(No Model.)

E. G. PARKHURST.

SIGHT FOR ORDNANCE.

No. 512,744. Patented Jan. 16, 1894.

Fig. 1.

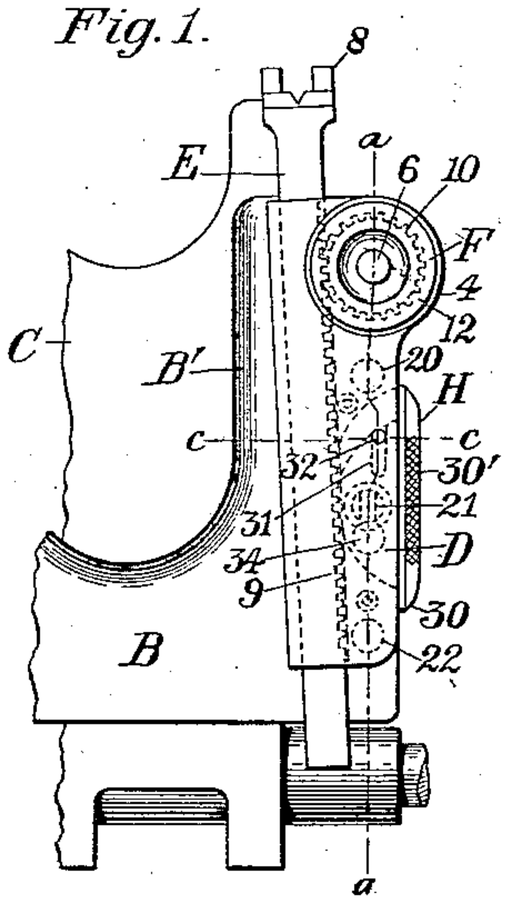


Fig. 2.

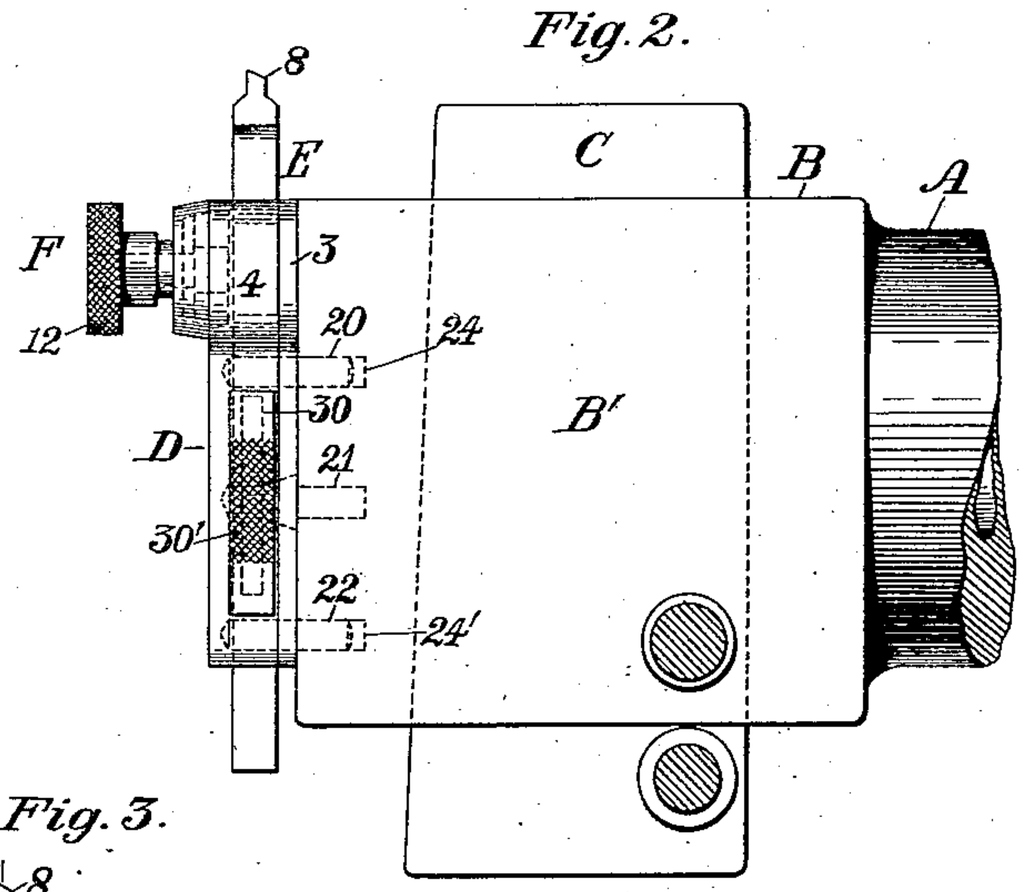


Fig. 3.

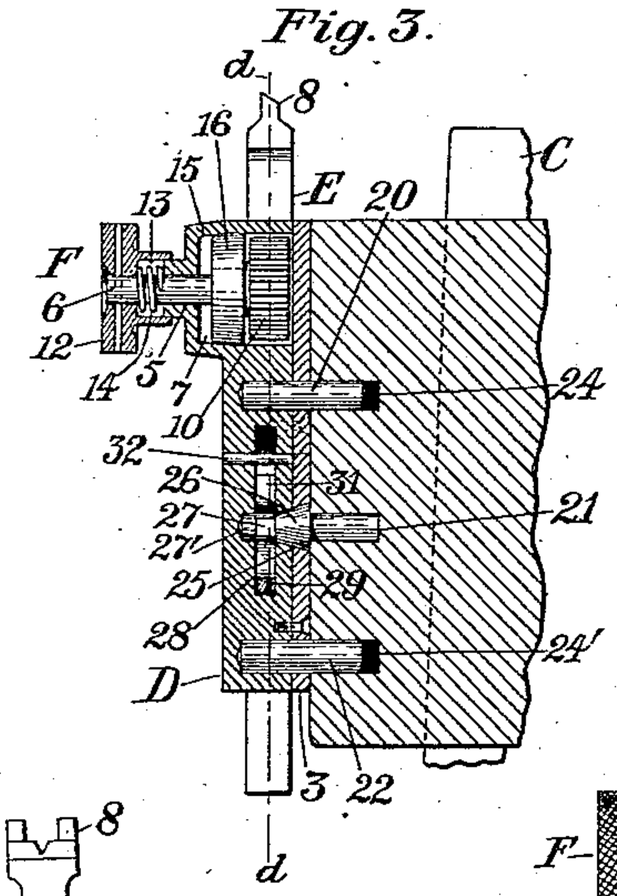


Fig. 4.

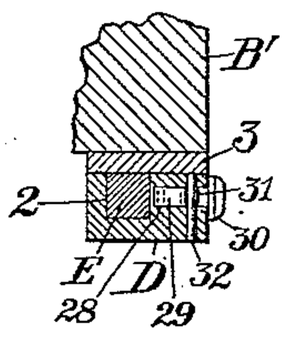


Fig. 5.

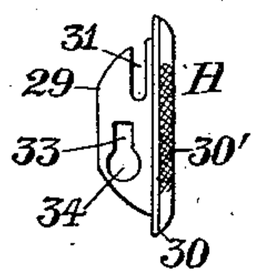


Fig. 6.

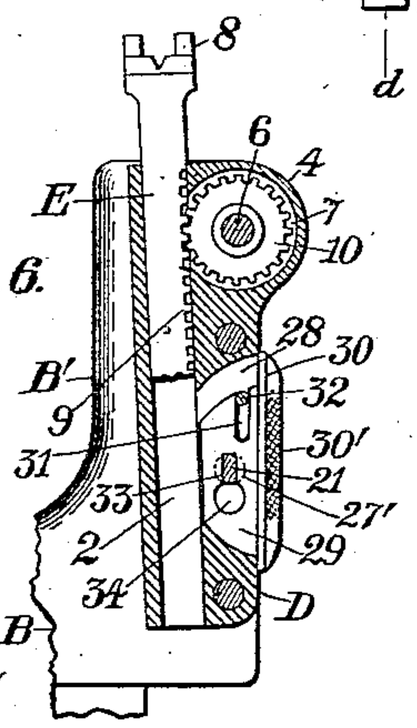
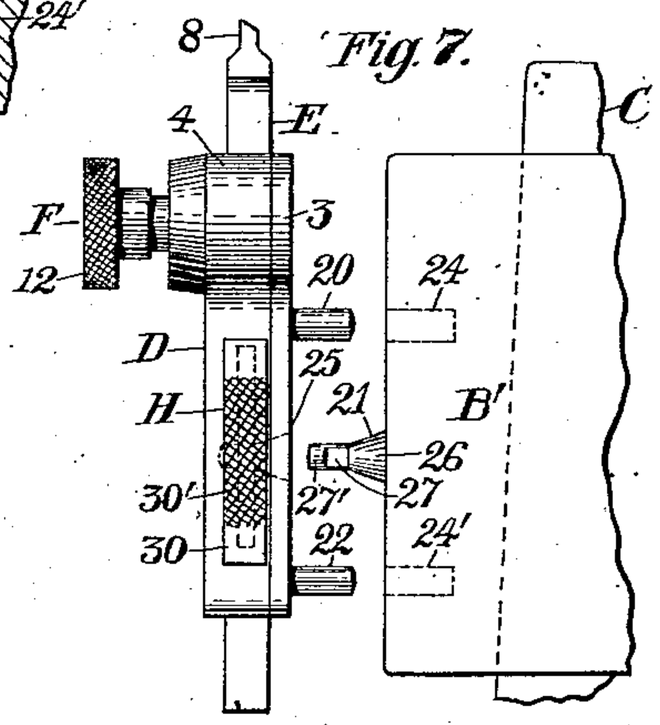


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD G. PARKHURST, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE HOTCHKISS ORDNANCE COMPANY, LIMITED, OF LONDON, ENGLAND.

SIGHT FOR ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 512,744, dated January 16, 1894.

Application filed July 26, 1893. Serial No. 481,478. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. PARKHURST, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sight Attachments for Ordnance, of which the following is a specification.

This invention relates to sights for ordnance; it consists in an improved sight-attachment especially designed for use on breech-loading ordnance of the rapid-fire class, the sight-bar being adjustably carried in a sight-block which is adapted to be instantly assembled on the ordnance-piece or removed therefrom by means of improved locking devices.

The objects of this invention are, primarily, to provide a gun-sight attachment in which the parts thereof may be readily assembled without the use of special tools and may be quickly secured to and locked in position upon and be removed from the gun when desired; to furnish a sight-attachment so constructed that it will be simple, compact and durable; also to provide means whereby the sight-bar may be quickly adjusted as required with relation to the block, and for automatically securing said sight-bar in its adjusted position.

In the drawings accompanying and forming a part of this specification, Figure 1 is a rear end elevation of a portion of an ordinary breech-loading gun provided with a sight-attachment embodying my present invention; Fig. 2 a side elevation of the same as seen from the right-hand in Fig. 1; Fig. 3 a vertical section of the same on dotted line *a*—*a* of Fig. 1; Fig. 4 a cross-sectional detail view taken on dotted line *c*—*c*, Fig. 1. Fig. 5 is a detail view of the fastening device in side elevation. Fig. 6 is a vertical section through the sight-attachment, on line *d*—*d*, Fig. 3. Fig. 7 is a side elevation, (similar to Fig. 2) showing a portion of the breech of the ordnance, and illustrates the operation of removing the sight-attachment, and of replacing the same.

Similar characters designate like parts in all the figures.

In the drawings I have shown the parts comprising the sight-attachment as applied to one form of breech-loading ordnance of the so-called "rapid-fire" pattern, and have for this purpose shown only a sufficient portion of the ordnance to illustrate the application of the sight-attachment thereto. The gun consists, essentially, of the barrel, A, the vertically and longitudinally recessed breech-piece B, having the side-walls B′, (one only of which is shown,) the vertically sliding breech-block, C, and mechanism, not shown, to raise and lower the breech-block with relation to the breech-piece, and for actuating the firing-pin. Inasmuch as the sight-attachment is applicable to many forms of ordnance, and inasmuch as the particular construction of ordnance shown does not constitute an element in my present invention, it is not deemed necessary to give a detailed description of the construction of the same. The sight-attachment in the preferred form thereof herein shown, comprises a sight-block, D, a sight-bar, E, adjustably secured therein, a sight-adjusting and holding device, designated in a general way by F, sight-block-attaching devices (herein shown in the form of pins, 20, 21, 22) and a fastening device, H, for securing the sight-block upon the gun and for preventing accidental displacement thereof. The sight-block D is preferably rectangular in cross-section, as shown in Fig. 4, and is recessed longitudinally at, or near, its inner face, as shown at 2, to receive the sight-bar E which is seated therein and is guided in its longitudinal movement between the walls thereof. For convenience in assembling these parts, the recess or channel for the reception of the sight-bar will be formed by grooving the inner face of the sight-block from end to end in close proximity to one of its side edges, which groove will preferably be rectangular in cross-section, and the sight-bar will be of a construction to have a sliding fit in said groove and lie with one of its side faces flush with the inner face of the sight-block, a cap or plate, 3, being secured to the rear face of the sight-block when the parts are assembled to hold the same in place.

The sight-block D is preferably enlarged at its upper end, as shown at 4, Fig. 2, and is bored transversely to form a bearing, 5, for

the shaft, 6, of the sight-bar-actuating and locking-mechanism, hereinafter described; said bore being enlarged at the inner end to form a recess, 7, to receive said mechanism. This recess 7 extends into the longitudinal recess 2 in which the sight-bar is seated, as clearly shown in Fig. 6. The recess 2 for the sight-bar, will, in practice, preferably be slightly inclined with relation to a vertical line, as shown in Fig. 1, so that the upper end of the sight-bar, 8, which forms the sight proper, will, when the sight-block is attached to the side of the breech of the ordnance, project inward slightly toward the axis of the bore of the gun. In the present instance the sight 8, is shown of the ordinary grooved pattern, but it will be obvious that a sight of any suitable construction may be used.

The sight-bar E is shown provided with a series of teeth, 9, on one side thereof, which teeth are engaged by the teeth of a pinion, 10, secured to the inner end of the shaft 6 and located within the recess 7 of the sight-block. At the outer end of said shaft is secured a thumb-wheel, 12, the hub of which is recessed as at 13, to loosely fit, and be capable of movement upon the journal bearing 5 of the sight-block; and interposed between the end of said journal bearing and thumb-wheel within the recess 13 is a spiral-spring, 14, the function of which is to normally press the thumb-wheel, together with its shaft and sight-bar-actuating and locking-mechanism, outward, as will be hereinafter more fully described.

As shown in the drawings, Fig. 3, the recess 7 of the sight-block is conically tapered at the end nearest the outer wall thereof, as shown at 15, which conically tapered portion of the sight-block forms one element of a brake-device to prevent accidental rotation of the pinion 10; which pinion meshes with the rack of the sight-bar and consequently prevents accidental movement of said sight-bar after adjustment. The other element of the brake-device is a friction-disk, or brake-wheel, 16, of conical construction rigidly secured to or formed on the shaft 6 and interposed between the sight-bar-actuating-pinion 10 and outer wall of the sight-block, as clearly shown in Fig. 3. The transverse recess 7 will be of sufficient length to permit a slight longitudinal movement of the shaft 6 and brake-wheel 16 therein. This brake-wheel will be of slightly less diameter than the greatest diameter of the recess 7, and its periphery will be inclined or tapered to correspond to the inclination or taper of the recess 7, so that when the shaft 6 is moved inward by pressure upon the thumb-wheel, the brake-wheel will be released from frictional engagement with the walls of the recess 7, so that the pinion 10 may then be freely turned to raise or lower the sight-bar as may be desired, and when the pressure is removed from the thumb-wheel the spring 14 will immediately act to force the same outward, bringing the brake-wheel into frictional engagement with the walls of the sight-block, thereby securely locking the parts against rotation and the sight-bar in its adjusted position.

As a means for securing the sight-block to the breech of the gun, (it being shown in the drawings as secured to the end-face of the right-hand wall B′ of the breech-piece B) I have shown three pins, 20, 21 and 22; the pins 20 and 22, are fixed transversely in the sight-block with their ends projected outward through the cap 3, and are closely but removably fitted into the recesses, 24, 24′, formed in the end of the side-wall B′ of the breech-piece of the gun. The intermediate pin 21 is fixed in the breech-piece and is adapted to enter a transverse opening, 25, formed through the cap 3 and in the sight-block proper. This intermediate pin has a conical annular flange or shoulder intermediate to its end which bears against the end-face of the breech-piece as shown in Fig. 3, and the recess 25, therefor, in the sight-block is shown conically tapered to correspond with the conical taper of said flange 26. The end of the pin 21 beyond the shoulder 26, and which enters the sight-block, is cut away at its sides as shown at 27, to form flanges 27′ to bear against a fastening device to be interposed between said flanges and outer end of the conical flanged portion 26 of said pin 21, for preventing movement of the sight-block upon said pin after the same is secured to the breech-piece, as will be hereinafter more fully described.

Formed in one side of the sight-block, as shown at 28, is a groove or recess which intersects the recess 25 in which the pin 21 is seated. This groove is of sufficient area to receive and permit a slight longitudinal movement therein of the locking-key or fastening-device, designated in a general way by H, which fastening-device is adapted for locking engagement with the pin 21, for securing the sight-block against movement upon the breech-piece of the gun. Said locking-key or fastener consists of a web or plate, 29, preferably flanged at its side-edge as shown at 30, to form a bearing-plate to abut against the side of the sight-block when the fastening-device is seated in the recess 28. The web of the fastening device is slit or longitudinally grooved from its upper edge inward as shown at 31, to form a retaining notch for engaging a pin, 32, extending transversely through the sight-block, as shown in Figs. 3 and 4, and formed transversely through said web 29, is an elongated slot, 33, having its lower edge enlarged to form a circular opening, 34. This opening will be of a diameter slightly greater than the diameter of the flanged end of the pin 21, the upper end of said slot 33 being of a width approximately equal to the flattened or diametrically reduced portion of said pin.

The operation of assembling the parts of the sight-attachment and of securing the sight-attachment to the gun, is as follows:— Assuming the pins 20 and 22 to be secured in

the sight-block, and the pin 21 to be secured in the breech-piece, the friction brake-wheel 16 and sight-bar-actuating-pinion are first secured in proper position on the inner end of the shaft 6, after which the said shaft is extended through the bearing 5 in said block, the spring 14 being slipped onto the outer end thereof and the thumb-wheel 12 is then secured by means of a suitable pin or other fastening device to the extreme outer end of the shaft 6 with its hub in engagement with the bearing 5; the sight-bar is inserted from the inner side of the sight-block into the longitudinal recess 2 in said sight-block (which forms the bearing for said sight-bar) with its teeth in mesh with the teeth of the pinion 10 and in position to be raised or lowered thereby; after this the cap 3 will be secured to the inner face of the sight-block, being held in place by means of screws, or, if preferred, by the two pins 20, 22. Thus assembled, the sight-block is ready to be attached to the breech of the gun. For this purpose the pins 20, 22 are slid into the openings therefor in the breech-piece, the pin 21 during such movement entering the recess 25 in the sight-block and extending through the enlarged opening 34 in the web of the fastener H; this fastening, during said operation, being held in an elevated position in the recess 28 in the sight-block until the end 27 of the pin 21 is extended through the said enlarged opening 34, after which the fastener H will be depressed to bring the upper portion of the slot 33 into engagement with the reduced or flattened portion of said pin; this will bring the inner faces of the flanges 27 into close impingement with the side-walls of said slot 33, thereby preventing any longitudinal movement of the sight-block upon the pin 21 and locking said sight-block rigidly in position upon the breech of the gun. In practice, one face of the web 29 of the fastening will be slightly inclined to act as a wedge against the inner edges of the flanges 27 of the pin 21 when the fastening is pushed downward to force the pin 21 outward and bring the conical shouldered portion into close engagement with the conical recess in the sight-block for securing a binding engagement between the parts. The outer face 30′ of the fastener will, in practice, be knurled to permit the same to be moved longitudinally by the finger of the operator. When it is desired to change the position of the sight-bar with relation to the sight-block, the shaft 6 with the brake-wheel and sight-bar-actuating-pinion will be forced inward by pressure upon the thumb-wheel; this operation will release the brake-wheel from frictional engagement with the walls of the recess 7 and thus permit the pinion 10 to be turned freely by means of said thumb-wheel; and after the sight-bar is adjusted to the proper position, by simply releasing the pressure upon the thumb-wheel, the shaft will be moved outward by the stress of the spring 14, which will bring the brake-wheel into frictional gagement with the walls of the sight-bl and thereby normally hold the sight-ba its adjusted position.

It is obvious that instead of securing pins 20, 22, in a fixed position in the si block, that said pins might be fixed in breech of the gun and be allowed to enter cesses in the sight-block, but the constr tion and arrangement hereinbefore descri are deemed preferable.

Having thus described my invention claim—

1. The combination with the breech-pi of a gun, of a sight-block adapted for ca ing a sliding sight-bar, and means for fast ing said sight-block to the breech of the g consisting of a pin or projection upon breech extended into the sight-block, an locking-key or -fastener movably suppor in the sight-block for engaging said pin projection, substantially as and for the p pose described.

2. The combination with the breech-pi of a gun, of a sight-block supported upo pin projecting from the breech of the g and a locking-key or -fastener carried by s sight-block and having an elongated s adapted to embrace the pin and capable transverse movement with relation to s pin, substantially as and for the purpose scribed.

3. The combination with the breech-pi of a gun, of a sight-block carrying a vertica movable sight-bar and mechanism for adju ing said sight-bar and locking the same in adjusted position, and means for fasteni said block to the gun consisting in a pin projection fixed to the gun and having outer end reduced to form holding flang and a locking-key or -fastener removably su ported in the sight-block and adapted for e gaging with the reduced portion of the pin projection adjacent to said flanges for pr venting movement of the sight-block the on, substantially as and for the purpose d scribed.

4. The combination with the breech-pie of a gun, and with the sight-block construct to carry a vertically sliding sight-bar a mechanism for adjusting said sight-bar, pins fixed in the sight-block and adapted f entering recesses in the breech of the gun, vice versa, and a pin fixed in the breech the gun intermediate to the pins aforesai and adapted to extend into a transverse ope ing in the sight-block, and a locking-k or -fastener carried in a recess in the sigh block and adapted for engagement with t intermediate pin for locking said sight-blo against movement upon the breech of t gun, said fastener being capable of transver movement into and from engagement wi said pin, to permit the removal of the sigh block from the breech, substantially as a for the purpose described.

5. The combination with the breech-pie

un, of a sight-block adapted for carrying
ling sight-bar and having the longitudi-
ecess for receiving a locking-key and
ıg the transverse opening to receive the
)f the pin or projection upon the breech-
of the gun; the pin or projection se-
l to the breech-piece of the gun and hav-
he conically shouldered portion and end-
es extended into the sight-block through
ecess, and a slotted locking-key carried
e recess and movably engaging the pin
point intermediate to the end-flanges
he conical shoulder thereof, substantially
ıd for the purpose described.

The combination with the breech-piece
gun and with a sight-block adapted for
:ing a vertically sliding sight-bar and
ng the longitudinal recess 28 in its side
and the transverse recess 25 intersecting
longitudinal recess, of a pin or projec-
21 fixed to the breech-piece having a por-
at its outer end reduced or cut away at
des to form bearing-faces or -flanges; a
ng-key or -fastener consisting of a web
ed substantially as described to engage
educed portion of the pin 21 and a right-
e flange to bear against the outer face of
sight-piece and capable of movement
:versely of said pin to lock or release the
:-piece in or from engagement with rela-
tion to the breech-piece, and pins or projections at one side of the pin 21 in engagement with the sight-block and breech to prevent rotary movement of the sight-block upon said pin 21, substantially as described.

7. The combination with the breech-piece of a gun, of the sight-block adapted for carrying a sliding sight-bar and having the longitudinal recess 28, the transverse pin-receiving recess 25 and the pin 32 located at one side of and parallel with relation to the recess 25; the pin 21 fixed to the breech-piece and having a reduced portion near its outer end to form flanges 27, which pin is projected into the transverse recess 25 in the sight-block, and the locking-key or -fastener H having the web 29 with the slit 31 in engagement with the fixed pin 32 and having an elongated slot 33 with the enlarged end 34 to removably engage the reduced end of the pin 21, the said recess 28 being of greater length than the web 29 to permit longitudinal movement of said fastener to engage and disengage the said pin, substantially as and for the purpose described.

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