside elevator-strut stepped in said 35 seat and bolted to the flange.

17. The combination of the rear elevator-sill, the outside cross-girt, the adjacent girt or lateral bar of the wheel-frame, the bearing bracket or bridge connecting the two girts, 40 the rear outside elevator-strut stepped upon said bridge, the web or flange rising from said bridge, and the bolt passing through the web and strut.

18. A chair F, formed with cross-seats ff' 45 on its opposing faces for the reception of a sill and cross-girt, and with an offsetting seat k and flange k' for the reception and attachment of the foot of a strut.

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