May 23, 1939. F. E. KLING ET AL 2,159,165

CONNECTING ROD

Filed Dec. 30, 1936

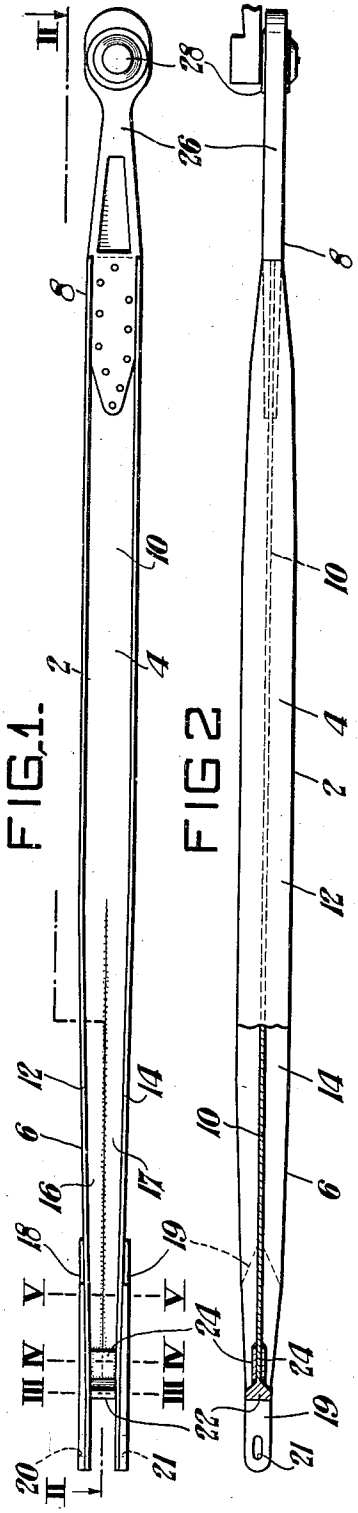


FIG. 1.

FIG. 2

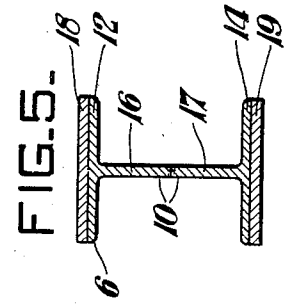


FIG. 5.

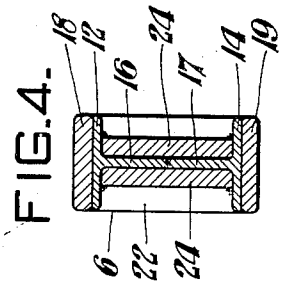


FIG. 4.

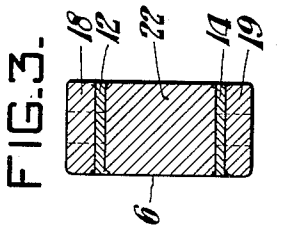


FIG. 3.

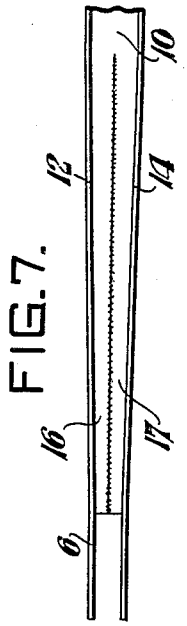


FIG. 7.

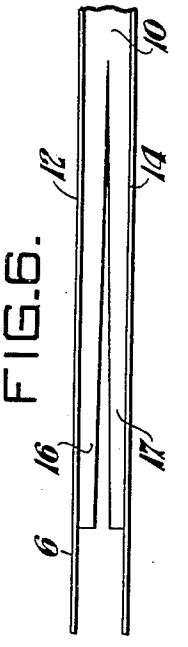


FIG. 6.

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CONNECTING ROD

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Application December 30, 1936, Serial No. 118,406

5 Claims. (Cl. 74—579)

This invention relates particularly to connecting-rods that are adapted to be used on river boats or the like, and has for one of its objects the provision of a strong, sturdy connecting-rod.

Another object of this invention is to provide a connecting-rod which has a long life and requires but a minimum of maintenance work thereon.

The above and further objects will be made apparent by referring to the following description and the accompanying drawing in which:

Figure 1 is an elevation of one embodiment of our invention;

Figure 2 is a sectional view taken on line II—II of Figure 1;

Figure 3 is a sectional elevation on line III—III of Figure 2;

Figure 4 is a sectional elevation on line IV—IV of Figure 2;

Figure 5 is a sectional elevation on line V—V of Figure 2;

Figure 6 is an enlarged elevation of one end of our connecting-rod after the wedge-shaped portion has been removed and before the bifurcated arms have been moved together; and

Figure 7 is an elevation of Figure 6 after the bifurcated arms have been secured together.

Referring more particularly to the drawing, the numeral 2 indicates generally a connecting-rod which includes a beam 4, preferably an I-beam, having ends 6 and 8 and a web 10. The beam 4 may be of any desired or standard shape and has an upper flange 12 and a lower flange 14. A short length of the web 10 is entirely cut out at the end 6 so that the flanges 12 and 14 longitudinally extend a distance from the web 10. Furthermore, a wedge-shaped portion is cut from that portion of the web 10 adjacent the end 6. The base of the wedge-shaped portion cut from the beam 4 is adjacent the end 6 and the altitude of the portion preferably extends along the axis of the beam 4.

When the wedge-shaped portion was cut from the web 10, bifurcated arms 16 and 17 were formed in the beam 4. The arms 16 and 17 were then bent toward the axis until they contacted each other. The arms 16 and 17 were then welded together so that that portion of the web 10 again was made solid.

In order to strengthen the portions of the connecting-rod 2 directly connecting with a piston-rod or other driving apparatus, bars or metallic members 18 and 19 are welded or otherwise secured to the outer surfaces of the flanges 12 and 14 at the end 6 of the beam. The bars 18 and 19 may be narrower than the flanges and the flanges then should be cut down to the size of the bars 18 and 19. Aligned apertures 20 and 21 are provided through the flange 12 and the bar 18 and the flange 14 and the bar 19, respectively, for connecting a driving member to the connecting-rod 2. A brace, or reenforcing member 22, is welded or otherwise secured between the flanges 12 and 14 at the end of the web 10. Plates 24 may be used to reenforce the web 10 adjacent the brace 22.

The end 8 of the beam 4 is provided with means such as a forged steel "dead eye" bearing-arm 26 having a bearing 28 for securing the connecting-rod 2 to a paddle-wheel crank, or other similar device. The bearing 28 is adapted to journal the paddle-wheel crank-pin therein. The bearing-arm 26 is secured to the web 10 by any suitable means and extends axially from the beam 4.

It will be evident that the bearing 28 and the end 8 of the connecting-rod are exposed to the action of the elements as well as water thrown from the paddle-wheel when connected thereto. These parts should, therefore, be constructed and arranged to resist the repeated wettings which they receive. Furthermore, the water thrown upon the bearing often contains sand, grit, or the like, so that the bearing 28 should also be adapted to form a sand-tight, as well as water-tight, connection with the paddle-wheel crank-pin.

While we have shown and described a specific embodiment of our invention, it will be understood that we do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of the invention as defined by the following claims.

We claim:

1. A connecting-rod having an I-beam body portion, said beam having a portion of the web entirely removed from between the flanges at one end thereof, metallic reenforcing means secured to the outer surface of the flanges adjacent said end and extending beyond the end of the web, a reenforcing brace secured between the flanges next to the end of said web, means for securing said end to a driving means, and means carried by the opposite end for securing the same to a driven means.

2. A connecting-rod having an I-beam body portion, the flange portions at least at one end of said beam extending beyond the end of the web portion thereof, said beam being formed so that at least the height thereof gradually decreases toward that end of said beam, metallic reenforcing members secured at least to the

outer surface of each of said flange portions, means carried by said end for attaching the same to a driving means, and means carried by the opposite end of said beam for attaching the same to a driven means.

3. A connecting-rod having an I-beam body portion, the flanges at one end of said beam adapted to extend beyond the end of said web, said beam being formed so that at least the height of said beam gradually decreases toward said end, metallic reenforcing members secured to the outer surfaces of said flanges adjacent the portions extending beyond the end of the web, reenforcing members secured between said flanges next to said web, the extending portions of said metallic members and flanges having aligned apertures therethrough for connecting said beam to a driving means, and a member secured to and extending longitudinally from the web at the opposite end of said beam for connecting a driven means thereto.

4. A connecting-rod having an I-beam body portion, said beam so formed as to gradually diminish in each of its overall dimensions from a point intermediate said beam to at least one end thereof, means arranged at least between the flanges adjacent the web portion of the beam at said end for reenforcing the same, and means arranged on each end of said beam for connecting the same to respective driving and driven means.

5. A connecting rod having an I-beam body portion, said beam having a portion of the web entirely removed from between the flanges at least at one end thereof, reenforcing means secured to the outer surface of the flanges and between the flanges adjacent the web portion of the beam at said end, and means arranged on each end of said beam for connecting the same to a respective driving and driven means.

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