

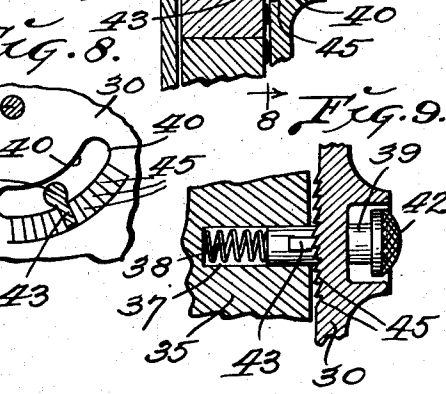
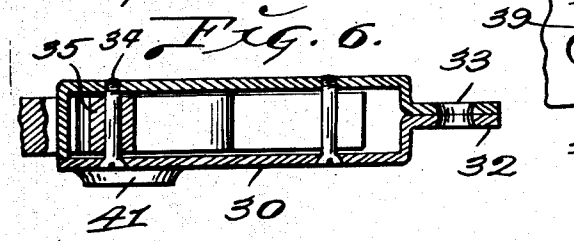
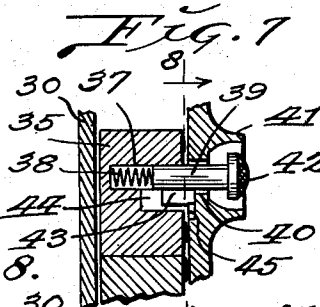
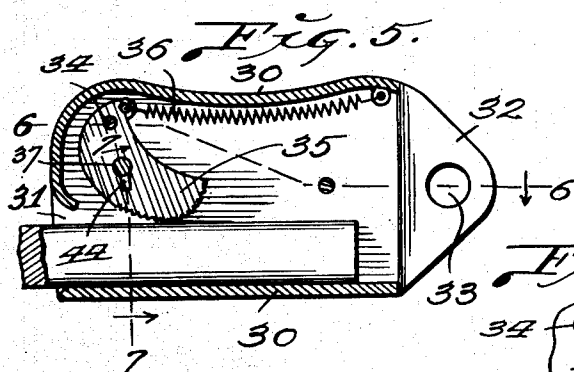
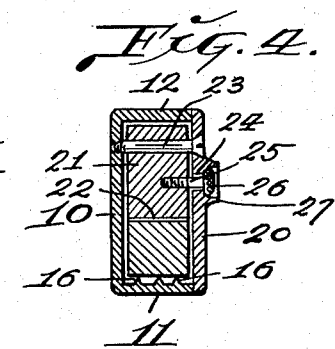
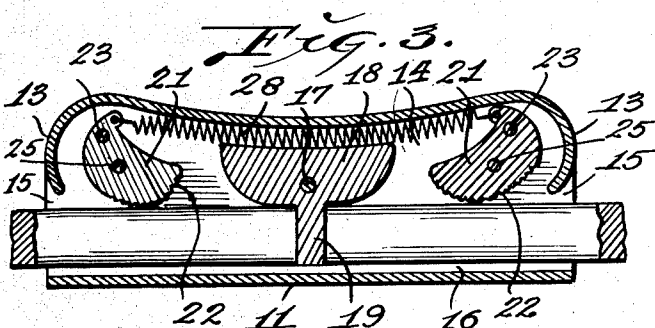
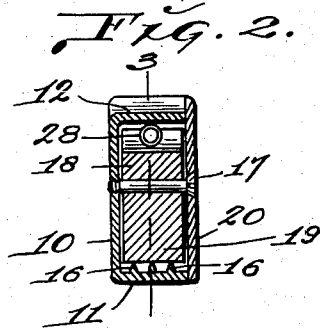
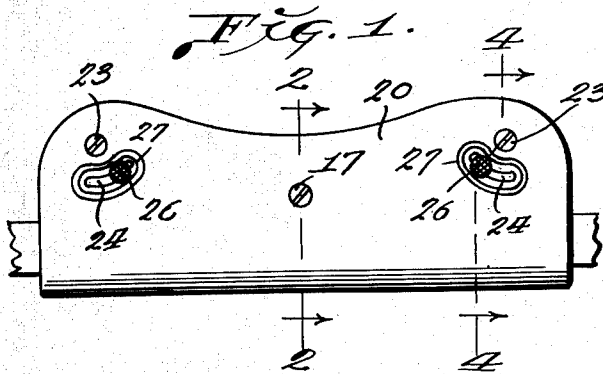
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2,387,436

WIRE OR ROD CONNECTOR AND CLAMP

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2,387,436

WIRE OR ROD CONNECTOR AND CLAMP

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5 Claims. (Cl. 287—83)

My invention relates to a device for the rapid and effective connecting of wires, rods, cables, tubes and the like, and the particular construction herein illustrated, described and claimed is an improvement on the connector covered by United States Letters Patent 2,187,230 issued to me January 16, 1940, also Letters Patent 2,314,579 issued to me March 23, 1943.

The principal objects of my present invention are to generally improve upon and simplify the form of connectors described in my aforesaid patents as well as other existing forms of quick acting rod and wire connecting devices, and further, to provide a simple, practical and inexpensive connector which is constructed so as to effectively perform its clamping and connecting functions without the requirement of screws, bolts, binding posts and the like.

A further object of my invention is to provide a wire or rod connector of strong substantial structure capable of being readily assembled or taken apart so as to facilitate inspection and replacement or interchange of parts, and likewise capable of being easily and quickly applied to or removed from the adjacent ends of wires, rods, cables and the like.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully described and claimed, and illustrated in the accompanying drawing in which:

Fig. 1 is a side elevational view of a connector constructed in accordance with my invention.

Fig. 2 is a cross section taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical longitudinal section taken on the line 3—3 of Fig. 2.

Fig. 4 is a cross section taken on the line 4—4 of Fig. 1.

Fig. 5 is a sectional view taken lengthwise through the center of a connector for engaging a single rod, wire, cable or the like.

Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 5.

Fig. 7 is an enlarged detail section taken on the line 7—7 of Fig. 5.

Fig. 8 is a detail section taken on the line 8—8 of Fig. 7.

Fig. 9 is an enlarged detail section showing a ratchet and pawl arrangement between the clamping member of the connector and the side wall of the housing therefor.

Referring by numerals to the accompanying drawing, and particularly to the construction

illustrated in Figs. 1 to 4 inclusive, 10 designates one of the side walls of the housing which is preferably formed of sheet metal with its lower portion bent at right angles to form a bottom wall 11 and extending at right angles from the upper edge of the side wall is a top wall 12. The end portions of top wall 12 are extended downwardly part-way toward the ends of the bottom wall 11, as designated by 13, thus forming a chamber 14 in the upper portion of the housing and with openings 15 between the lower ends of the end walls 13, and the ends of the bottom wall 11 for the accommodation of the wires, rods or cables that are connected by the device. Formed on the upper face of the bottom 11 is a plurality of longitudinally disposed ribs 16 which are of inverted V-shape in cross section.

Suitably secured in the central portion of chamber 14 by means of a screw 17 or otherwise is a block 18, and depending from the center of said block is a lug 19, the lower end of which rests on the central portions of the ribs 16.

Detachably secured to the housing comprising the walls 10, 11 and 12, preferably by screw or fastening device 17, is a front wall or cover plate 20 which closes the chamber 14 within the housing. Arranged within the end portions of chamber 14 between block 18 and end walls 13 are gripping and clamping members 21 preferably metal blocks having curved under faces 22, which are ribbed or corrugated transversely so as to form rod gripping faces, and these blocks are pivoted on pins or screws 23, the ends of which are seated in the walls 10 and 20.

The clamping blocks 21 are oppositely disposed with respect to each other, that is, the free ends thereof project toward the block 18 with the pivot pins 23 in the upper outer corners of chamber 14.

Formed in cover plate 20 below and concentric with the axis pins or screws 23 are short arcuate slots 24 and passing therethrough are pins or screws 25, the inner portion of which are seated in the blocks 21.

The outer ends of these pins or screws are provided with small heads 26 which are positioned just below the outer face of front wall 20 and to afford partial protection for said heads and preventing the same from being struck by extraneous objects, ribs 27 are formed on the outer face of plate 20 around the arcuate slots therein.

A retractile coil spring 28 is positioned in the upper portion of chamber 14 above block 18 and the ends of this spring are connected to the ends of the clamping blocks 21 above the pivot pins 23

and said spring acts to swing the clamping blocks 21 downwardly into engagement with the wires, rods, cables or the like which are inserted through openings 15 into the connector.

Thus, the clamping blocks act as eccentrics to automatically engage and clamp inserted rods and the like and thus the device provides a substantial connection for the adjacent ends of various structural elements, such as cables, rods, wires, chains and the like. To release the clamp from the engaged members, it is only necessary to manipulate the pins 25 by engaging the heads 26 thereof and moving the same through the arcuate slots 24, thus disengaging the clamping blocks from the inserted members.

In the modified construction illustrated in Figs. 5-9 inclusive, a housing 30, preferably of sheet metal, is provided at one end with an opening 31 for the reception for the end of the rod or other member to be clamped, and at the opposite end of the housing, the side walls are brought together to form an ear 32 through which is formed an aperture 33. This aperture is adapted to receive a ring, hook, link or the like which affords means for detachably connecting or anchoring the connector to a fixed member.

Pivotaly mounted on a pin 34 in the upper portion of the chamber within the housing above the end opening 31 is a clamping block 35 practically identical with one of the blocks 21 previously described and connected to the end of this block above the pivot 34 is one end of a retractile spring 36, the other end of which is connected to the closed end of the housing.

Formed in block 35 below the pivot 34 is a recess 37 in the lower portion of which is located an expansive spring 38, and bearing thereon is the inner end of a pin 39 similar to the pin 25 and which passes through an arcuate slot 40 in the front wall of the housing. Slot 40 is surrounded by a rib 41 formed on the outer face of the front wall of the housing, and the outer end of pin 39 carries a head 42 which is positioned within the wall 41.

Formed on the inner end portion of pin 39 is a lug 43 which occupies a recess 44 formed in block 35 to the side of the recess 37 and the outer end of said lug 43 is bevelled for engagement with ratchet teeth 45 which are formed on the inner face of the cover plate immediately adjacent the outer edge of the arcuate slot 40 (see Figs. 8 and 9). These ratchet teeth and lug 43 provide a self acting safety latch to hold the block 35 away from the rod while same is being inserted in the connector and to release the block so that it may move into gripping engagement with the inserted rod, it being only necessary to press pin 39 inward against the resistance offered by spring 38, thus disengaging lug 43 from the ratchet teeth. This safety latch is also effective in holding the block after it has moved into clamping engagement with the inserted rod.

In this form of clamp it is necessary to push pin 42 inward to release detent lug 43 from the ratchet teeth 45 when a rod or the like is being inserted into or withdrawn from the housing.

Thus, it will be seen that I have provided a device for engaging and clamping the ends of wires, rods, cables, chains and the like, and which clamping and connecting device is relatively simple in construction, inexpensive of manufacture, and very effective in performing the functions for which it is intended.

It will be understood that minor changes in the size, form and construction of the various parts of my improved connector may be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim as my invention:

1. A connector and clamp for rods, wires, cables and the like comprising a housing provided at one end with an opening, an eccentric block pivoted within the housing above said opening, a retractile spring connected to said block above its pivot point and tending to move the free end portion of said block downwardly toward said opening, one of the side walls of the housing having an arcuate slot, concentric with the axis of said eccentric block and a pin seated in said block and extending outwardly through said arcuate slot.

2. A connector as set forth in claim 1 and with means to releasably hold the block in a fixed position with respect to the pivot and the housing when moved against the resistance of the spring.

3. A connector and clamp for rods, wires, cables and the like comprising a housing provided at one end with an opening, an eccentric block pivoted within the housing above said opening, a retractile spring connected to said block above its pivot point and tending to move the free end portion of said block downwardly toward said opening, and manually operable means for swinging said block on its axis against the resistance offered by said spring and for releasably engaged with said block at the end of such movement.

4. A connector and clamp for rods, wires, cables and the like comprising a housing having openings in its ends for the reception of the rods, wires or cables, clamping blocks pivotaly mounted in the end portions of said housing, a retractile spring connecting said clamping blocks beyond their pivot points and means comprising pins seated in said blocks offset from their pivots and passing through slots in one of the side walls of said housing for swinging said blocks on their axes against the resistance of said springs.

5. A clamping and connecting device as set forth in claim 4, and with a partition within said housing between said blocks.

LOUIS FRANK.