

April 9, 1946.

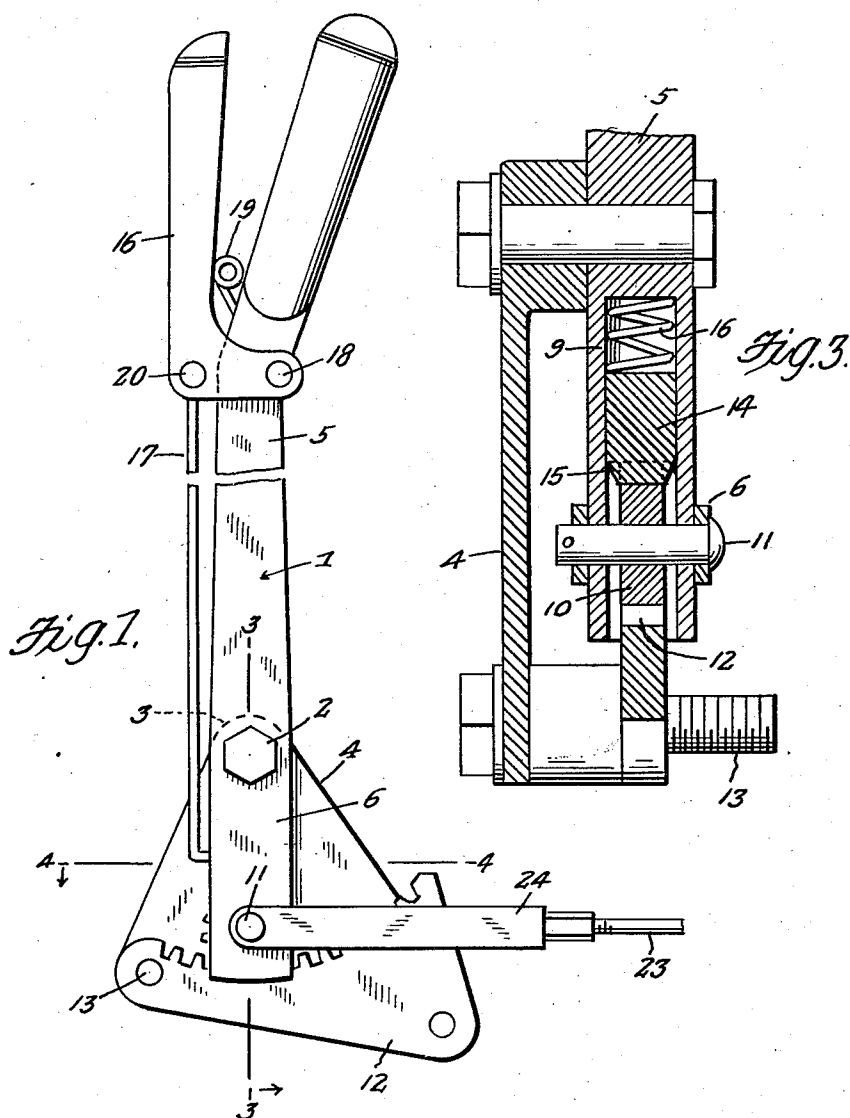
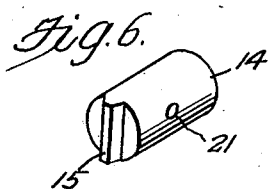
C. I. PHELPS

2,397,981

DETENT

Filed Oct. 19, 1944

2 Sheets-Sheet 1



Inventor

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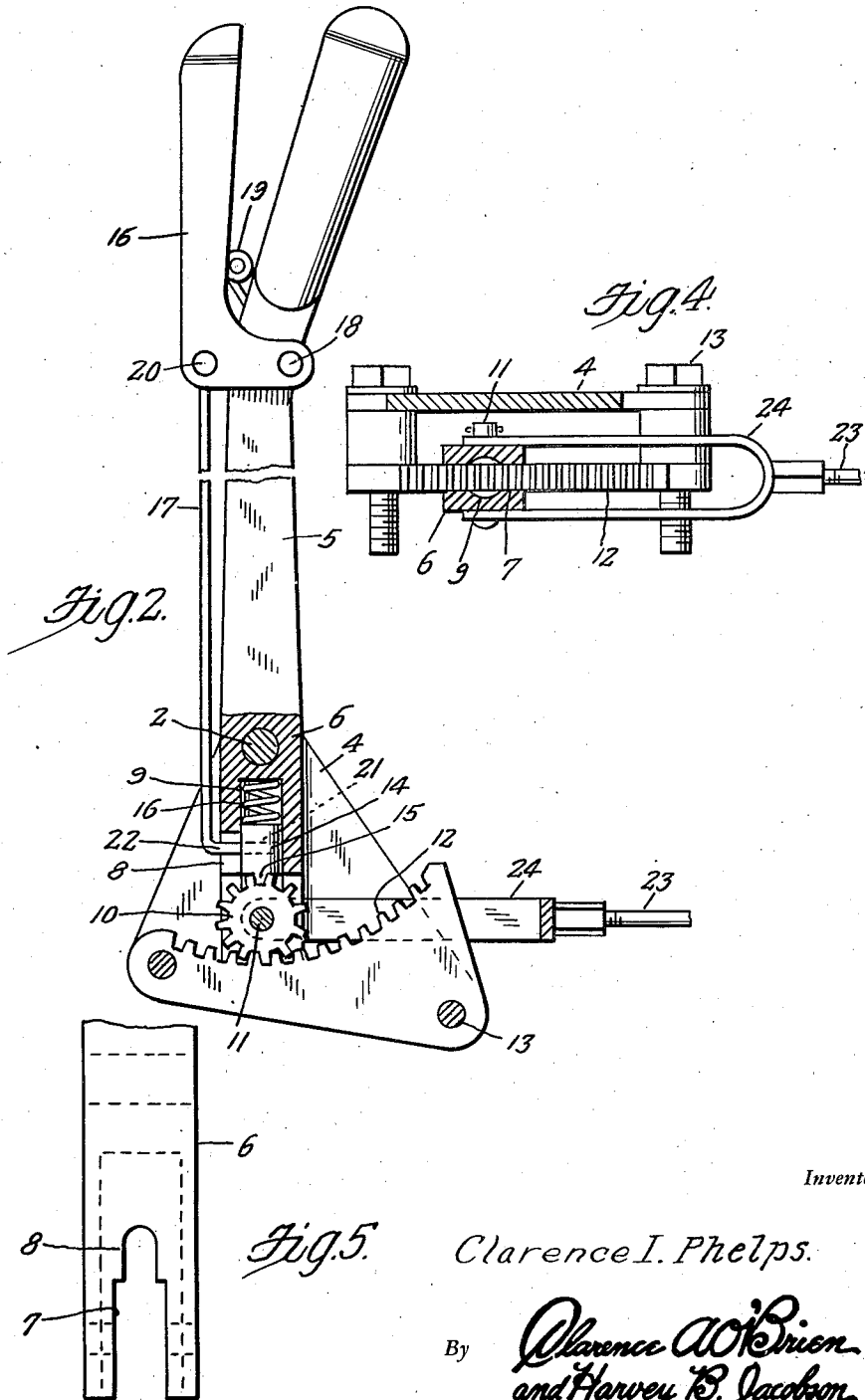
C. I. PHELPS

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DETENT

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,397,981

DETENT

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of one-half to William D. Payne, Bellingham,
Wash., and one-half to Abraham C. Pelland,
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Application October 19, 1944, Serial No. 559,395

3 Claims. (Cl. 74—530)

My invention relates to improvements in detents for operating and control levers, and particularly the type of detent disclosed in U. S. Letters Patent No. 2,296,694, dated September 22, 1942.

The invention is designed with the primary object in view of providing a brake lever for trucks and the like equipped with a positive locking detent of simplified construction and arrangement of parts, as compared with the detent of said patent, and with the major operating parts on the lever built into the same for protection, economy in space, and compactness of assembly.

Another object of the invention is to reduce the number of parts and otherwise lower the cost of manufacture without sacrificing operating efficiency.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description, and defined in the claims appended hereto.

In said drawings:

Figure 1 is a view in side elevation illustrating my invention in the preferred embodiment thereof,

Figure 2 is a similar view, partly broken away and shown in section,

Figure 3 is a view in vertical section taken on the line 3—3 of Figure 1 and drawn to an enlarged scale,

Figure 4 is a view in horizontal section taken on the line 4—4 of Figure 1 and drawn to a further enlarged scale,

Figure 5 is a fragmentary view in edge elevation of the short lever arm of the brake lever, and

Figure 6 is a view in perspective of the lock bolt.

Referring to the drawings by numerals, according to my invention, a brake lever 1 is pivoted adjacent the lower end thereof by a bolt 2, in upstanding position on what constitutes the upper corner 3 of a triangular supporting plate 4, and whereby said lever is provided with a long lever arm 5 and a short lever arm 6, the latter below the bolt 2 and swingable alongside the supporting plate 4. The lower end of the short lever arm 6 is provided with a coplanar bifurcation 7 therein, an edge notch 8 above the bifurcation 7 and is longitudinally bored above the bifurcation 7 to provide a cylindrical socket 9 in the arm 6.

A small gear pinion 10 is rotatably mounted in the bifurcation 7 by means of a stud 11 extending through said short lever arm 6, said

pinion 10 meshing with a toothed, concave detent plate 12 secured by bolts 13 to the lower corners of the supporting plate 4 beneath said pinion 10.

A cylindrical lock bolt 14 is slidably mounted in the socket 9 for vertical movement therein and provided at its lower end with a single tooth 15 adapted to mesh with teeth of said pinion 10. A coil spring 16 in the socket 9 backs the lock bolt 14 and urges the tooth 15 into meshing relation with the teeth of the pinion 10.

For disengaging the tooth 15 from the teeth of the pinion 10, the usual detent release hand grip 16 is utilized together with the usual detent release rod 17, the hand grip 16 being pivoted on the long lever arm 5, as at 18, and backed by the usual spring 19, the detent rod 17 being pivoted to said hand grip, at one end, as at 20. In the present instance, the lower end of the detent release rod 17 is bent at a right angle and inserted through the notch 8 into a suitable transverse bore 21 in the lock bolt 14, said right angled end 22 of the detent release rod 17 fitting in said notch 8 to be guided thereby.

The brake operating rod 23 is provided with a forked end member 24 straddling the detent plate 12 and the lower end of the short lever arm 6, said member being pivotally connected to said arm by the aforementioned stud 11.

As will be readily understood, the brake lever 1 is normally locked by the described detent devices, since the spring 16 urges the tooth 15 of the lock bolt 14 into engagement with the gear pinion 10 on one side thereof, and said pinion meshes with the teeth of the detent plate 12 on the other side thereof. To unlock the described detent devices, and the lever 1, it is merely necessary to retract the lock bolt 14 in the socket 9 by operation of the hand grip 16 and detent release rod 17, so that the toothed pinion 10 may roll along the teeth of the detent plate 12.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. In combination, a support, a lever pivoted intermediate the ends thereof on the support to provide a lever arm swingable alongside the support, said arm having a bifurcated end, a detent plate fixed to said support and having a concave toothed edge straddled by said bifurcated end of

the arm, a toothed pinion rotatably mounted in said bifurcated end of the arm to roll along the teeth of said edge in mesh therewith and permit said arm to be swung, means to lock said pinion against rotation incorporated in said arm and enclosed thereby and including a retractible lock bolt, and means to retract said bolt comprising a swingable hand grip on said lever, and a rod operatively connecting said grip to said bolt.

2. In combination, a support, a lever pivoted intermediate the ends thereof on the support to provide a lever arm swingable alongside the support, said arm having a bifurcated end, a detent plate fixed to said support and having a concave toothed edge straddled by said bifurcated end of the arm, a toothed pinion rotatably mounted in said bifurcated end of the arm to roll along the teeth of said edge in mesh therewith and permit said arm to be swung, means to lock said pinion against rotation incorporated in said arm and enclosed thereby and including a retractible lock bolt, and means to retract said bolt comprising a swingable hand grip on said lever, and a rod

operatively connecting said grip to said bolt, said arm having an axial socket therein housing said bolt and in which said bolt is slidable for retraction, said rod being operatively connected to said bolt through one edge of said arm.

3. In combination, a support, a lever pivoted intermediate the ends thereof on the support to provide a lever arm swingable alongside the support, said arm having a bifurcated end, a detent plate fixed to said support and having a concave toothed edge straddled by said bifurcated end of the arm, a toothed pinion rotatably mounted in said bifurcated end of the arm to roll along the teeth of said edge to mesh therewith and permit said arm to be swung, means to lock said pinion against rotation incorporated in said arm and enclosed thereby and including a retractible lock bolt, means to retract said bolt comprising a swingable hand grip on said lever, a rod operatively connecting said grip to said bolt, said lock bolt having a single end tooth for engaging the teeth of said pinion.

CLARENCE I. PHELPS.