No. 744,985. PATENTED NOV. 24, 1903.

F. E. STUART.

LOCKING DEVICE FOR CONNECTING TUBULAR OR OTHER PARTS.

APPLICATION FILED MAR. 19, 1903.

NO MODEL.

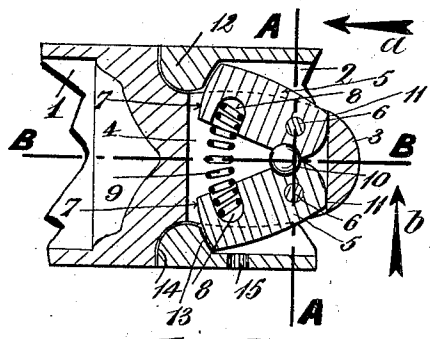



Fig. 1

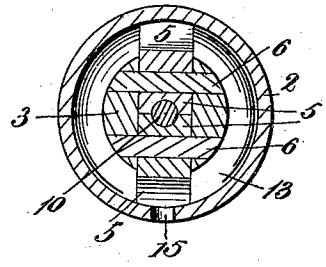



Fig. 2

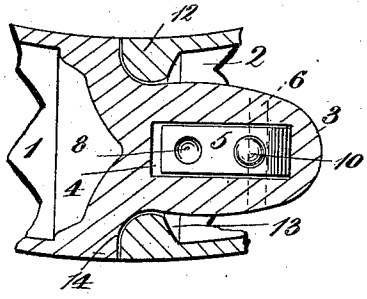



Fig. 3

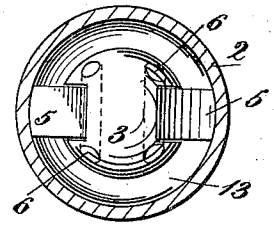



Fig. 4

Fig. 5.

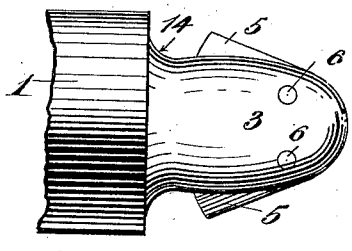
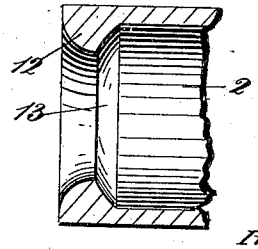



Fig. 6.




Witnesses

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No. 744,985. Patented November 24, 1903.

# UNITED STATES PATENT OFFICE.

FRANCIS ELLIOTT STUART, OF LONDON, ENGLAND.

## LOCKING DEVICE FOR CONNECTING TUBULAR OR OTHER PARTS.

SPECIFICATION forming part of Letters Patent No. 744,985, dated November 24, 1903.

Application filed March 19, 1903. Serial No. 148,592. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS ELLIOTT STUART, a citizen of the United Kingdom of Great Britain and Ireland, and a resident of Victoria Engineering Works, South Ealing, London, England, have invented certain new and useful Improvements in Locking Devices for Connecting Tubular or other Parts, of which the following is a specification.

This invention relates to an improved device for locking or connecting tubular or other parts together; and its object is to provide a simple, effective, and secure means whereby the rapid connection, locking together, and unlocking of such parts may be effected.

The invention is particularly adapted for use upon hinged or folding horse-collars, such as are employed in fire departments, and which are constructed in two parts hinged together at the top to enable them to be rapidly clasped, fastened, or snapped together in position on the horse's neck.

In carrying the invention into effect I provide the parts at the points of juncture, respectively, with a suitably-shaped nose-piece carrying two spring-actuated pawls, when in their normal position projecting and engaging an annulus or ring, the inner face of which is shaped to form a suitable bearing-surface for the ends of the aforesaid pawls when the parts are properly positioned. The construction and arrangement of the pawls are such that any movement imparted to one will be transmitted to the other, and this is effected by pivoting the pawls in a slot formed in the aforesaid nose-piece with a ball or other suitable device engaging recesses formed upon the inner surfaces and at or near the pivoted ends of the said pawls.

In order that the invention may be the better understood, reference is made to the appended drawings, in which—

Figure 1 is a longitudinal section of the parts when connected together. Fig. 2 is a transverse section upon line A A of Fig. 1 looking in the direction of the arrow *a*. Fig. 3 is a section on line B B, Fig. 1, looking in the direction of the arrow *b*. Fig. 4 is an end view, partly in section. Fig. 5 is a side view of the nose-piece. Fig. 6 is a section showing the annulus, against the back of which the spring-pawls within the said nose-piece engage.

Referring to the drawings, 1 2 denote the respective ends of the hames of a horse-collar, and 3 a nose-piece in projection, forming part of or secured to the part 1. The said nose-piece or projection 3 is shaped as shown by the drawings.

4 is a longitudinal slot in the nose-piece, within which are located two pawls 5, pivotally supported at one end by means of pins 6. The outer or free ends of the pawls are preferably curved, as shown at 7, Figs. 1 and 5, and have each formed in them upon their inner faces a recess 8, with which engage the ends of the spiral spring 9.

10 is a sphere situated as shown, engaging with recesses also formed upon the inner faces of the aforesaid pawls and at the opposite ends to those retaining the spring 9. By this means any movement of either one of the two pawls will be communicated to the other. The pivoted ends of the pawls are rounded, as shown in Fig. 1, toward the inside and are also provided with a shoulder 11, designed when the pawls are in an extended position to abut against the outer edge of the slot 4 and to limit the outward movement of the said pawls. It will be seen from the drawings that normally the ends of the pawls project at their free ends beyond the outer surfaces of the nose-piece.

12 is an annulus or ring secured to or formed integrally with the part 2, and the bore of which is of such dimension as to readily permit of the passage of the nose-piece 1 pressing the pawls 5 during such passage inward against the action of the spring 9.

13 in Figs. 2, 4, and 6 is a curved surface formed upon the inner edge of the ring 12, the contour of which agrees with the outer ends of the pawls, and against which surface the ends 7 of the pawls 5 abut when the parts are connected together, as shown in Fig. 1. It will be noticed that the outer face of the ring 12 is funnel-shaped, being so formed to facilitate the introduction of the nose-piece and the compression of the pawls against spring 9. The base of the nose-piece 14 is

similarly curved, so that when the parts are in position a close joint is formed between them.

In order to permit of the two parts of the device being readily disconnected, a hole is formed in the part 2 at 15 to permit of the insertion of a plug, pin, or key, the end of which on being inserted in this hole and pressed against one of the pawls causes both these to come together until the limit of their inward movement is reached, when the nose-piece 3 may be withdrawn from the ring-piece 12.

It will be evident from the foregoing that it is possible to rapidly and securely connect the parts 1 and 2 together, as it is only necessary to insert the end of the nose 3 within the aperture in ring 12, when a sharp push will effect the connection and locking of the parts together, while to disconnect them it is only necessary to employ a plug, pin, or key in the manner before described.

It is obvious that I may substitute for the sphere 10 a roller, or in place of a sphere or roller I may form a projection or projections upon one pawl adapted to engage in suitable recess or recesses upon the other.

Having now described my said invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device for locking two parts together, the combination with a nose or projection carried by one of the parts, a pair of spring-actuated pawls each provided with a depression pivotally mounted in the projection, a sphere mounted in depressions in the pawls to connect the pawls together and cause them to move in unison, and means carried by the other part with which the pawls are adapted to engage to connect the two parts together.

2. In a device for connecting two parts together, the combination with a pair of pawls each provided with a depression carried by one of the parts, of a sphere mounted in depressions in the pawls to connect the pawls and cause them to move in unison, and means carried by the other part with which the pawls are adapted to coöperate to lock the parts.

Signed by me at London, England, this 30th day of January, 1903.

FRANCIS ELLIOTT STUART.

Witnesses:

ALFRED FORDHAM,

I. H. S. GWATKIN.