

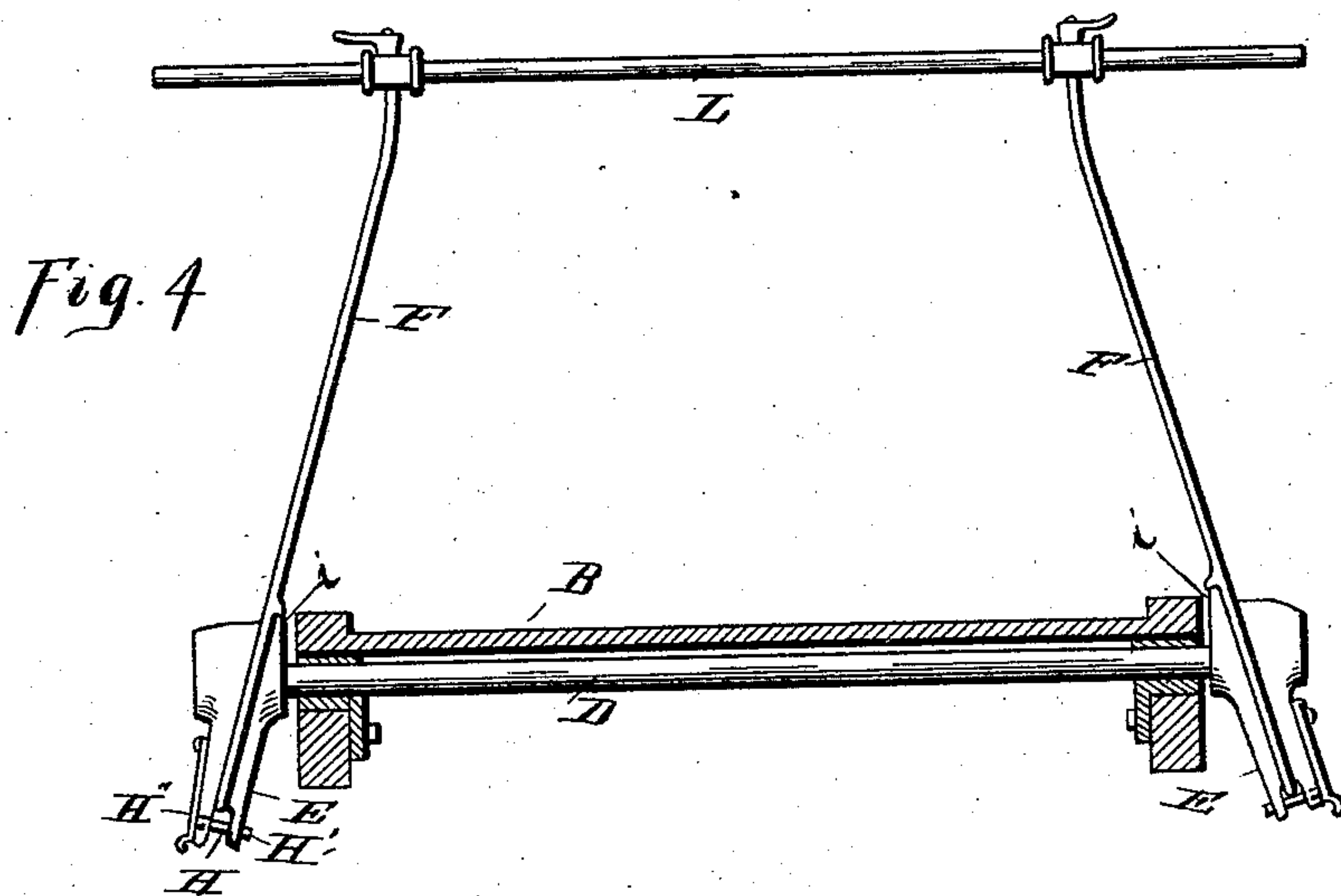
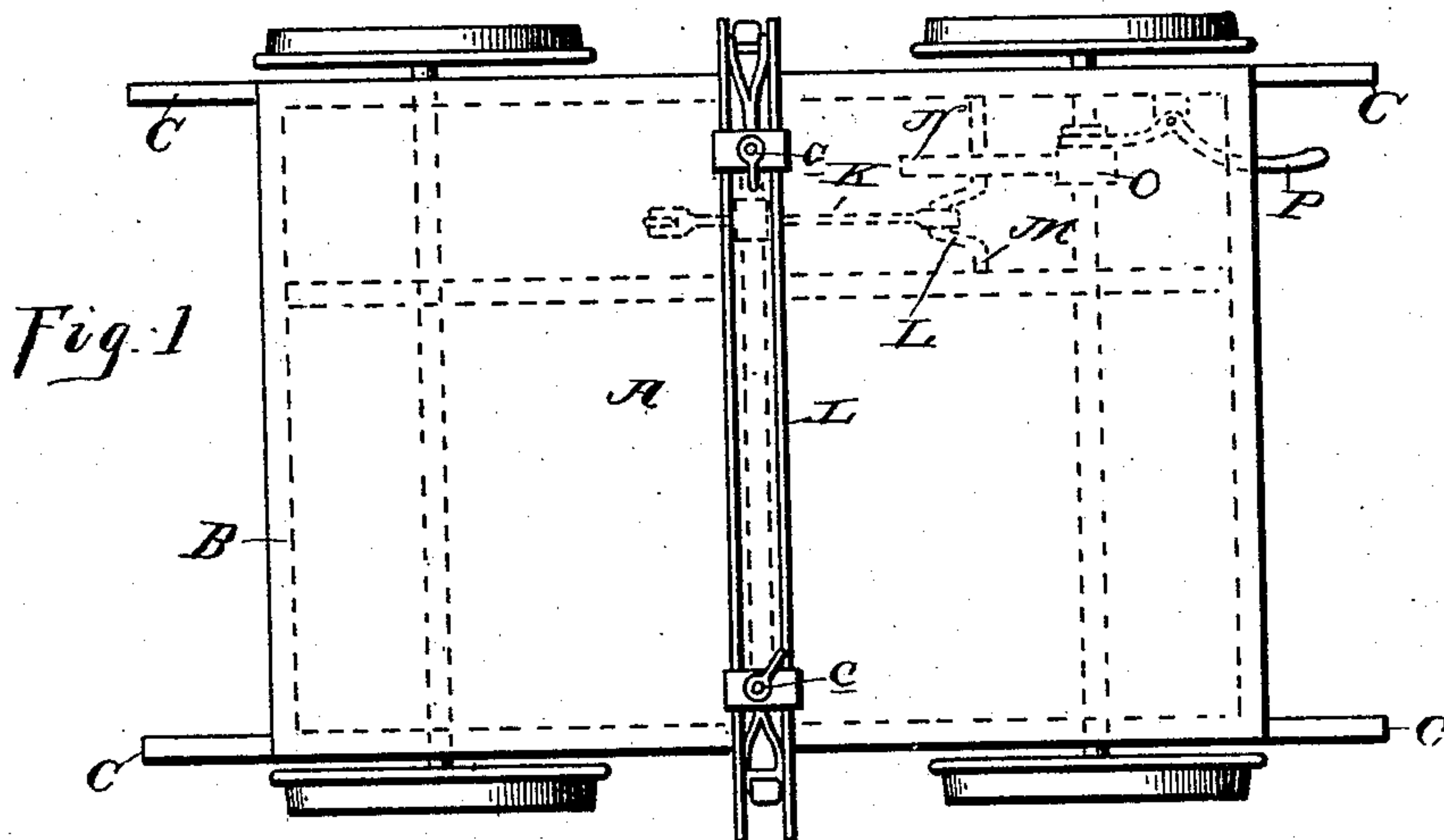
(No Model.)

2 Sheets—Sheet 1.

C. ROBERTS.
HAND CAR.

No. 455,577.

Patented July 7, 1891.



Witnesses:
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L. J. Whittemore

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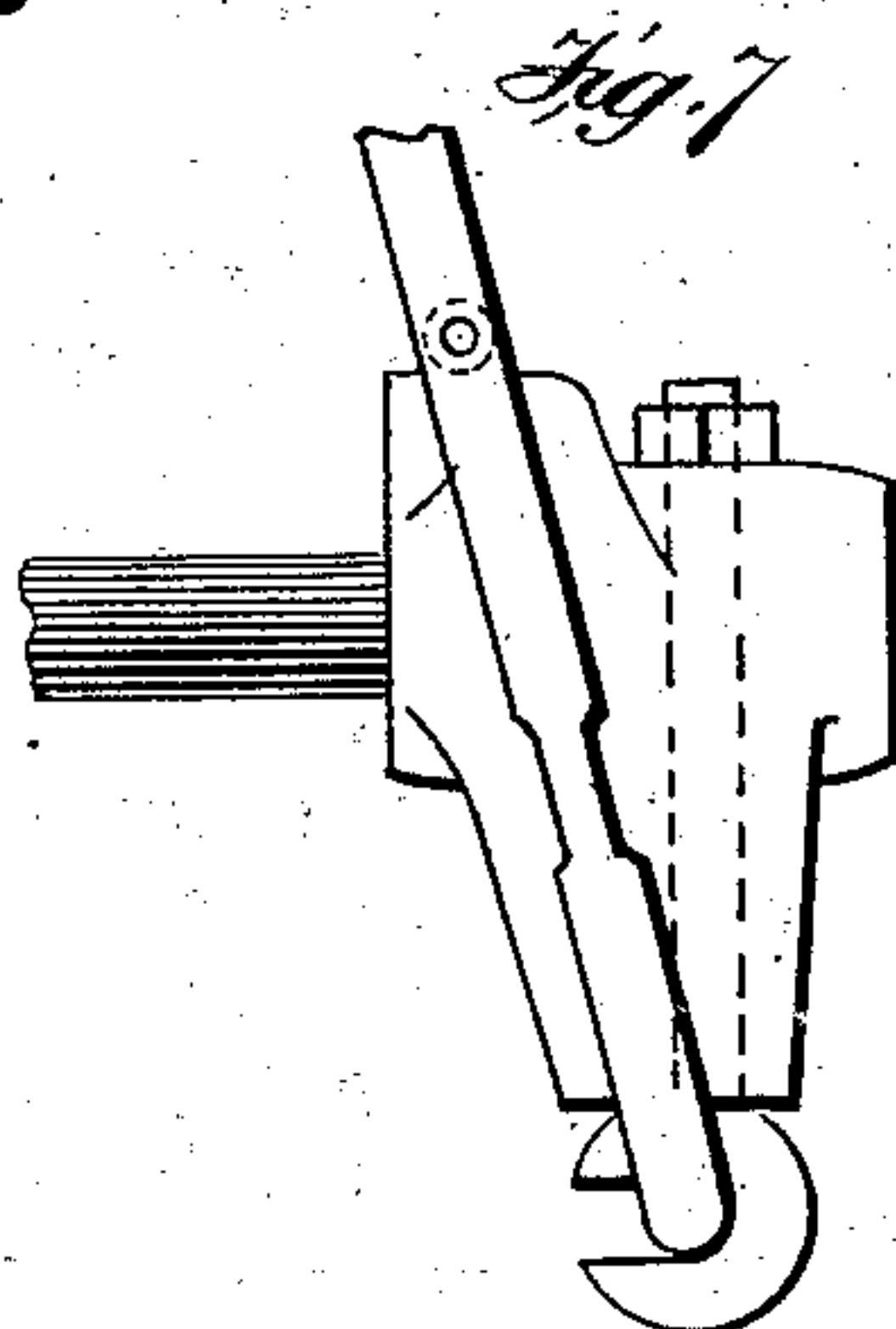
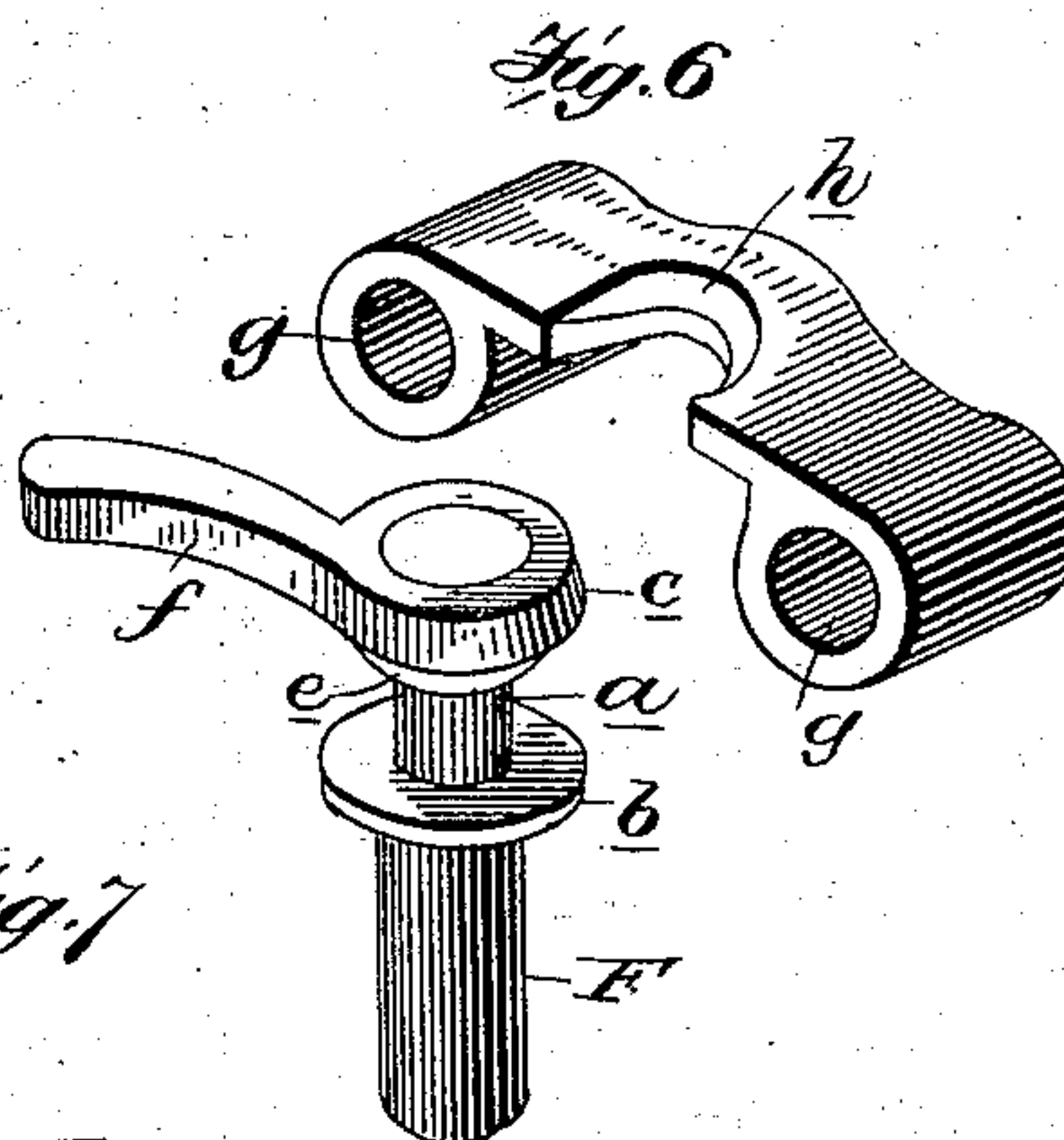
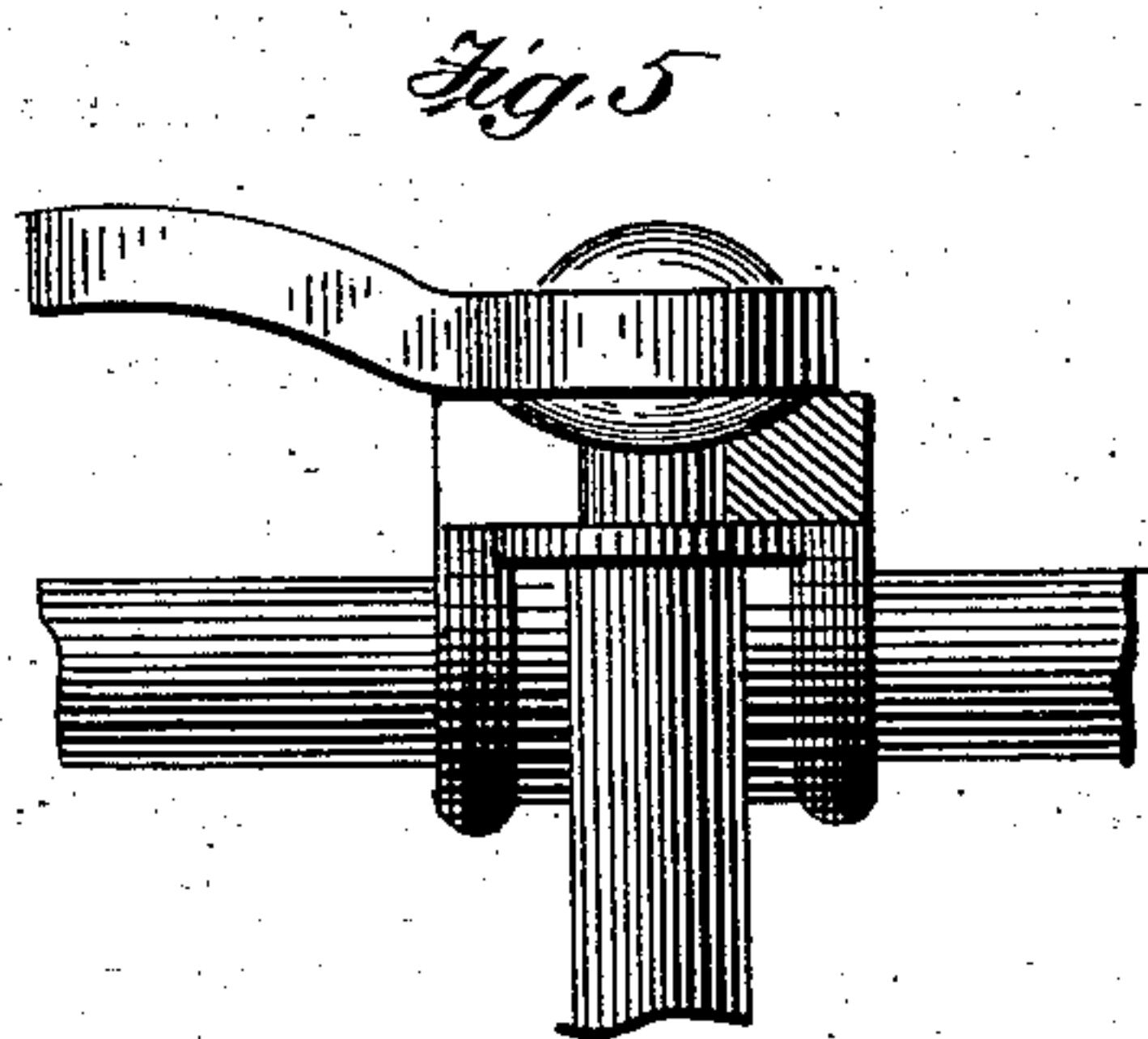
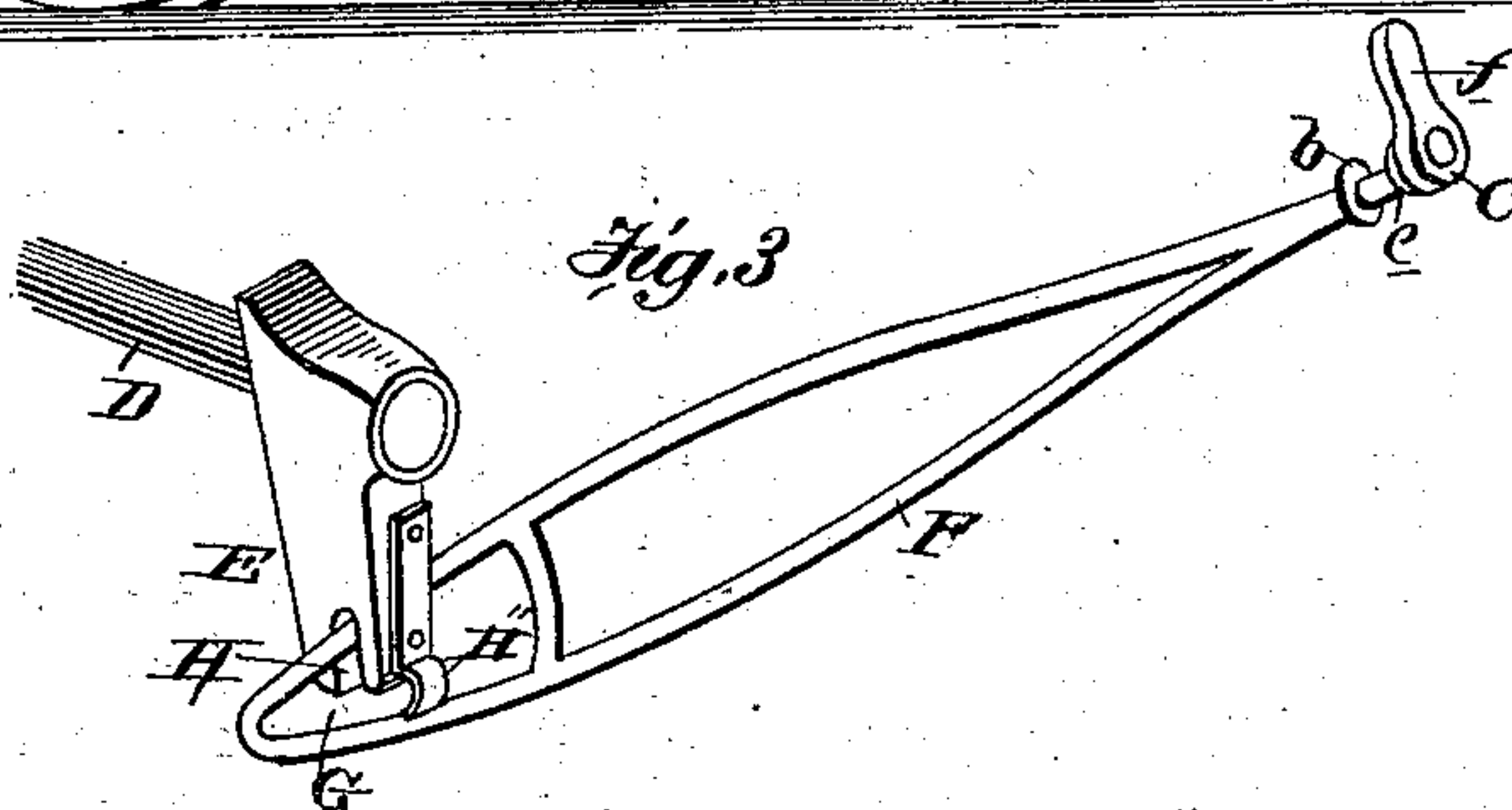
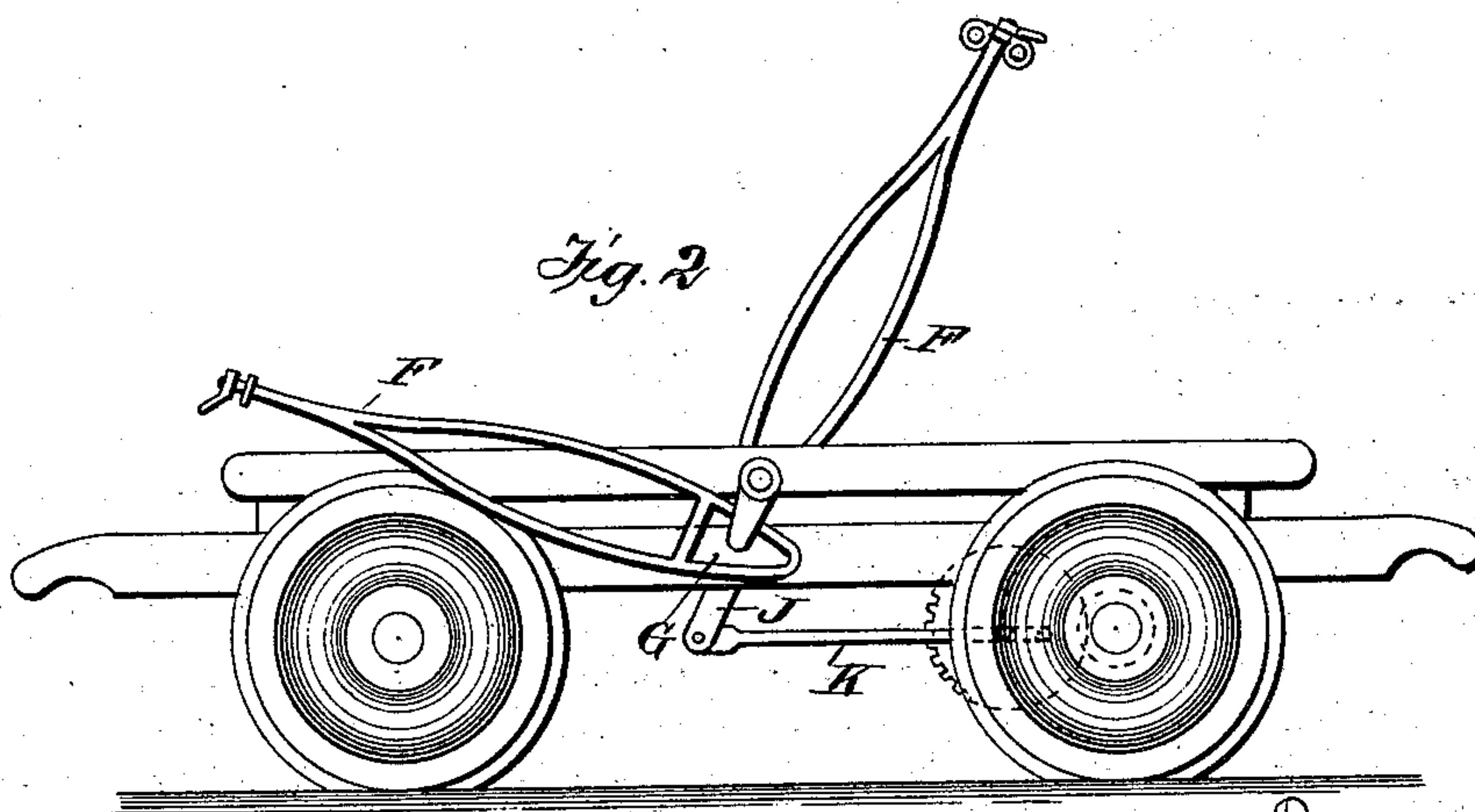
(No Model.)

2 Sheets—Sheet 2.

C. ROBERTS.
HAND CAR.

No. 455,577.

Patented July 7, 1891.



Witnesses:
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UNITED STATES PATENT OFFICE.

CYRUS ROBERTS, OF THREE RIVERS, MICHIGAN.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 455,577, dated July 7, 1891.

Application filed August 8, 1890. Serial No. 361,491. (No model.)

To all whom it may concern:

Be it known that I, CYRUS ROBERTS, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Hand-Cars, of which the following is a specification, reference being had therein to the accompanying drawings

10 This invention relates to new and useful improvements in hand-cars; and the object of the invention is to so construct a hand-car that it will have all the advantages of a so-called "push-car," the latter being generally
15 used on railroads for transporting material of all kinds in the construction and maintenance of the road-bed and track.

Hand-cars as at present constructed are not available for that purpose on account of
20 the more or less obstructing propelling mechanism, the propelling-levers of which especially interfere with the transporting, loading, and unloading of the material.

The prime object of my invention is to construct a car having levers projecting above the platform and detachably secured in position, whereby the platform may be cleared, in combination with a driving mechanism having formed therein a clutch, whereby when
30 the levers are in position and the clutch is engaged my car may be used as a hand-car, and whereby when the levers are detached and the clutch is disengaged the car may be used as a push-car.

35 To this end my invention consists, primarily, in the novel construction and arrangement of the propelling-levers, and, second, in the general arrangement of the propelling-gear, all as more fully hereinafter described, and shown
40 in the accompanying drawings, in which—

Figure 1 is a plan of a hand-car provided with my improved propelling levers and mechanism. Fig. 2 is a side elevation thereof, and Fig. 3 is a detached perspective view showing one
45 of the propelling-levers out of engagement with the propelling-shaft. Fig. 4 is a cross-section on line $x x$ in Fig. 1. Fig. 5 is a detail section through the connection of one of the side levers with the handle-bars. Fig.
50 6 is a detached perspective of the parts shown in Fig. 5. Fig. 7 is a detached side elevation

of a modified construction of the connection of a side lever with the drive-shaft.

A is the car-body, of the general construction employed for push-cars, and having the
55 platform B extending, preferably, intact over the top of the frame, which is provided with the handles C for lifting it off the track. Below the platform is journaled in suitable bearings transversely the car the drive-shaft D,
60 which projects beyond the sides of the platform and is provided at its ends with brackets or arms E, preferably of a wedge form, as shown.

F are propelling side levers detachably secured upon the brackets by means of apertures G, formed in the lower ends of the side levers, and into which the brackets tightly fit when the parts are in operative engagement, as in Fig. 4.

70 Instead of making the propelling side levers entirely disconnected from the brackets, I prefer to have each lever permanently attached to its bracket, so that it may be thrown out of engagement with its bracket and turned
75 out of the way—as, for instance, shown in Fig. 2, where one of the levers is shown resting with its free end upon one of the wheels, while the other is still connected to the bracket. In this position the lever is out of
80 the way for loading and unloading, while at the same time it is easily restored into position and saves the workmen the trouble of taking care of it when disengaged. Any means to obtain this end may be used. In
85 the drawings I show each lever engaged in a slot H; formed in the lower end of its bracket, and locked therein by a transverse pin H', which is secured to a spring H'', so that it may be entirely disengaged, if necessary, for
90 repair or otherwise.

The propelling-gear consists of a rock-arm J, secured near one end of the drive-shaft D and connected by a pitman K with a crank
95 L on the intermediate shaft M, which latter is suitably journaled below the platform of the car. This intermediate shaft M has a gear-wheel N, which engages with the pinion O on one of the axles. This pinion, which slides on the axle, is prevented from turning
100 when engaged by a suitable clutch or feather on the axle and is controlled by a lever P for

throwing it in or out of gear. The lever P preferably projects below one edge of the platform for the convenience of the workmen.

The two propelling-levers are detachably connected on top by a suitable handle in such manner that the handle is held in position by one lever alone if the other is detached. To this end I preferably use the following construction: The upper end of each lever terminates in a round pin *a*, with a shoulder or washer *b* at the base of the pin. On the head of the pin is engaged a clamping-nut *c*, which is prevented from being screwed off by rivet-heading the upper end of the pin. The clamping-nut is preferably provided with a conical seat *e* on its under side and with a handle *f* for turning it.

The handle is preferably composed of two handle-bars *I*, secured to the brackets *L* by means of sleeves *g*, through which the handle-bars project. Each bracket has a recess *h* for the pin *a* of the lever to engage into and to be clamped thereto by tightening the nut *c*. The levers *F* preferably incline inwardly to shorten the distance between the brackets, so that the handle-bars are amply strong without bracing, and also to permit of extending the handle-bars beyond the brackets, so as to afford a better hold for working the handles by a workman walking on the ground beside the car.

In practice, the parts being constructed as shown and described, it will first be observed that the whole platform is intact and available for carrying material thereon without interfering with the use of the propelling mechanism. Should it be required to load material, it will be seen that after disengaging one of the propelling-levers from the handle the lever may be slipped off the bracket *E* and turned out of the way, so as to permit loading the car with ties or other bulky material with the same facility as with a push-car, and when the car is loaded the propelling-lever may then be readily restored into operative position. At the place where it is desired to unload the workmen propelling the car may disengage the propelling-lever on the side on which it is intended to unload, and after the unloading is accomplished they may either restore the propelling-lever into position or, if they only want to go a little distance—as where ties have to be strung along the road at short distances apart—they may proceed with the help of the propelling-lever still in position. Each propelling-lever when disengaged from its bracket may be rested upon one of the wheels, and thus save the workmen the trouble of dismounting in restoring it.

Should anything prevent the use of the propelling mechanism, the workmen may throw the propelling mechanism out of gear by means of the lever *P*, (which has a suitable locking mechanism,) and thus push the car along the track in the usual manner of proceeding with a push-car.

An especial advantage of my construction is the easy manner with which the propelling-levers *F* may be mounted and dismounted from the brackets to permit loading and unloading, so that my hand-car, while affording the same facilities as a push-car for transporting material, has the added advantage of the propelling mechanism, the use of which will be welcome to workmen whenever available.

In a patent granted to me June 10, 1890, No. 429,962, I have shown a hand-car in which there are side levers detachably secured to the ends of an oscillating drive-shaft, and therefore I do not broadly claim this construction; but what I want to claim is the improvement thereon of having the side levers separately detachable, so that one can be used, and, further, of having the side levers connected to their brackets in such a manner that they may be readily detached therefrom and then turned down below the level of the platform or folded against the sides of the car, so as to be out of the way and again easily restored into position, thus saving the workmen the trouble of taking care of either the levers or of the handle, which latter is firmly held by one lever alone.

By means of the shifting-lever the propelling mechanism may be thrown out of gear, and the car may be pushed along even if the propelling-levers should be held fast by the load.

The brackets are made of such suitable form that when the levers are slipped over the same they become firmly bound and have no lost motion or any tendency to become loose or rattle. This is very easily accomplished with proper workmanship by the construction described, and to prevent lateral motion stops are placed on the brackets, against which the levers firmly rest.

The spirit of my invention in relation to the side levers consists, broadly, in making the side levers independently detachable from the connecting-handle and from the drive-shaft, so that either side of the platform may be disclosed for loading or unloading while the lever on the other side is still in operative engagement with the drive-shaft. Specifically, my invention further consists in having one end of each (preferably the lower one) loosely attached, so that the lever may be turned or folded out of the way to save the trouble of taking care of it and in restoring it and to do away with the liability of mislaying or losing it. While I have only described and shown the levers connected in this manner to the drive-shaft, it is obvious that they may be made to disconnect entirely from the drive-shaft and be provided with some suitable connection with the handle, whereby they may be turned or folded out of the way, and I have made such constructions the subject-matter of other applications.

In Fig. 7 I show a modified construction of the means for connecting the lower end of

each side lever to its bracket on the drive-shaft. In this modification the lower end of the side lever engages into a slotted eyebolt *o*, which is secured in the bracket. The slot *m* in the eyebolt is of restricted size, and a reduced portion *n* is formed on the lever, whereby any accidental disengagement is prevented, while at the same time the lever, if desired, may be disengaged by registering the reduced portion *n* of the lever with the slot in the eyebolt and drawing it out.

An important part of my invention (the object of which is, broadly, to make a combined hand and push car) consists in providing the propelling mechanism with means for disconnecting from the axle. No matter how the propelling mechanism is constructed it may happen, if the load is bulky, that it not only deprives the workmen of the necessary room to work the levers, but that it interferes with the free play of the levers or with the cross-bar, so that the car cannot even be pushed. For such a contingency I provide the sliding pinion on the axle or any other suitable clutch or means for the purpose of disconnecting the propelling mechanism from the axle, and this may be either adjusted by hand or a hand-lever may be provided for it, as described heretofore. In connection with my side levers there is an especial advantage in thus disconnecting the propelling mechanism, as it permits of using the levers as side stakes to hold, and as in disconnecting them from the drive-shaft they fall away to the outside they cannot interfere with the unloading.

What I claim as my invention is—

1. In a railway hand-car, a propelling mechanism having a drive-shaft journaled transversely the car and extending to the sides thereof, and two propelling side levers connected to the ends of said shaft for actuating the same and having their upper ends connected by a handle, said levers being connected to said drive-shaft and handle and being independently detachable, substantially as described.

2. In a railway hand-car, a propelling mechanism having a drive-shaft journaled transversely the car and extending to the sides thereof, two propelling side levers having independently-detachable connection at their upper ends to a handle and at their lower ends to the ends of the drive-shaft, and means whereby each lever may be turned out of the way and supported at one end, substantially as described.

3. In a railway hand-car, a propelling mechanism having a drive-shaft journaled transversely below the car and provided with brackets on the sides of the car, two propelling side levers provided with apertures at their lower ends for detachably engaging with said brackets, and a handle-bar to which the upper ends of said levers are separately detachably connected, substantially as described.

4. In a railway hand-car, a propelling mechanism having a drive-shaft journaled transversely below the car and extending to the sides thereof, brackets secured to the ends of said drive-shaft; propelling side levers detachably engaging said brackets by means of apertures formed in the lower ends of said levers, and a permanent connection between said brackets and the lower ends of the said side levers, whereby the latter remain attached to the brackets when disengaged therefrom, substantially as described.

5. In a hand-car, the combination, with a propelling mechanism having actuating-levers extending above the platform, of intermediate driving mechanism between said levers and one of the axles, and a clutch on the axle for throwing the driving mechanism in and out of gear with the axle, substantially as described.

6. In a railway hand-car, a platform, a propelling mechanism having an oscillating drive-shaft journaled transversely below the platform and extending to the sides of the car, two propelling side levers engaging with the ends of said drive-shaft for actuating the same and being inwardly inclined toward the center of the car, and a handle connecting the upper ends of said side levers and projecting beyond the point of connection to the sides of the car, substantially as described.

7. In a railway hand-car, the propelling mechanism having the oscillating drive-shaft journaled transversely the car and extending to the sides thereof, the brackets *E*, secured to the ends of the drive-shaft, the propelling side lever *F*, engaging said brackets by means of apertures *G*, formed in their lower ends, the handle bar or bars *I*, and the brackets *L*, in which the handle-bars are secured and to which the upper ends of the side levers are detachably clamped, substantially as described.

8. In a railway hand-car, the propelling mechanism having the oscillating drive-shaft journaled transversely the car and extending to the sides thereof, the propelling side levers detachably engaging with the ends of said drive-shaft, the handle bar or bars *I*, the brackets *L*, in which said handle bar or bars are secured, the recesses *h* in said brackets, the pins *a* on the side levers, adapted to engage into said recesses, and the clamping-nuts *c* for detachably securing the side levers to the brackets, substantially as described.

9. In a railway hand-car, the propelling mechanism having the oscillating drive-shaft journaled transversely the car and extending to the sides thereof, the wedge shaped brackets *E*, secured to the ends of said drive-shaft, the propelling side levers provided with apertures *G* for detachably engaging said brackets, and the slots formed in the lower ends of said brackets and in which the side levers are supported, substantially as described.

10. In a hand-car, the combination, with the propelling mechanism having actuating-le-

vers extending above the platform, of intermediate driving mechanism between the levers and one of the axles, a clutch on one of the axles for throwing the driving mechanism
5 in and out of gear with the axle, and a hand-lever for actuating the clutch from the platform, substantially as described.

11. In a hand-car, the combination, with the propelling mechanism extending above the
10 platform, detachably secured in position to clear the same, of intermediate driving mech-

anism between said actuating mechanism and one of the axles, a clutch in said driving mechanism, and a lever for actuating said clutch, whereby the car may be used as a
15 hand or push car.

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

CYRUS ROBERTS.

Witnesses:

M. B. O'DOGHERTY,
JAMES WHITTEMORE.