

No. 881,529.

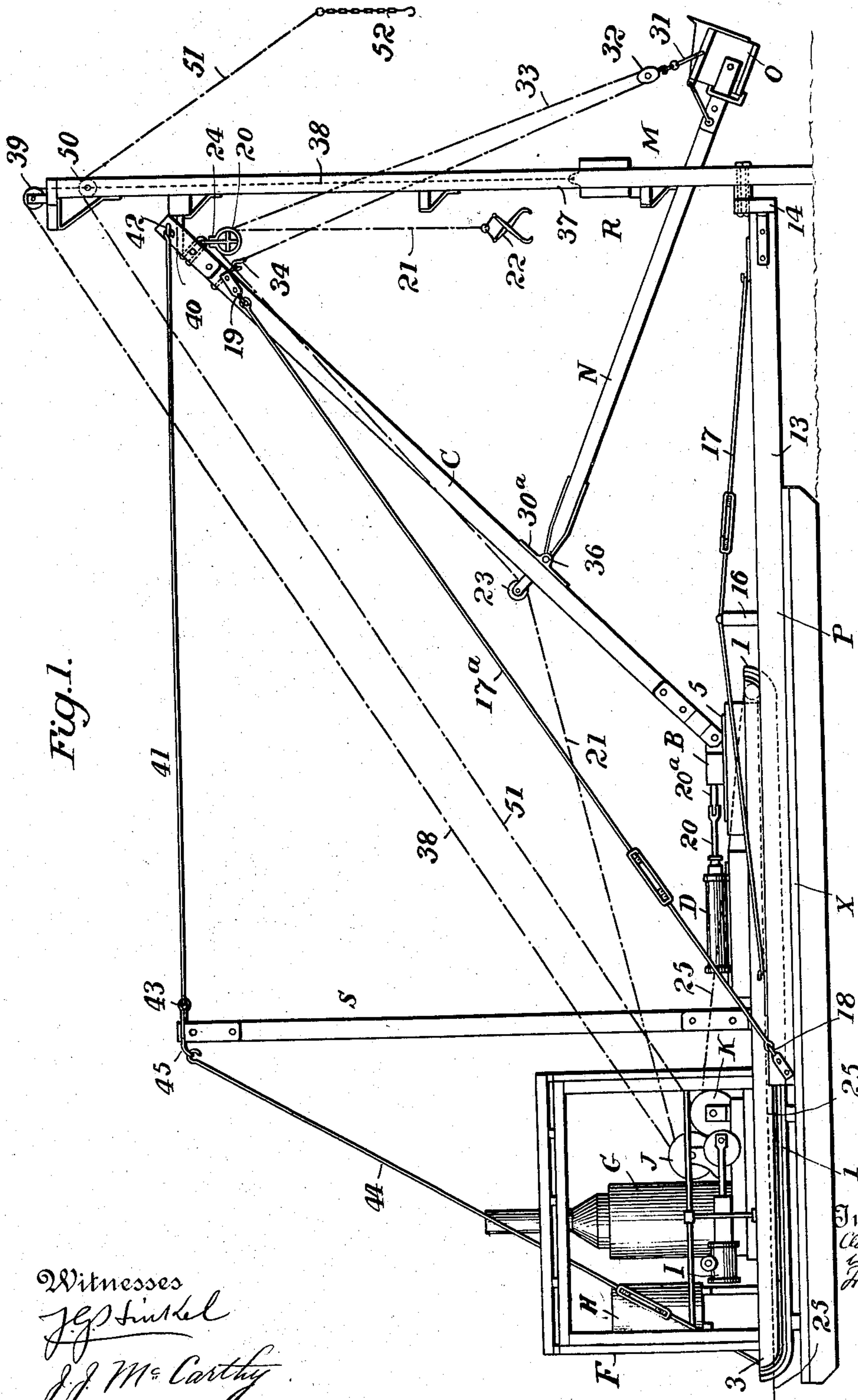
PATENTED MAR. 10, 1908.

C. L. BAKER, SR.

COMBINED LOADER, EXCAVATOR, AND PILE DRIVER.

APPLICATION FILED MAR. 4, 1907.

3 SHEETS—SHEET 1.



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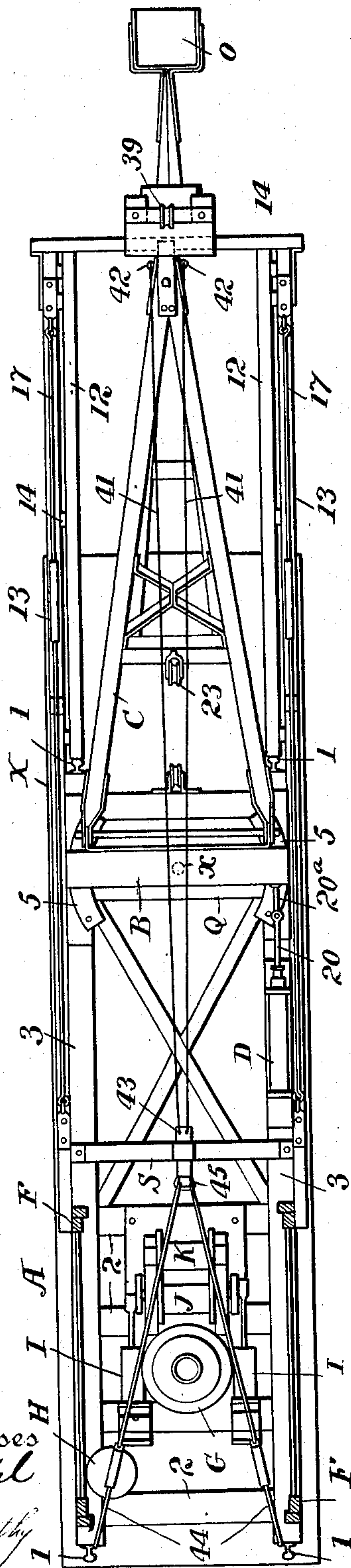
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Fig. 2.



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Fig. 3.

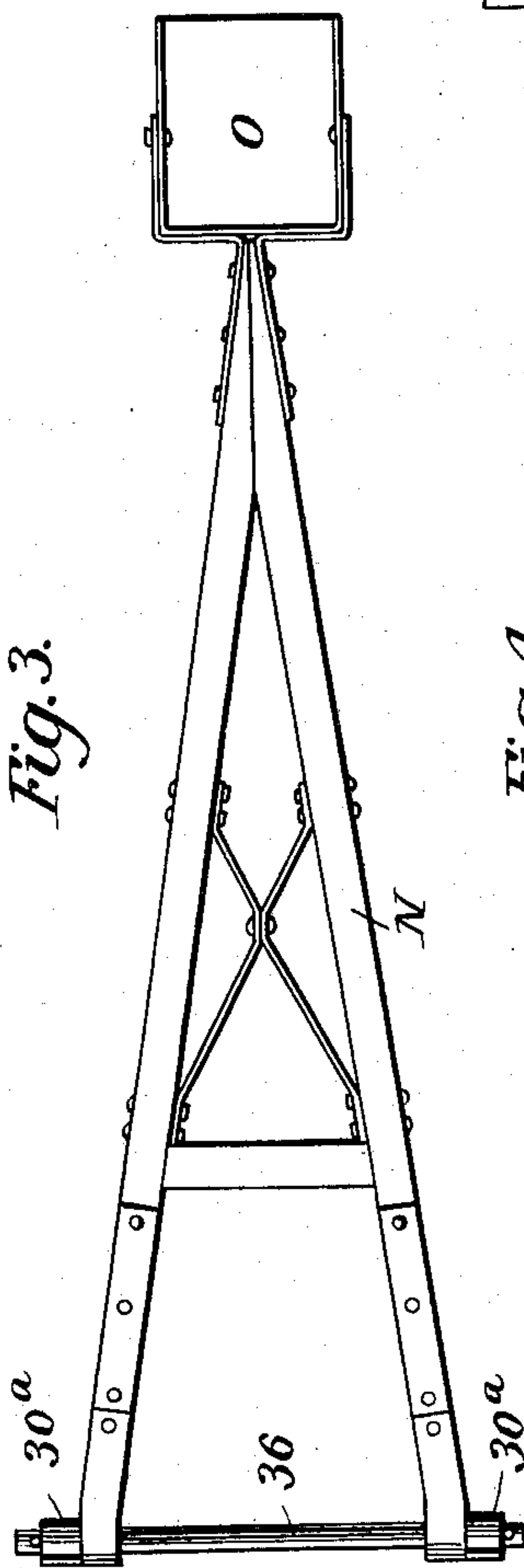
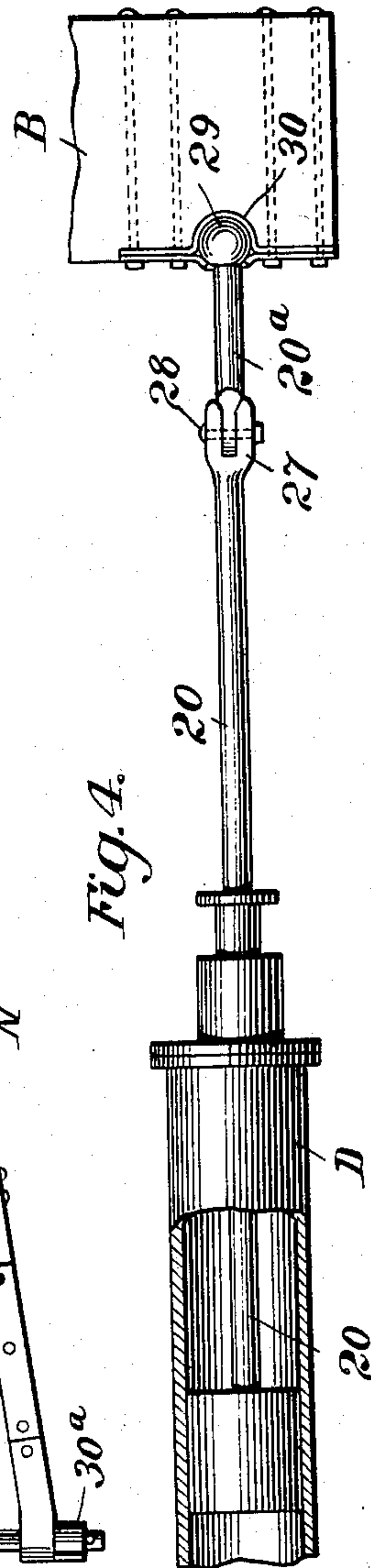


Fig. 4.



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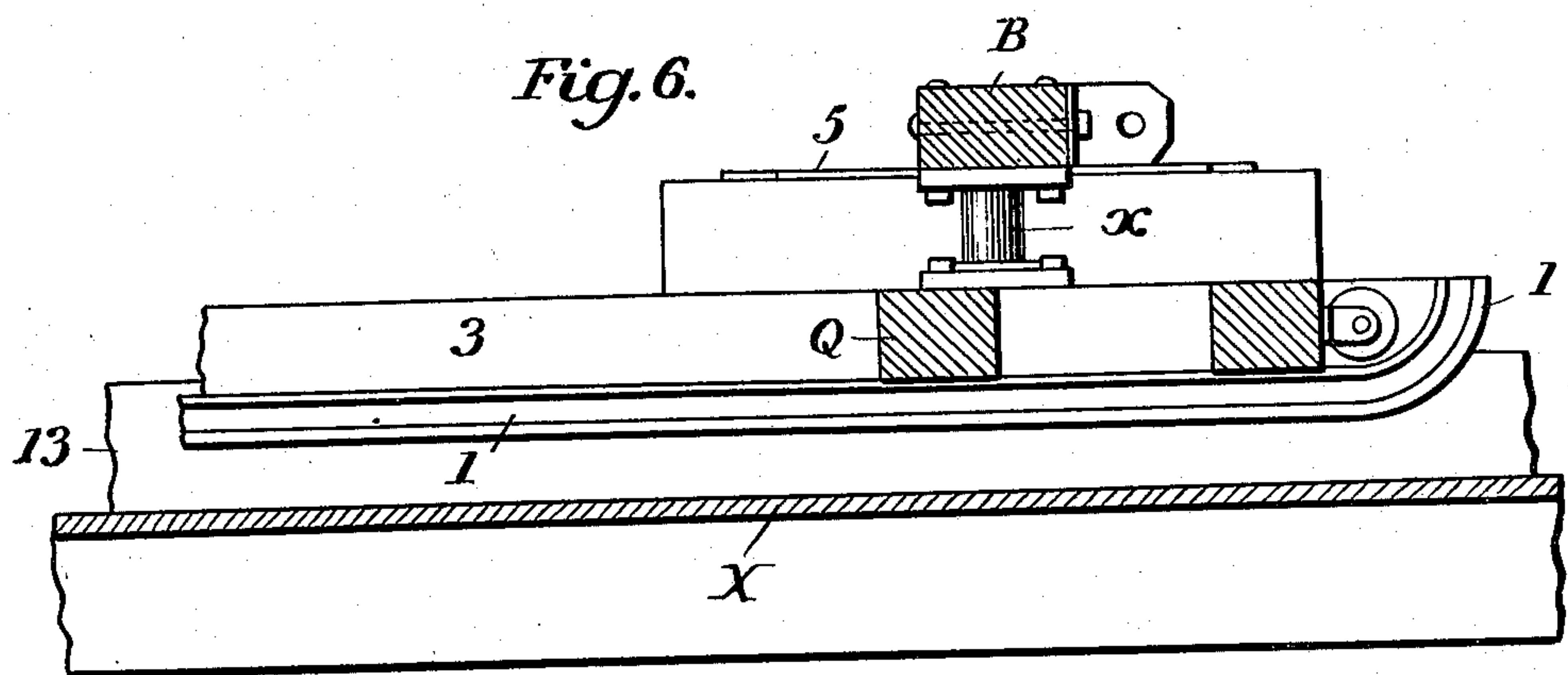
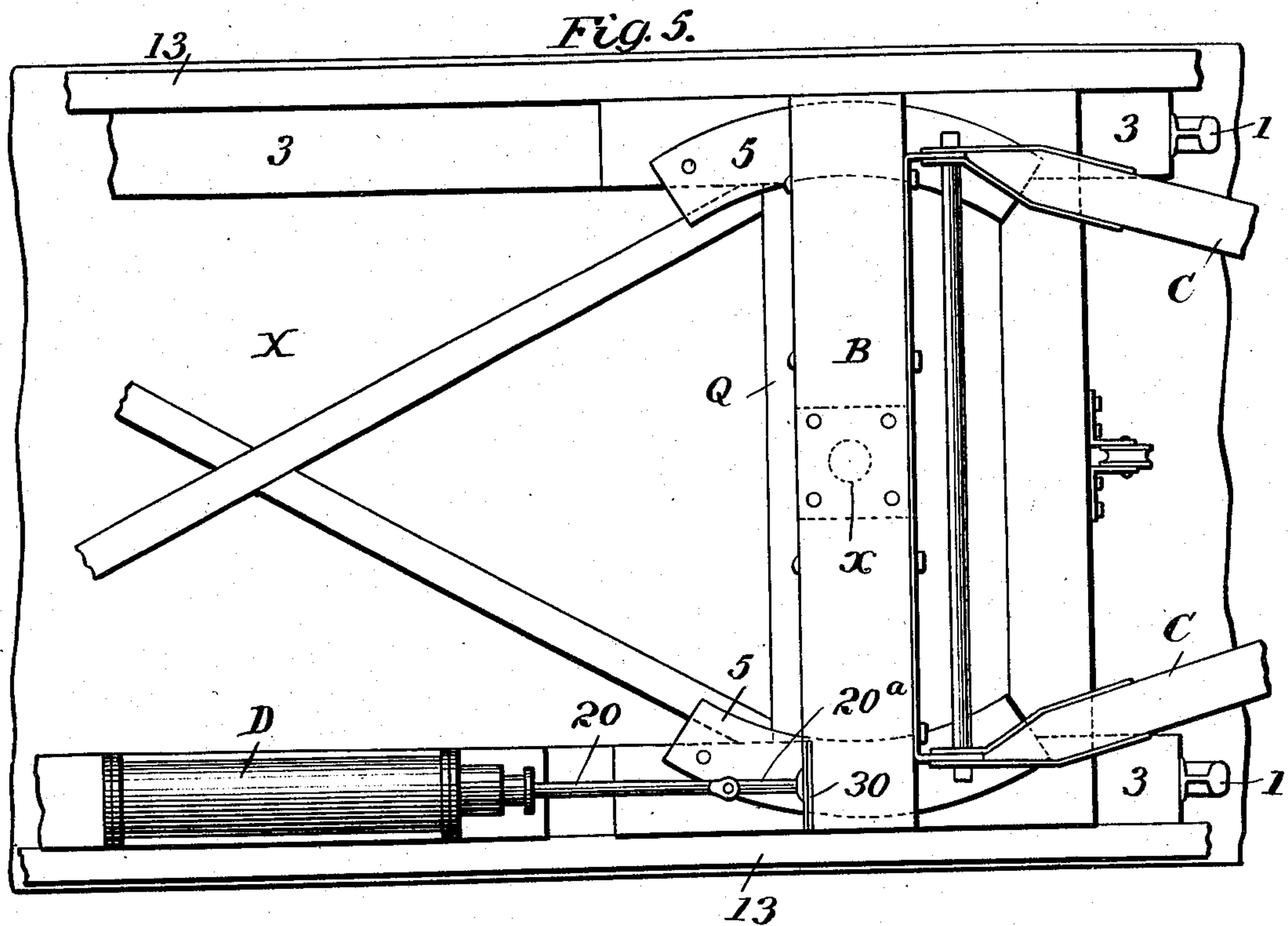
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3 SHEETS—SHEET 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

CLAUDE LEONIDAS BAKER, SR., OF CHATAWA, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO  
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## COMBINED LOADER, EXCAVATOR, AND PILE-DRIVER.

No. 881,529.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed March 4, 1907. Serial No. 360,506.

*To all whom it may concern:*

Be it known that I, CLAUDE LEONIDAS BAKER, Sr., a citizen of the United States, and a resident of Chatawa, in the county of Pike and State of Mississippi, have invented certain new and useful Improvements in a Combined Loader, Excavator, and Pile-Driver, of which the following is a specification.

The present invention relates to a combined loader, excavator and pile driver, and will be described in connection with the accompanying drawings, in which

Figure 1 is a side elevation of an apparatus constructed in accordance with the present invention; Fig. 2 is a plan view, with certain parts omitted to avoid confusion of lines; Fig. 3 is a detail plan of the excavator shovel and its supporting arm; Fig. 4 is a detail view, and Figs. 5 and 6 are, respectively, a plan and vertical sectional view of the rotatable support for the shears or boom.

The main parts of the apparatus are carried upon a base frame A which may be of any suitable construction but which, as shown, consists of side beams 3, 3 and cross beams 2, 2, and preferably, to facilitate shifting from place to place, each side beam has beneath the same a runner 1, preferably consisting of a T-rail bolted to the side beam and curved up at the ends as shown.

At the front end of the base A is a platform Q and to the latter is suitably pivoted centrally at  $x$  a cross beam B, the ends of which rest upon curved bearing plates 5, 5 bolted to the platform and to which are hinged the lower ends of the converging beams of a shears or boom C.

To one of the side pieces of the base A is secured an engine D of any suitable character, the piston rod 20 of which is connected by a link 20<sup>a</sup> with the opposite end of the cross beam B so that by admitting a motor fluid to the said engine the cross beam and the shears may be swung upon the pivot  $x$ .

Upon the rear end of the base A is erected a frame-work F inclosing an engine I which is geared so that it may be put into connection with either of two drums J, K, the said engine, as well as the engine D, being

supplied with steam from a boiler G to which water may be pumped as required from a tank H.

In ordinary operations the loader is used upon a platform X of a car, and in order to properly guide and position it upon said platform, as well as to support other parts of the apparatus, there is bolted to the top of the platform at each side a girder, which consists of a beam 13 projecting beyond the platform at the forward end and extending for a considerable distance alongside of the base A, and of a shorter beam 12 bolted to the inside of the beam 13 with intervening distance pieces 13<sup>a</sup>, and against the inner ends of which abut the turned-up ends of the runners 1 of the base A. The girders or beams 13 are stiffened and strengthened by means of struts 16 and brace-rods 17 extending over the struts and having eyes connected to hooks on the beams, and provided with suitable turn-buckles for tightening the rods as required.

The shears or boom C, with the supporting cross beam B, is swung about the pivot  $x$  by means of the engine D. Said shears is suitably supported in its inclined position by means of two rods 41, each hooked at the forward end and connected to an eye 42 at the upper end of the shears and extending back to an eye 43 upon an upright frame S by brace rods 44, 44, each hooked to an eye mounted upon the base B and suitably braced 45 at the top of the upright S and at the lower end connected to the said base A. At the upper end of the shears there is suspended a pulley 20 in a block 24, over which passes a log chain or cable 21, having a suitable tongs 22 at the outer end, and extending beneath the guide pulley 23 on the shears back to the drum J. As thus constructed the shears may be readily and quickly swung by means of the engine D so as to permit the logs to be properly engaged by the tongs and lifted clear of the cars, either in loading or unloading, and in either case where there are series of platform cars in line, the apparatus may be readily drawn from one platform to another by means of a cable 25 passing around a drum K and extending backward



over any desired number of platforms and suitably anchored at the rear end so that the power of the engine I is the means of shifting the entire loading apparatus from one position to another.

In order to avoid the necessity of a cross-head and guides, the connection between the piston rod 20 of the engine D and the cross-beam B is constructed as shown in Fig. 4, in which the link 20<sup>a</sup> extends between the separated jaws 27 at the end of the piston rod 20 and is connected thereto by a pin 28 which may be withdrawn, and the said link 20<sup>a</sup> has a spherical head 29 adapted to the spherical socket of a cross piece 30 fastened to the cross beam. This permits the requisite play of the link under the changing angles of the cross beam without any material side draft upon the piston rod.

The shears C is provided with bearings 30<sup>a</sup>, to which are pivoted the ends of the diverging beams of a bucket frame N, to the lower end of which is secured any suitable shovel or bucket O. To the bale 31 of the latter is connected a block 32 around the pulley of which passes a cable 33 fastened at one end to an eye 34 at the upper end of the shears and passing over the pulley of the block 24, when the latter is not used in logging—or the said block may have two pulleys—and back beneath the guide pulley 23 to the drum J.

As constructed, the cross beam B may be swung to carry the shears C to one side, bringing the bucket at the base of any embankment or part to be excavated, and then by rotating the drum, the bucket may be so lifted as to dig into the embankment, after which, by the operation of the engine D, the shears may be swung into position to bring the bucket above the place or car where the contents are to be discharged, when this discharge may be affected by releasing the hinged bottom of the bucket as usual. This construction of bucket is so well known that it is not necessary to illustrate the details thereof.

It will, of course, be understood that the bucket is not used when the parts are arranged for logging, and I therefore hinge the frame N to the bearings 30<sup>a</sup> by means of a cross pin 36 which may be removed whenever the frame N is to be detached, and further, whenever the shears are to be detached, this may be effected by unbolting the cross beam B from the platform and withdrawing the pin 28 connecting the link 20<sup>a</sup> to the piston rod of the engine D.

It is frequently required in connection with the apparatus, for use either in digging or logging, to drive piles, and for this purpose we connect the girders 13, 13 at the forward end by means of a cross beam 14, and to the latter we bolt detachably the vertical frame

M of a pile driver, the same consisting of a pair of guides 37, 37, between which slides the driver or hammer R, and to the latter is connected a cable 38 which passes over a sheave 39 at the top of the frame M and back to the drum J, or the said cable, which I have designated as 38, may be the cable 33 which in digging is used for operating the bucket O. This cable serves as a means of lifting the hammer R, which may be allowed to descend by gravity by disconnecting the drum J from its shaft as usual, the ordinary clutch devices being employed for this purpose and not necessary to be shown.

In order to properly brace the frame M of the pile driver, it may be bolted to the upper end of the shears C by means of a bolt 40 and this shears may also be further braced when the pile driver is being used by means of braces 17<sup>a</sup>, each having an eye at the upper end engaging a hook 19 at the side of the shears near the top, and at the lower end with an eye engaging a hook 18 at the side of the girder 13.

To lift the piles and set them in position between the guides and below the hammer, the frame M is provided at the upper end with a pulley 50, over which passes a cable 51 having a hooked chain 52 at the lower end and extending back to the drum K.

Any of the brace rods may be provided as required with suitable turnbuckles and the uprights S and frame M and girders 13, 13 are all bolted to their supports by suitable bolts capable of being readily removed so as to permit these parts to be readily detached and packed in close compass for transportation, or to permit them to be erected in any proper positions wherever required.

It will be seen that the above-described apparatus contains certain parts which are used in connection with the logging appliances, the digging appliances and the pile-driving appliances, and other parts which are detachable and can be placed in position according to the character of operations demanded, and that the said apparatus is capable of being readily applied to a platform of a platform car and of being shifted from one platform to another as operations progress.

Without being limited to the precise construction and arrangement of parts shown, what is claimed is:

1. The herein described logging apparatus, having a base A, cross beam B pivoted thereto, shears C pivoted to the cross beam, and an engine D operably connected with the cross beam to swing the latter about its pivot, for the purpose described.

2. The combination of a base frame A provided with runners 1, 1, cross beam B pivoted thereto, and shears pivoted to the



cross beam, and an engine operably connected with the said cross beam.

3. The combination of a base frame A provided with runners, 1, 1, cross beam B  
5 pivoted thereto, and shears pivoted to the cross beam, and an engine having a piston terminating in separated jaws, and a link having a ball and socket connection with the

cross beam extending between the said jaws, and connected thereto by a removable pin. 10

In testimony whereof I affix my signature in presence of two witnesses.

CLAUDE LEONIDAS BAKER, SR.

Witnesses:

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