

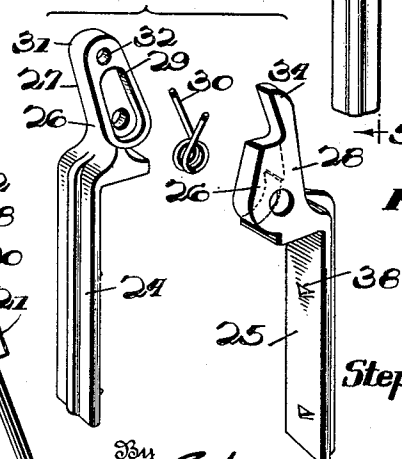
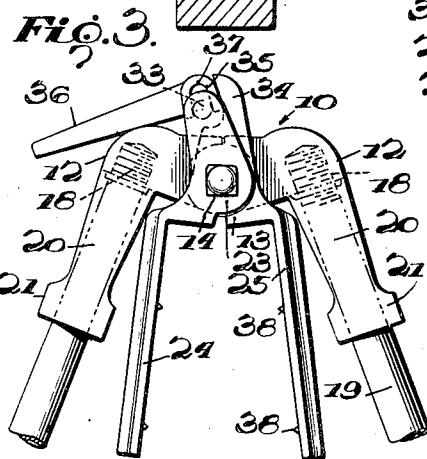
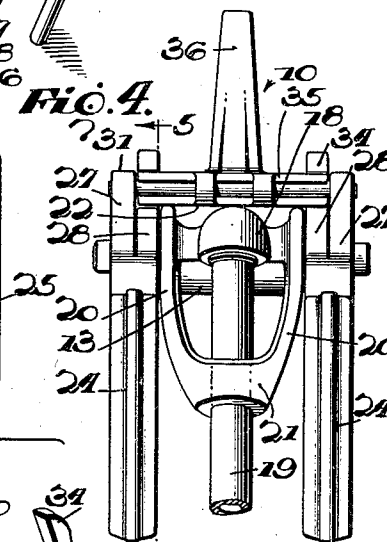
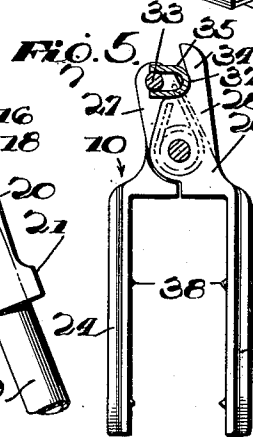
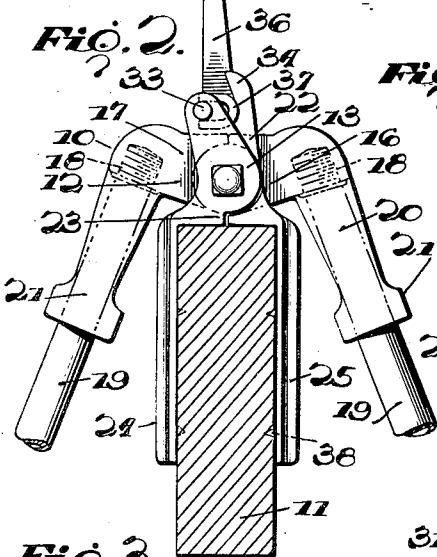
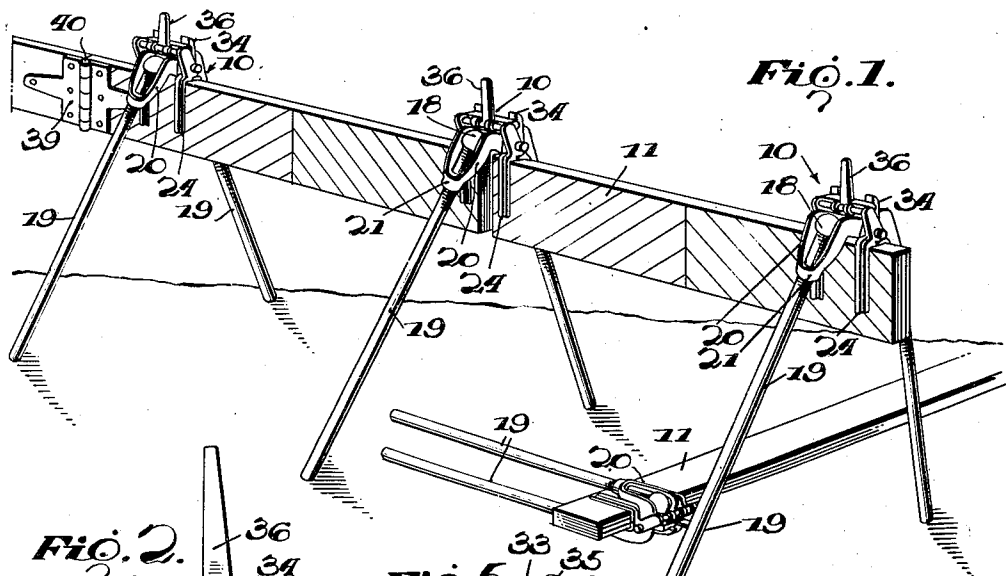
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HIGHWAY BARRICADE SUPPORT

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HIGHWAY BARRICADE SUPPORT

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6 Claims. (Cl. 256—64)

The invention relates to means for mounting portable barricades, signs and the like, and has for an object to present such an article specially valuable in providing traffic barricades or fences, such as are used to mark the closing of a street for repair or other reasons, for guarding excavations, so that persons will be warned of their proximity thereto and stopped; for demarking automobile parks, and gun parks, or specially restricted areas; for defining traffic lanes, or for supporting signs, notices, and other uses.

An important object of the invention is to present a novel construction in a fitting intended to enable the mounting of a board fence, sign or the like quickly and which may be quickly taken down and detached from the board when desired, for compact storage or transportation.

It is an aim of the invention to present a multipod support, the legs of which will automatically close when it is knocked over, so that it will present no dangerous obstruction to vehicular or pedestrian traffic. Another aim is to present such a device which will readily accommodate itself to great inequalities and irregularities of surface, so as to have great stability, and will not require a flat surface for the secure erection of a barricade on a four point bearing.

It is also an aim to enable the adjustment of the legs angularly with respect to the normal vertical plane of the barricade or sign, yet providing proper limitation of the adjustment within safe limits.

An important aim of the invention is to present such leg adjustment and detachable mounting of the barricade board, sign or other part, and at the same time enable independent swinging movement of such mounted part so that it may respond to air currents, minimizing liability of upset of the assembly by such air currents by absorbing motion transmitted abruptly to the board, and by inclination of the board on its pivot so that it offers less resistance to wind pressures.

Another object is to present such a device which may be quickly assembled without the use of tools using standard lumber, and in which the board may be renewed or replaced and interchanged quickly without skilled labor or tools.

It is an aim to present a barricade device which will be highly effective as to visibility, yet will afford a minimum obstruction of ground space thereunder, and adjacent working space or of light to engineering operations, and will permit ready observation of operations and objects back of the barricade.

In the field of traffic guards and barricades, it is an important aim to present such a device which will support a simple horizontal board in such manner as to afford a minimum liability of upset or injury by collision of vehicles therewith by its inherent capability of absorbing shocks, and motion of colliding objects. Also it is an important aim to present such a device which when upset and run over by a vehicle will be liable in a minimum degree to damage. In this connection it is a special aim to so arrange the structural parts that the heaviest and strongest elements are adapted to sustain the weight of a vehicle in such manner that more frail parts are protected.

It is also an important aim to so design the article that liability of injury to colliding vehicles will be reduced to a minimum, both by reason of its collapsing action, and also by reason of its extremely light weight and small inertia involving a minimum impactive effect upon colliding bodies.

Another object is to present such a device which will have a special function in end-wise collisions, adapting the device to collapse end-wise under a predetermined excess of force bearing upon one end, yet affording a good endwise stability for normal service, without loose play or liability of collapse, ordinarily.

It is an important aim to present such a mounting which will consist of few parts and involve few tooling and/or assembly operations, which may be produced principally from simple castings and at a low cost, and will afford a ruggedly durable article.

Another important consideration is to present such a barricade which will be liable in a minimum degree to disturbance by vibration and rocking of supporting floors. This is of importance in many construction operations where temporary loose-board floors and roads are provided.

A still further object is to present such a mounting in which the swinging and pivoted parts and spring-load devices are so enclosed and constructed that they are liable in a minimum degree to access of dust and dirt that would wear or impede movement of the parts.

It is a yet further aim to provide a novel leg mounting for iron pipe legs.

Additional objects, advantages and features of invention reside in the construction, arrangement and combination of parts involved in the embodiment of the invention, as will appear from

the following description and accompanying drawing, wherein

Figure 1 is a perspective view of an erected barricade embodying my invention.

Figure 2 is a cross section thereof.

Figure 3 is a view of one of the leg units with the board released and removed.

Figure 4 is a side elevation of one of the leg units detached.

Figure 5 is a cross section of one of the units showing the spring mounting of the board clamping fingers.

Figure 6 is an exploded view of one set of clamping fingers.

There is illustrated a barricade device which includes two or more sets of leg mountings 10, carrying a "board" 11, to which they are secured in such manner that the board gives longitudinal rigidity to the assembly, while each of the leg units—when its legs are set upon the ground—constitutes a transverse rigid truss in which the board is pivotally swung.

Each of the leg units is identical with the others, and one will be described. It consists of a support head including two cast steel leg-receiving socket pieces 12, each formed with upper heavy hinge knuckles 13 forming a continuous hinge across the top of the joined socket pieces by means of a hinge bolt 14 engaged therethrough and projecting a distance on each side to hingedly and pivotally support two pairs of board clamp fingers, to be described, one at each side of the leg sockets. The socket pieces may be termed leg castings, and are formed with oppositely extending body portions 16 and 17 respectively, each including the interiorly threaded socket 18 offset from the vertical plane of the head and opening downwardly so as to receive the standard, threaded pipe section 19 which constitutes the leg. At each side of this socket piece integral yoke arms 20 are formed, offset like the sockets so that a proper clearance is afforded therebetween for purposes which will appear, these arms extending downwardly parallel and besides the pipe 19 a suitable distance, where they are connected by an integral collar 21 closely fitted around the pipe at a distance from the socket so as to support and brace the leg pipe in rigid relation to the socket without strain of the threaded end of the pipe and guarding against breakage due to weakening of the pipe by deep threading. Each casting is formed at the upper side with a heavy shoulder 22, the two shoulders arranged to come into abutment by divergent pivotal movement of the castings on the bolt 14 when the legs 19 are set at the desired angle determined as most suitable for effective support of the board in the uses contemplated. This angle may be varied for different uses, if desired. For ordinary street barricades and excavation guards the angle has been approximately forty-five degrees.

At each side of the leg castings there are respective pairs of board clamping fingers 24 and 25, each finger having a knuckle part 26 offset and pivoted on the respective end of the bolt 14 with the two fingers in aligned opposed relation and the fingers offset from a lower radius of the pin so that they may readily be brought together against opposite faces of a board 11, as in Figure 2. The knuckle of finger 24 is formed with an upwardly extended arm 27, while the knuckle of the finger 25 is provided with an arm 28. These and the respective knuckles are both similarly recessed on the abutting sides, as at 29,

so that a helical spring 30 may be enclosed therein by the two recesses, the spring engaged around the bolt 14, and having respective arms at the ends, one in each recess, and bearing against the side of the recess so as to tend to press the arms 27—28 inwardly over the board and tend to cause the fingers 24—25 to separate. The arm 27 of each pair of fingers is formed with an end portion 31 outward of the recess 29, having an opening 32 therethrough, and in the openings of the two arms at opposite sides of the leg castings a spring steel pin or shaft 33 is fixed. By forming the shaft 33 of spring steel there will be sufficient flexibility to allow for difference in the thickness of boards and to provide a constant tension on the fingers 24 and 25 when engaged upon a board. The two pairs of clamping fingers are formed as rights and lefts, so that in each pair the knuckle arm 27 is at the outer side of the assembly. The shaft 33 thus extends across the knuckle of the arm 27 and its extension. The arms 27 and 28 are inclined so that when the fingers 24 and 25 of each pair are in clamping position the arms 27 and 28 extend divergently outward, increasing the torsion on the spring 30, and the ends of the latter tend to move the arms inward toward each other. On the arms 28 there are longitudinal cam extensions 34 offset somewhat away from the cam shaft 33, and revoluble on the shaft there is a cam bar 35, having an operating handle 36 extending outwardly therefrom. The cam has a deep lobe 37 which receives the shaft 33 and presses against the cam extensions 34 to hold the fingers in clamping position against the board, and when in this position the handle extends approximately in the vertical medial plane of the space between the fingers 24 and 25. The fingers are substantially rectilinear longitudinally and have flat inner faces provided with two or more longitudinally spaced blunt spurs or nibs 38 adapted to be embedded in the faces of a board interposed between the fingers, when the handle lever 36 is moved to clamping position. In the ordinary embodiment, the fingers 24 and 25 are so positioned as to forcibly clamp a standard so-called two-inch plank, which customarily measures in the neighborhood of one and three-quarters inches in thickness, but if desired, their arrangement may be varied to take thinner or thicker material.

By reason of the arms 27 and 28 being in close abutment, the recesses 29 are always completely closed and no dirt can gain access thereto. The bolt 14 is headed at one side of the assembly and may have a nut at the other end by which the units on the bolt are pressed close together, leaving them free however, for ready relative pivotal movement.

While not essential, the clamp fingers 24—25 are also formed with shoulders 23 at their lower sides which come into abutment when the fingers are moved to a determined inner limit, at which they are approximately on parallel axes. At this position the major transverse measurement of the head from the outer part of the arms 20 at one side to the corresponding face of the opposite arms, and between the outermost parts of the collars 21 is materially less than four inches. These being the greatest lateral extensions of the head, it will be appreciated that when an assembled barricade is laid on the ground as when upset, vehicles may readily pass thereover, and men and horses pass readily, without impedance or likelihood of damage or injury.

In the use of the invention, the head being assembled as described, suitable lengths of pipe are cut and threaded to form the legs 19 and these may be screwed by hand into the sockets 18, after which the unit is set on its feet and a board 11 lifted between the legs at right angles to the longitudinal axis of the board while the fingers 24—25 are in released position. As soon as the board end is brought between the fingers, it is held as snugly as possible in the bight between the fingers 24—25, while the handle 36 is operated to press the fingers together upon the board. This secures the board in place, and the fingers being approximately four inches long and the spurs spaced well apart longitudinally, the board is securely held against vertical pivotal movement between and relatively to the fingers themselves. When two leg units are so engaged with a board, this will impart ample longitudinal stability against collapse. The barricade being thus completely assembled, it may be set up on any ground surface where required. When this surface has irregularities or different slopes the two legs of one unit may be rotated, one unit relatively to another, as required to permit their ends to rest properly on the different surfaces. It will be understood that with the legs of a unit fully spread, the two may be moved pivotally as a unit with respect to the board to accomplish these adjustments. Two leg units may be found ordinarily sufficient for a single plank, but three or more may be applied to the plank as may be decided.

If desired, the ends of planks may be provided with hinge ears 39 the knuckles of which may be intermeshed to receive a removable pin 40, so that a continuous inter-fastened fence chain may be formed suitable for bounding any shaped area, and making the guard extremely difficult to overturn. Great security against upset may also be attained by using a series of plank units connected end to end in this manner and arranged in zig-zag relation, each plank having two or more leg units attached thereto, or alternate planks having one leg unit, or no directly attached leg unit, and being supported at its ends by the next plank, which should have two or more leg units thereon.

With the device thus used, the suspended plank of an ordinary barricade unit consisting of one plank and its attached leg units is free to swing between the legs, and in case of a sudden gust of wind the plank will be moved on its pivot to a material distance before any material force is effective tending to move the leg units pivotally on the extremities of the legs at one side. Even when the board has swung to its limit where it rests against one of the legs, it will then be so inclined that the resultant of the wind pressure against the board in a horizontal direction will be so much lessened that a much greater wind speed will be required to upset the device, than would be required if the board were held rigidly in the leg unit without possibility of the pivotal movement.

In the setting up of barricades, the boards suitably painted with distinctive markings or bands as common in such barriers, may be distributed along the line upon which they are to be erected, and the proper number of leg units dropped along the same way, and a single workman may then erect the whole line of barricade without other aid by setting up and steadying a leg unit in one hand while the end of a board is raised thereunder and attached as hereinbefore

described. He can also make the necessary end connections, where such a chain barricade is required. Two men can also work together at respective ends of the board, attaching two leg units at a time. The heads and legs assembled are comparatively light, and a workman can readily carry four of the leg units and a shovel or other additional material. The cam and handle piece and each of the other parts described, excepting the bolt 14 and springs 30 have been successfully formed by casting. The hinge knuckles of the leg castings being continuous, and the clamp fingers being held close against the sides of the leg castings, knuckles, as well as against each other, and the ends of the bolt carrying the head and nut, the shaft portion of the bolt is completely enclosed, so that access of grit thereto is reduced to a minimum.

When a barricade unit is upset, the leg projecting at the upper side will quickly fall by gravity into close relation to the lower one so that no part will extend more than four inches above the surface of the ground upon which it falls.

While the spurs of the clamp fingers hold the board 11 with ample firmness, if an automobile strikes the barricade end-on, the fingers 24—25 may slip on the faces of the board and so allow the barricade to collapse without breaking the lugs, the leg castings or other parts of the unit, and also minimizing damage to the colliding vehicle. If, instead of the short, blunt spurs shown, longer, sharper spurs are used, greater resistance to longitudinal collapse may be secured.

It should be noted that the cam shaft is fitted fixedly in the extensions 31, so that the two sets of clamp fingers are thereby held securely in alinement, insuring that a board may always be readily engaged commonly in the two clamps of each unit without interference by lack of alinement.

I claim:

1. A clamping device for the uses described consisting of opposed fingers pivoted at their bases and adapted to coengage against opposite sides of a board or the like interposed, the pivot of the fingers including integral knuckle parts positioned side by side and each having a part extended beyond the pivot opposite the fingers, the knuckle parts being recessed in their lateral abutting faces to form a chamber, a spring set in said chamber having oppositely acting arms bearing against sides of respective recesses tending to move the parts in opposite directions for release action of the fingers, said extensions having a revoluble cam device interposed therebetween and having an operating handle exposed for manipulation, and being constructed and operative to move the fingers in opposition to the spring for clamping action.

2. The structure of claim 1 in which two spaced apart clamping devices of identical structure are provided, pivoted on a common shaft, said cam being a single element extended through both devices, and leg socket members having hinge knuckles between the two clamping devices pivoted on the same said shaft, freely movable with respect to each other and with respect to said clamping devices.

3. A barricade support comprising a pair of relatively pivoted legs, means to limit their relative pivotal movement, a board mounting pivoted independently between the legs adjacent their pivot, said board mounting including relatively pivoted fingers separable to receive a board

therebetween, and cam means to lock the clamp fingers in engagement with a board.

4. A device of the character described comprising a pair of relatively pivoted legs, means to limit their relative pivotal movement, the pivot of the legs including knuckle elements having a pintle therethrough, a board mounting pivoted on the pintle having clamping fingers beside the knuckle elements and having upward projections, a cam revoluble between the projections and having an operating handle.

5. The structure of claim 3, in which said legs include head elements consisting of two hingedly connected knuckle elements each having an interiorly threaded socket, a pipe having a thread-

ed end screwed into each socket forming said leg proper, and each said member having a collar portion spaced axially beyond the socket and engaged around the pipe in supporting relation.

6. The structure of claim 3 in which said legs include head elements consisting of two hingedly connected knuckle members, each having an interiorly threaded socket, a pipe having a threaded end screwed into each socket forming said leg proper, and said knuckle members having also side arms extended beside the pipe and a collar fixed at their extremities engaged around the pipe a substantial distance from the socket in supporting relation to the pipe.

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