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N. A. JOHNSON

FRICTION CLAMP FOR TAMPING BARS

Filed Jan. 21, 1922

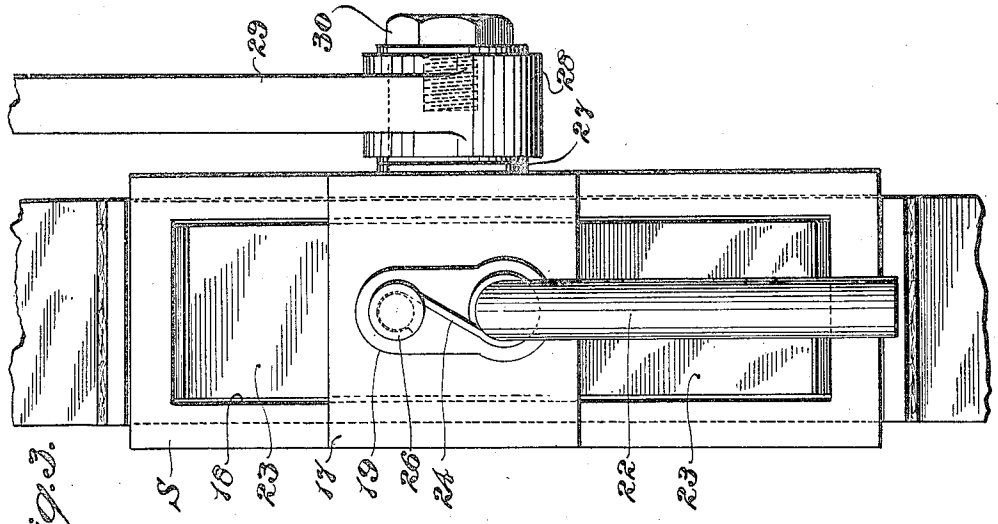


Fig. 3.

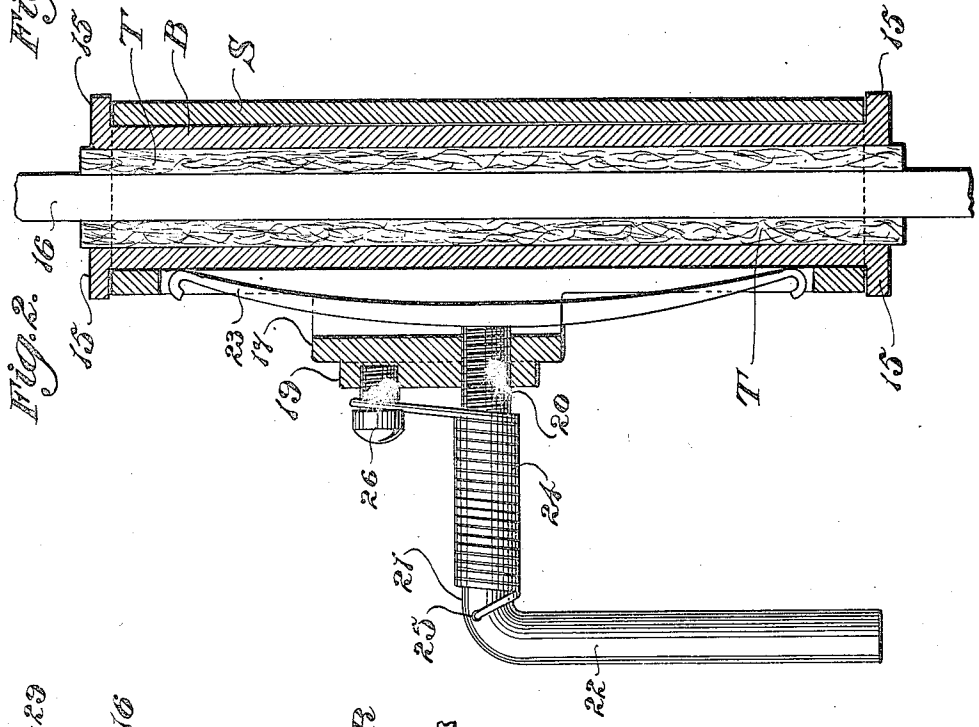


Fig. 2.

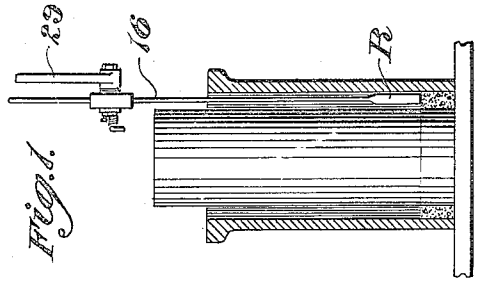


Fig. 1.

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UNITED STATES PATENT OFFICE.

NELS A. JOHNSON, OF VAN NUYS, CALIFORNIA.

FRICTION CLAMP FOR TAMPING BARS.

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To all whom it may concern:

Be it known that I, NELS A. JOHNSON, a citizen of the United States, residing at Van Nuys, in the county of Los Angeles and State of California, have invented new and useful Improvements in Friction Clamps for Tamping Bars, of which the following is a specification.

My invention relates to clamps for removably supporting tamping bars on the movable arms of tamping apparatus designed for use in the forming of concrete pipes, and a purpose of my invention is the provision of a clamp of this character which yieldably holds the tamping bar with sufficient rigidity to effect the proper functioning of the tamping bar during the tamping operation to allow the movement of the bar within the clamp when it engages an obstacle foreign to the concrete thereby preventing distortion of the tamping bar or destruction of the mold.

I will describe one form of clamp embodying my invention and will then point out the novel features thereof in claims.

In the accompanying drawings,

Figure 1 is a view showing in section a pipe mold and a tamping bar and operating arm with one form of clamp embodying my invention in connecting position with respect to the bar and arm.

Figure 2 is an enlarged vertical sectional view of the clamp shown in Figure 1 with the tamping bar in applied position.

Figure 3 is a view showing the clamp in front elevation.

Referring specifically to the drawings in which similar reference characters refer to similar parts, my invention in its present embodiment comprises a sleeve S of rectangular formation formed of suitable metal and of the desired length and width, and filler bars B arranged within the sleeve and having their ends provided with right angularly disposed lips or flanges 15 which cooperate in retaining the bars within the sleeve. Friction strips T formed of any suitable material such as leather, felt, or the like, are arranged between the filler bars B and are adapted to receive therebetween the shank 16 of the tamping bar R.

The sleeve S is provided at a point intermediate its ends with a yoke 17 which spans a portion of the slotted side 18 of the sleeve. This yoke 17 is formed on its upper side with an extension 19, and extending through the extension 19 and the yoke 17 is a threaded end 20 of a pressing shaft 21. As clearly shown in Figure 2, the outer end of the shaft 20 is extended at right angles to provide a handle 22 adapted to be gripped in effecting rotation of the shaft to cause an outward feeding of the end 20 from the yoke 17. This pressing shaft is designed for the purpose of exerting pressure on a leaf spring 23 arranged within the slot 18 of the sleeve S so as to engage the adjacent filler bar B. This spring 23 is bowed longitudinal with its opposite ends curved upon themselves, and engaging with the medial portion of the spring is a threaded end 20 of the shaft 21. From this arrangement it will be clear that according as the shaft is fed inwardly against the spring 23, the pressure upon the adjacent filler bar B will be increased to cause the friction strips T to more firmly engage the shank of the tamping bar. However, when the shank is fed outwardly, the pressure upon the spring 23 is decreased so that the pressure with which the friction strips engage the tamping bar is correspondingly decreased.

In order to effect the automatic operation of the shaft 21 to exert a constant pressure upon the spring 23, a coiled spring 24 is mounted upon the shaft 21 with one end secured within the shaft as indicated at 25 and its opposite end trained about the shank of a screw 26 mounted in the extension 19. The mounting of this spring is such that it constantly tends to rotate the shaft 21 in a clockwise direction as when viewed in Figure 3 thereby feeding the shaft inwardly against the spring 23 and thus serving to maintain a constant pressure upon the spring to cause the friction strips to effectively embrace the tamping bar. When it is desired to remove or readjust the tamping bar within the clamp, it will be clear that by gripping the handle 22 and rotating the shaft in a counter-clockwise direction and against the action of the spring 24, the pressure upon the spring 23 can be removed, thus releasing the friction strips to permit the ready removal of the bar.

In practice, the sleeve S is provided with a stub axle 27 which receives the sleeve bearing 28 of an operating arm 29, the bearing being retained against displacement from the axle by a screw 30. With the tamping bar in applied position within the clamp as shown in Figure 1, movement of the operat-

ing arm 29 effects vertical movement of the tamping bar, the shaft 21 acting upon the spring 23 to exert sufficient pressure upon the friction strips T to retain the tamping bar against movement within the clamp. This condition exists during the normal operation of the bar. However, should the tamping bar strike the bottom of the mold or the sides thereof so as to exert an excessive upward or downward resistence to the movement of the bar. the shank 16 will be free to move between the friction strips T thereby allowing the tamping bar to yield in its movement when engaging such obstructions. This obviously prevents destruction of the tamping bar as well as the mold and other parts comprised in the tamping apparatus while at the same time insuring of the proper operation of the tamping bar at all times.

Although I have herein shown and described only one form of tamping bar clamp embodying my invention, it is to be understood that various changes and modifications may be made herein without departing from the spirit of the invention and the spirit and scope of the appended claims.

What I claim is:

1. A clamp for tamping bars comprising a sleeve, friction strips sustained within the sleeve and adapted to receive therebetween the shank of a tamping bar, a spring for urging said strips to yieldingly retain the shank of the tamping bar between the strips, means constantly acting to urge said spring inwardly of the sleeve comprising a shaft contacting with the spring, and a second spring constantly acting to rotate the shaft so as to feed the shaft inwardly against the first spring.

2 A clamp for tamping bars comprising a sleeve, friction strips within the sleeve adapted to receive therebetween the shank of a tamping bar, filler bars insertible within the sleeve and between the latter and the friction strips, and a spring engageable with one of the filler bars for urging the latter inwardly of the sleeve to cause said strips to yieldably retain the shank of the tamping bar between the strips.

3. A clamp for tamping bars comprising a sleeve, friction strips within the sleeve adapted to receive therebetween the shank of a tamping bar, a spring for causing said strips to yieldably retain the shank of the tamping bar between the strips, and means constantly acting to urge said spring inwardly of the sleeve.

4. A clamp for tamping bars comprising a sleeve, friction strips within the sleeve adapted to receive therebetween the shank of a tamping bar, filler bars insertible within the sleeve and between the latter and the friction strips, a spring engageable with one of the filler bars for urging the latter inwardly of the sleeve to cause said strips to yieldably retain the shank of the tamping bar between the strips, means constantly acting to urge said spring inwardly of the sleeve, said means comprising a threaded shaft contacting with the spring, and a second spring constantly acting to rotate the shaft in such direction as to effect an inward feeding of the same against said spring.

5. A clamp for tamping bars comprising a sleeve having a slot formed in one side thereof, a yoke formed integral with the sleeve and spanning said slot, friction strips within the sleeve, filler bars having terminal flanges engaging the sleeve for sustaining the bars between the strips and sleeve, a leaf spring within said slot and contacting with one of said filler bars, a shaft threadedly fitted in the yoke and engaging said spring, a handle formed on the shaft, a screw in said yoke, and a coiled spring surrounding the shaft with one end connected to the shaft and the other end to said screw for the purpose described.

6. A clamp for tamping bars comprising a sleeve having a slot formed in one side thereof, a yoke formed integral with the sleeve and spanning said slot, friction strips within the sleeve, filler bars having flanges engaging the sleeve for sustaining the bars between the strips and the sleeve, a spring within said slot and contacting with one of said bars, and means constantly acting to urge said spring inwardly of the sleeve.

In testimony whereof I have signed my name to this specification.

NELS A. JOHNSON.