June 16, 1931. L. H. TANGEN 1,810,304

CLAMP OR CLOTHESPIN

Filed Oct. 12, 1929

Fig. 1.

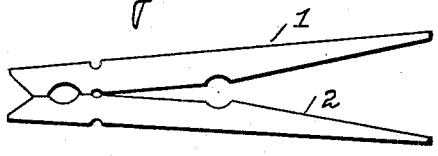


Fig. 2.

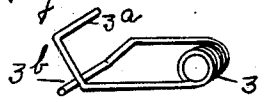


Fig. 3.

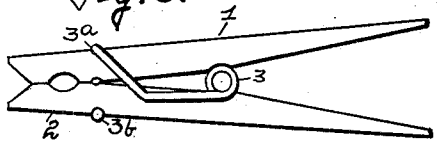


Fig. 4.

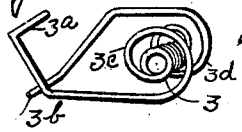


Fig. 5.

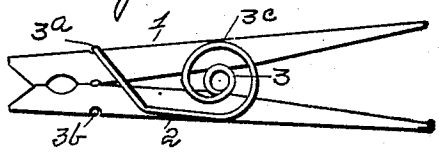


Fig. 6.

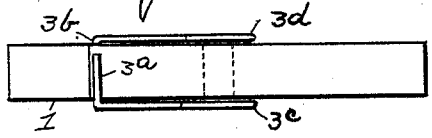


Fig. 7.

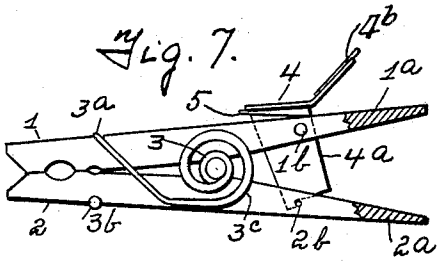


Fig. 8.

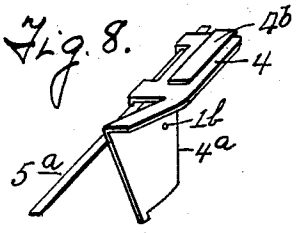


Fig. 9.

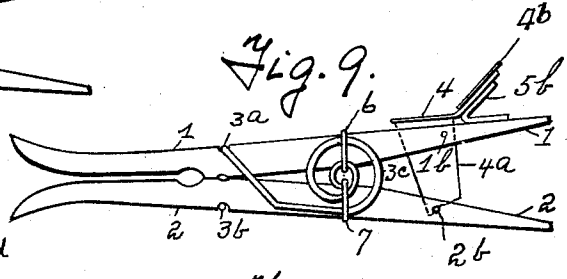


Fig. 10.

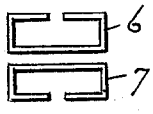
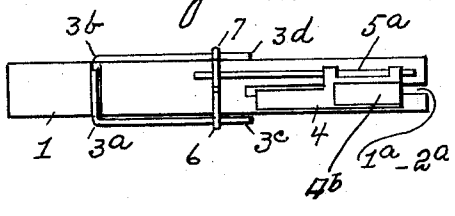


Fig. 11.



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Patented June 16, 1931 1,810,304

UNITED STATES PATENT OFFICE

LOUIS H. TANGEN, OF DULUTH, MINNESOTA

CLAMP OR CLOTHESPIN

Application filed October 12, 1929. Serial No. 399,275.

My invention relates to clamps including spring actuated clothes pins, and has for its object the provision of an improved spring actuated clamp or clothes pin embodying a safety lock. It has for a further object the provision of a spring actuated clamp or clothes pin embodying improvements in means for preventing the twisting of the clamp jaws, and pivot attaching means for preventing the non-radial separation of the clamp jaws. With these and other objects in view, it consists of the structures, combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, Fig. 1 is a side elevation of the partly completed jaws of one form of my said invention, said jaws in said partly completed state being old in the art. Fig. 2 is a perspective view of one form of an actuating spring which may be embodied in my said invention, said form of said spring being old in the art. Fig. 3 is a side elevation of said form of jaws and form of spring. Fig. 4 is a perspective view of an improved form of said spring forming part of my said invention. Fig. 5 is a side elevation of said jaws and improved form of spring. Fig. 6 is a top plan view of said jaws and improved form of spring. Fig. 7 is a side elevation of said jaws as further completed, showing said improved form of spring and a lock. Fig. 8 is a perspective view of one form of said lock. Fig. 9 is a side elevation of one form of my said invention, showing a pivot attaching means. Fig. 10 is an end elevation of said pivot attaching means, and Fig. 11 is a top plan view of my said invention.

In the drawings, 1 and 2 are opposite jaws of a clamp, or clothes pin, which are adapted to rock on a portion 3 of a coiled spring extending transversely between them, the opposite terminals of which coil are extended parallel with the sides of said jaws toward the biting ends thereof and one of said terminals is bent over the nose of one of said jaws as at 3^a, and the other of said terminals is bent under the nose of the opposite jaw as at 3^b, whereby said biting ends are normally but yieldingly held together, it being old in the art to hold them together by such means and in that manner. Said forwardly directed spring extensions also tend to preserve the parallelism of said jaws against lateral twist or displacement, but the leverage is such that in a high wind said extensions have been found too weak to preserve such lateral displacement when the clamp is used for pinning heavy clothes on the clothes line. I therefore prefer to make the outer turns, 3^c, 3^d, of the coil of the spring of greater diameter than the intermediate turns, so that said outer turns will form cheek pieces for said jaws approximately concentric with the fulcrum portion of the coil 3 or axis of the rocking movement of said jaws. But if desired said enlarged turns may be omitted. To open said jaws for the purpose of inserting the biting ends over the material or object to be clamped, the rearward ends of the jaws are pinched together manually in opposition to the closing power of said spring. The spring is therefore usually light enough to permit the opening of the jaws by operators having little manual strength, in which case heavy clothing, or light clothing in strong winds, or goods upon which a substantial pull is exerted are likely to be accidentally drawn out of the jaws and to become soiled, damaged or lost. I therefore provide a lock in the rear of the rocking axis of said clamp, which lock comprises an angular plate 4 positioned above said jaw 1 and having a depending flange 4^a extending through a slot 1^a in said jaw 1 and into a slot 2^a in said jaw 2. Said lock is eccentrically pivoted to said jaw 1 as by the pivot pin 1^b and said flange in locking position bears upon a stop pin 2^b which extends into its path within said slot 2^a. Since the clamp may be inverted, I provide a spring of any suitable form, structure or location, as the spring 5, 5^a, or 5^b, so positioned as to normally hold said lock in locking position. Said lock is provided with an angular handle portion 4^b for manually counter rocking said lock on its pivot, in opposition to either form 5, 5^a or 5^b of said lock-holding spring, to unlock said clamp.

When said lock is in locking position, it

would be possible to force open the biting ends of the jaws thereby lifting the jaws from their normal rocking axis on said coil if no means other than the ends 3^a, 3^b, were provided to hold said jaws in rocking position on said coil. I therefore provide retaining means of any suitable structure for that purpose as the clips 6 and 7, one of which clips passes through said coil and extends over the top of said jaw 1, and the other of which clips extends through said coil and under said jaw 2.

In operation, to open said jaws, the raised end of the plate 4 is manually depressed in opposition to the spring 5 (or 5^a or 5^b), which depression causes the flange of said lock to swing clear of said stop 2^b. The depressing movement is continued so as to bring the rearward ends of the jaws together and simultaneously open the clamp at its biting end. Upon releasing the rearward ends of the clamp, the jaws are closed by the action of the coiled spring and its free ends, and the lock is returned to locking position by said spring 5 (5^a or 5^b) or equivalent.

It will be observed that in Fig. 9, the nose of the clamp is extended much farther forward of the spring terminals 3^a, 3^b than in the other figures, and that in said Fig. 9, the opposite jaws of said clamp are preferably spaced a little from each other forward of said spring terminals to provide an easy entrance. This I regard as also an improvement since in such case, having omitted, or removed, or retracted the lock, it will be practicable to push the clamp or clothes pin into operative position on the goods to be clamped without requiring the rearward ends of the clamp to be directly pinched together by the operator.

Having now described my invention, what I claim is—

1. A clamp comprising rockable jaws, means for rocking said jaws into clamping position, an angular plate positioned above the handle portion of one of said jaws and having a depending flange eccentrically pivoted to and extending through the handle portion of one of said jaws and extending loosely into the handle portion of the opposite one of said jaws, and a bearing stop positioned in said opposite handle portion and adapted to limit the downward and backward movement of said flange.

2. A clamp comprising rockable jaws, a resilient fulcrum for said jaws, and clips engaging said fulcrum and jaws for holding said jaws in rockable position against said fulcrum.

In testimony whereof, I hereunto affix my signature.

LOUIS H. TANGEN.