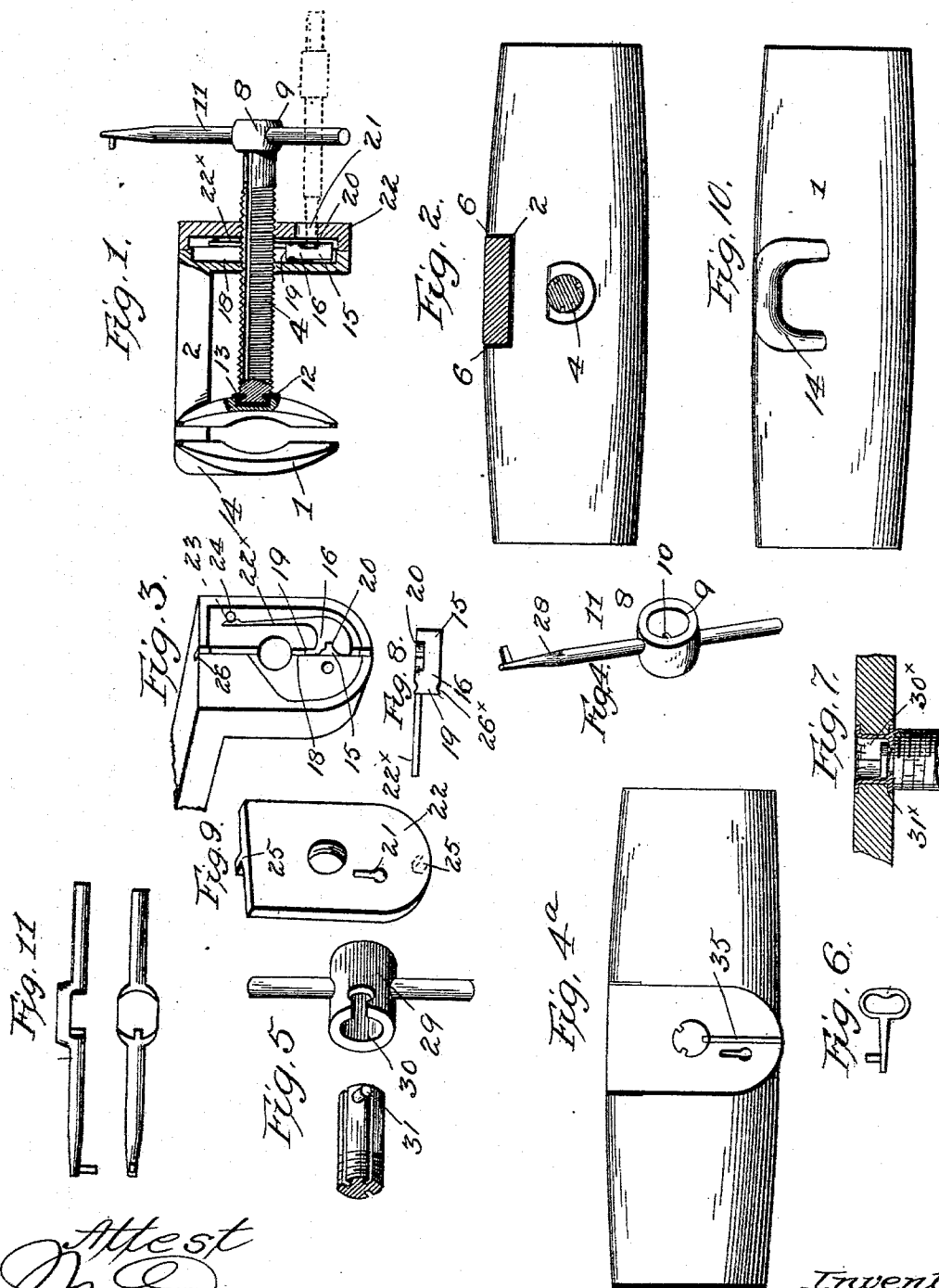


(No Model.)

J. C. PRATT.
LOCKING CLAMP.

No. 514,567.

Patented Feb. 13, 1894.



Attest
Pratt & Madsen
J. L. Middleton

Inventor
John C. Pratt
by Ellis Spear
Att'y.

UNITED STATES PATENT OFFICE.

JOHN C. PRATT, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO JOHN MORGAN, OF SPRINGFIELD, MASSACHUSETTS.

LOCKING-CLAMP.

SPECIFICATION forming part of Letters Patent No. 514,567, dated February 13, 1894.

Application filed March 20, 1893. Serial No. 466,906. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. PRATT, a citizen of the United States of America, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Locking-Clamps, of which the following is a specification.

My invention relates to clamps and particularly to a clamp designed to be locked in place and to be used in holding valuable articles such, for instance, as valises or bundles for protection in traveling, also a carriage robe to a dash board or a horse blanket to a part of the harness, or any other article desiring a locking clamp.

I have designed to provide a clamp which when screwed to secure the clamping effect will be in a measure self locking and in addition to this my object is to provide a simple and effective locking device which will act positively to hold the clamping screw against backward rotation unless the proper key or unlocking device is used.

My invention relates to the general construction of the clamp whereby I secure compactness and strength combined with simplicity and durability.

In the accompanying drawings Figure 1, is a side elevation of the device partly in section. Fig. 2, is a section of Fig. 1 on line $x-x$. Fig. 3, is a face view of the locking mechanism. Fig. 4, is a view of the clamping head and key combined. Fig. 4^a is a face view of the entire clamp. Fig. 5, is a detailed view of a modification showing a different form of clamping head and the end of the screw adapted thereto. Fig. 6, is a view of one of the independent keys which may be used to operate the lock. Fig. 7, shows a modified form of swivel. Figs. 8, 9 and 10 are detail views. Fig. 11 is a modified form of key and clamping head.

The clamp consists essentially of a rigid jaw 1, having an L shaped arm 2 extending at right angles therefrom at its upper edge and in the plane of said upper edge, a movable jaw having a notched upper edge, the edges 6 of said notch reaching up on each

side of the L shaped arm to bear thereon so that the arm itself acts as a guide for the movement of the movable jaw; a screw passing through the outer end of the L shaped arm and having a swivel connection with the movable jaw; a head adapted to the end of the screw for rotating the same and a locking device for engaging the screw to prevent backward rotation. The screw shown at 4 is grooved longitudinally at different points around its periphery and in the drawings I have shown three of these grooves and more can be used if desired. The opening in the outer end of the L shaped arm is screw threaded to fit the threads on the screw and when the screw is turned by means of the head 8 it will pass through the said opening and operate the movable jaw. The head for turning the screw consists of a socketed main portion 9, having a projection 10 adapted to the grooves in the clamping screw and lateral arm 11 by which the head may be turned.

In order to make the device as compact as possible I provide a flat swivel at 12 between the clamping screw and the movable jaw so that a perfectly flush surface is presented and the movable jaw may have a maximum adjustment between the fixed jaw and the outer end of the L shaped arm, this swivel connection is formed by making a socket in the face of the movable jaw and covering this socket is a plate 13 having an opening through which the screw passes, the end of the screw having a pin or a projecting portion adapted to bear on the inner side of the covering plate.

It will be noticed that the clamping head for turning the screw is removable and when the clamping screw has been turned sufficiently to clamp the article the head may be removed and the pressure of the clamp then serves to bind the clamping screw in place against turning by any ordinary force and thus the clamp is to this extent self-locking, it requiring a special form of key adapted to the end of the clamping screw in order that it may be turned to unlock the parts. On the fixed jaw and at the end of the L shaped arm I provide a strengthening rib 14 of U shape, this not only serves to give the desired

strength but it also answers as a finger socket by which the device may be handled it being observed that the outer sides of the clamping jaws are convex and thus not adapted so well to be grasped by the fingers. The inner faces of the jaws are grooved longitudinally, thus adapting the clamp to hold the blanket to a dash board or to a part of a harness, or any article the clamp may be attached to.

In addition to the self locking feature of the clamping screw I have provided a positive lock and for this purpose I have recessed the outer right angular portion of the L shaped arm and the face of this recess is grooved to receive the flange 15 projecting from the locking bolt 16, the said groove being marked 18 and extending radially from the bolt opening. The locking bolt has a projection 19 adapted to engage with either of the longitudinal grooves of the clamping screw and it has a recess or shoulder portion 20, adapted to receive the tongue of the locking key which is inserted through the key-hole 21 formed through the face plate 22, applied to the front face of the right angular arm so as to cover the recess. The locking bolt also has a spring arm extension 22^x, provided with notches 23, adapted to engage with pin 24, in the recess so that the locking bolt will be held in either position by the frictional contact between the spring arm and the pin.

The covering plate is held in place by the projections 25 entering notches 26 in the right angular arm and also by the threads of the screw, the projection serving to prevent rotation of the face plate as the screw is turned and no other fastening other than the threads of the screw is necessary to hold the face plate in contact with the right angular arm. In order that the groove of the screw may be properly positioned to receive the bolt I have provided a mark or groove 35 on the outer face of the covering plate with which the groove of the screw must align before the locking bolt can be operated. The threads of the covering plate serve to close the grooves and thus prevent the insertion of a wire or other device which may be used in attempting to pick the lock, and for this purpose also of preventing the picking of the lock I have notched the projection of the locking bolt at 26^x so that any wire or other device engaging this projection will act to force it into locking position. The key I prefer to combine with the removable head and I have shown said key in connection with one of the arms of said head at 28. By this device the clamping screw can be turned to clamp the parts and then by removing the head the key can be used to lock the clamping screw in place. Instead of combining the key with the turning head I may use a separate key as shown at 29, and in this case the head may be of the form previously described or it may be a socketed head as at

30 having a notch to engage a pin 31 on the end of the clamping screw.

The device may be used in any position where a locking clamp is desirable and while I have mentioned its use for carriage robes and blankets it may be used in attaching clothes to clothes lines or in like situations.

In Fig. 7, the preferred form of swivel is shown. This consists of the split sleeve 30^x each half having an inwardly projecting flange provided with a recess or notch which when the two halves are brought together form the opening to receive the grooved end of the screw. The edges at the recess engage the groove and thus hold the screw in place. The two halves also have outwardly projecting flanges which lie in the countersunk recess 31^x, in the face of the jaw. The jaw has an opening extending clear through it to receive the split sleeve and on the inner face a second countersunk recess is formed which receives the inner upset edge of the sleeve. This edge is split to enable it to be upset readily and no other fastening is needed to hold the sleeve in place though any rivets or pins may be used if desired.

The ends of the sleeve lying in the recess make a perfectly flush surface and present a neat appearance and a strong construction.

I claim as my invention—

1. In combination with fixed jaw having the L shaped arm forming a right angular extension, the movable jaw guided by the main part of said arm, the clamping screw passing through the right angular extension of the L shaped arm, and the key lock arranged within said extension and arranged to engage directly the threads of the clamping screw, substantially as described.

2. In combination, the fixed jaw having the L shaped arm, the movable jaw, the longitudinally grooved clamping screw and the key lock comprising the bolt adapted to engage the grooves of the clamping screw, directly whereby the same acts both as a clamping and locking means substantially as described.

3. In combination, the fixed jaw having the L shaped arm, the movable jaw, the longitudinally grooved clamping screw, the said L shaped arm having a recessed outer face, the locking bolt arranged therein to engage the grooved screw directly and the covering plate placed over the recess about the screw, substantially as described.

4. In combination the fixed jaw having the L shaped arm, the movable jaw, the grooved clamping screw, the locking bolt therefor arranged on the L shaped arm, the covering plate having projections engaging said arm, the said covering plate and arm having a screw threaded opening to receive the clamping screw whereby they are held together, substantially as described.

5. In combination, with a locking clamp

comprising fixed and movable jaws and a
grooved clamping screw, a removable turning
head having a projection fitting the grooves
of the screw the laterally extending arms and
the key on one of said arms and the key lock
5 adapted to be operated by the said key, sub-
stantially as described.

6. In combination, the fixed and movable
jaws, the clamping screw and the swiveled
10 joint comprising the split sleeve having the

flanged head, said sleeve extending through
the movable jaw and upset on its inner end,
substantially as described.

In testimony whereof I affix my signature in
presence of two witnesses.

JOHN C. PRATT.

Witnesses:

HENRY E. COOPER,
WALTER DONALDSON.