

Sept. 29, 1953

E. KUPCHICK
RETAINER FOR INITIALS OR OTHER INDICIA, AND
A WATCH CONSTRUCTION CONTAINING SAME
Filed Nov. 8, 1950

2,653,442

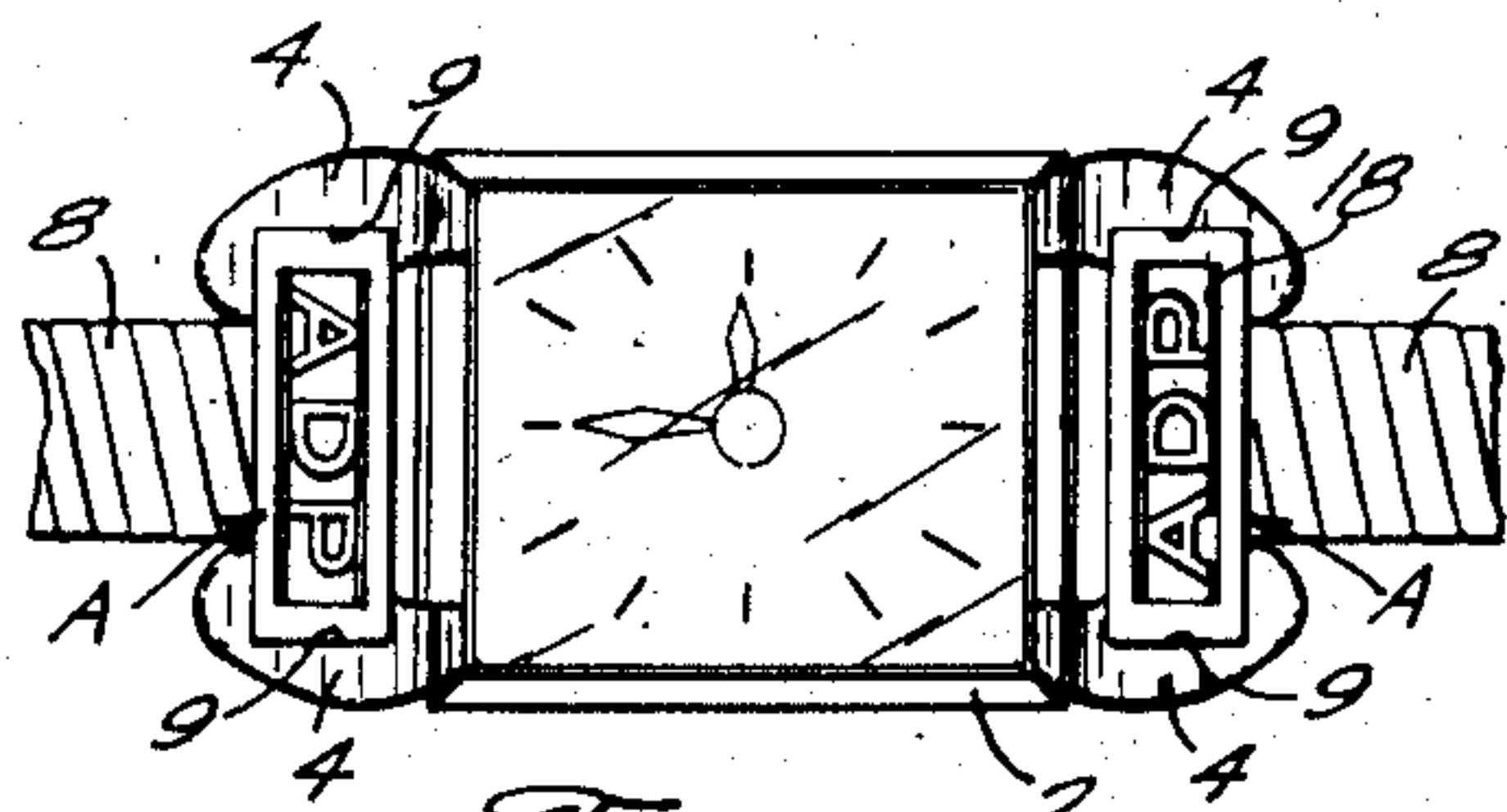


Fig. 1.

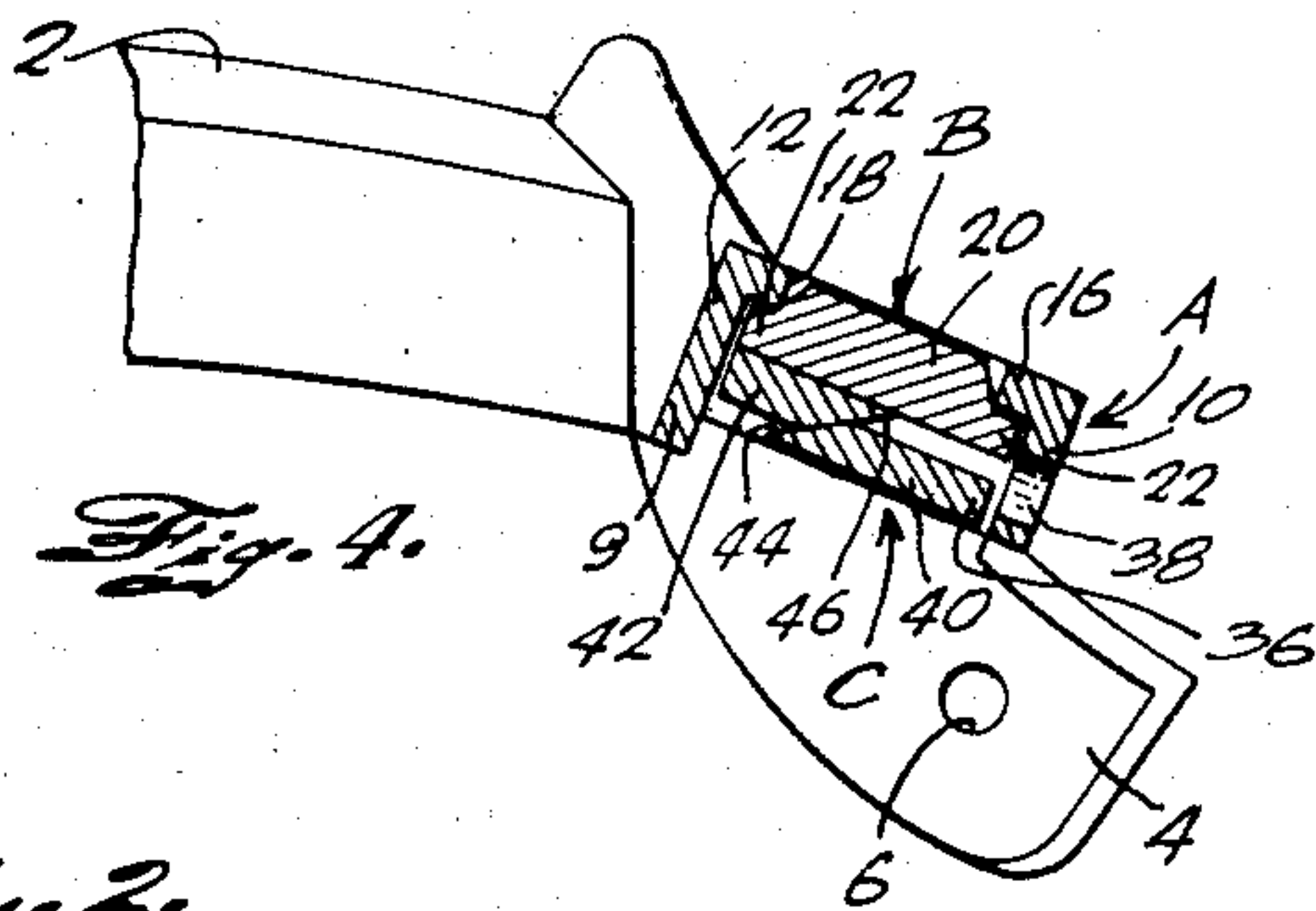


Fig. 4.

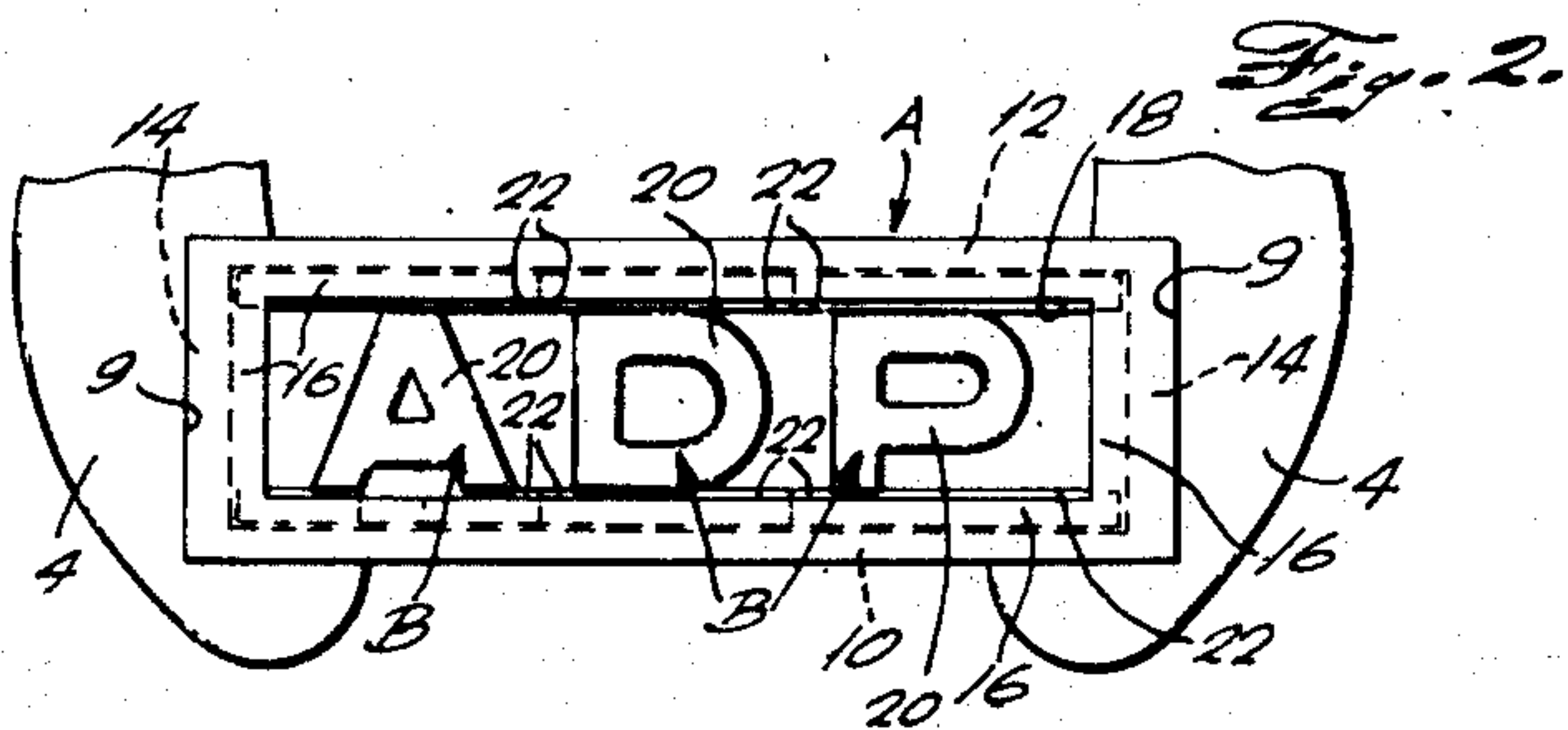


Fig. 2.

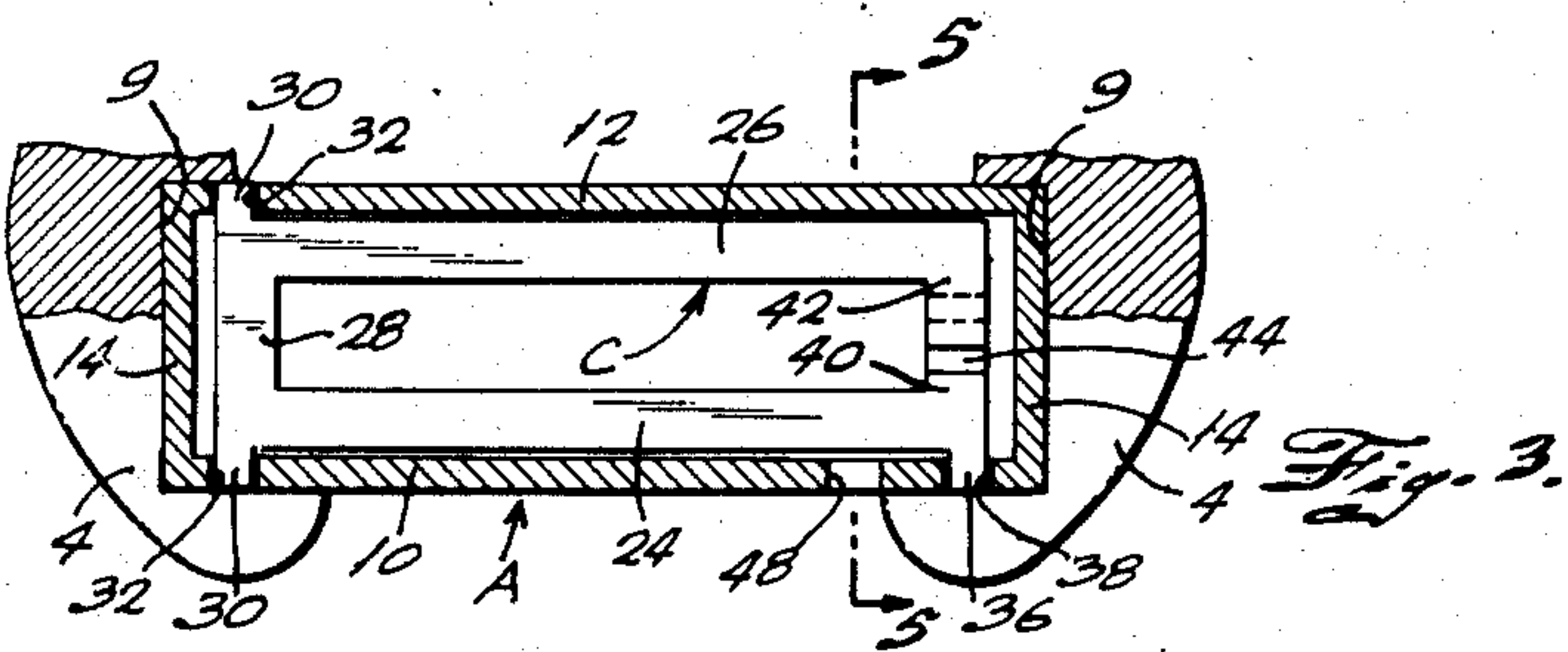


Fig. 3.

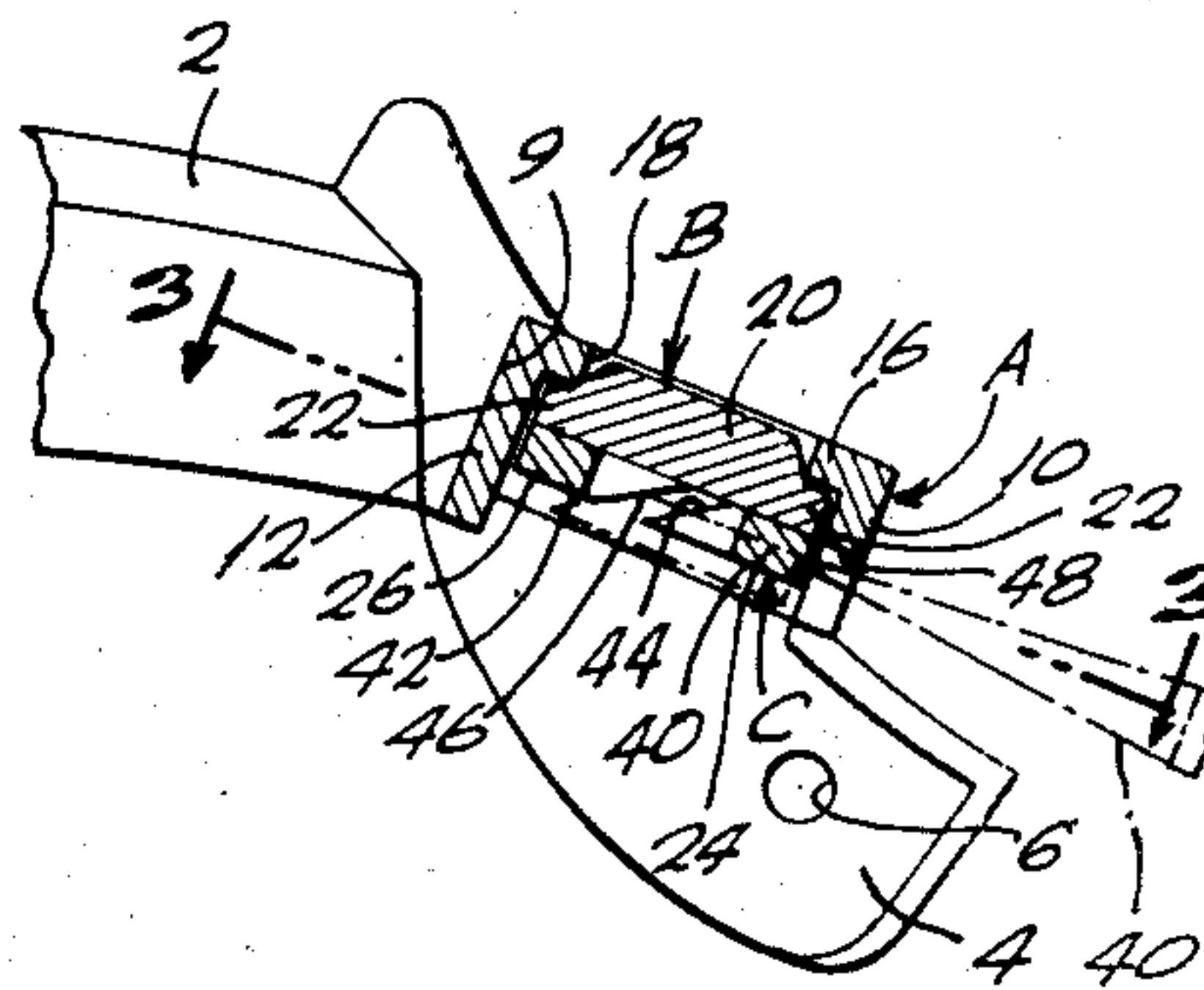


Fig. 5.

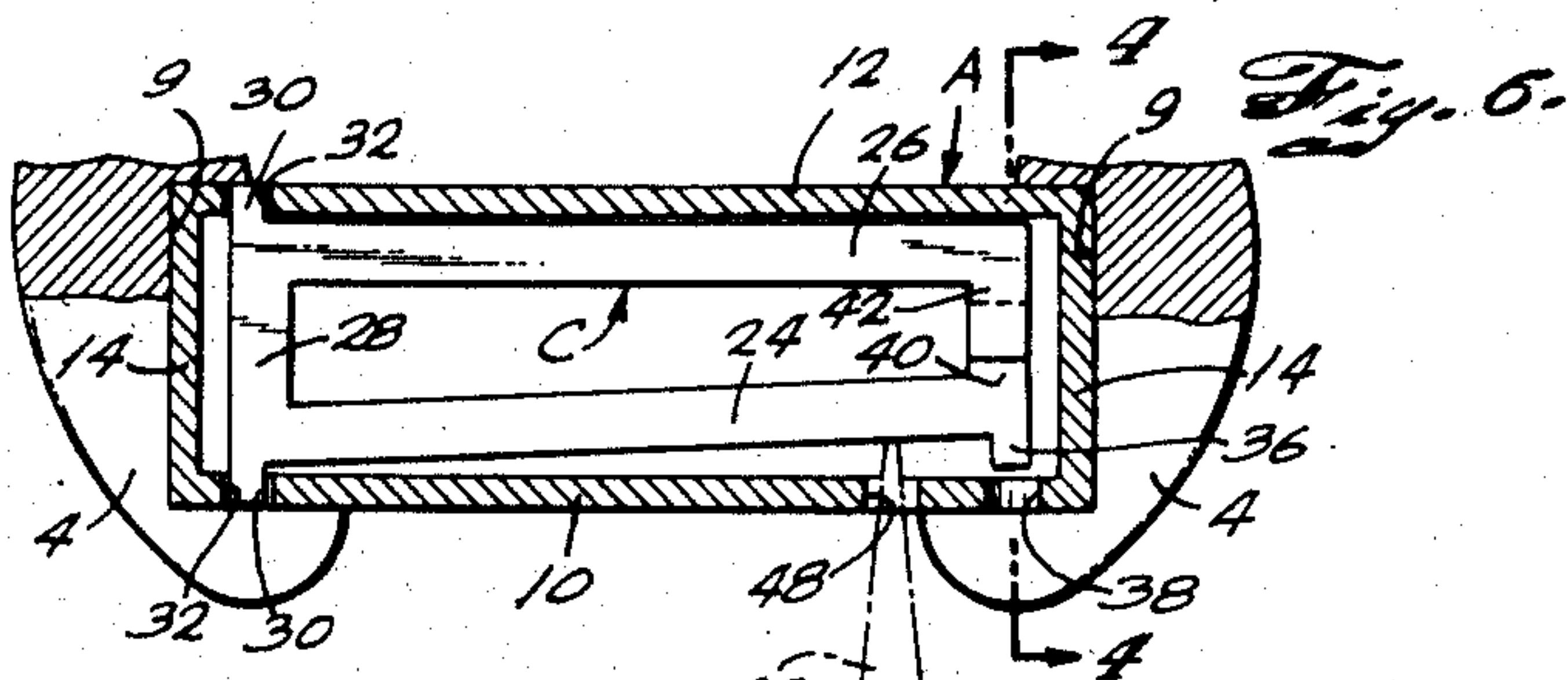


Fig. 6.

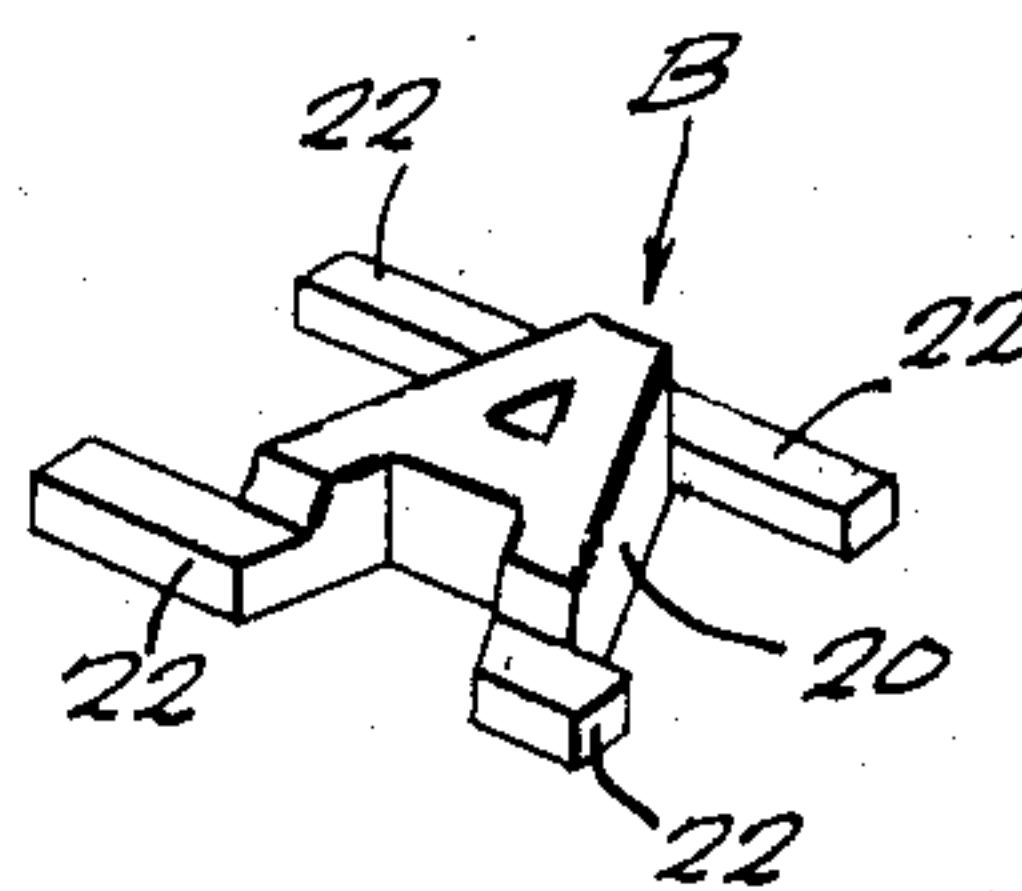


Fig. 8.

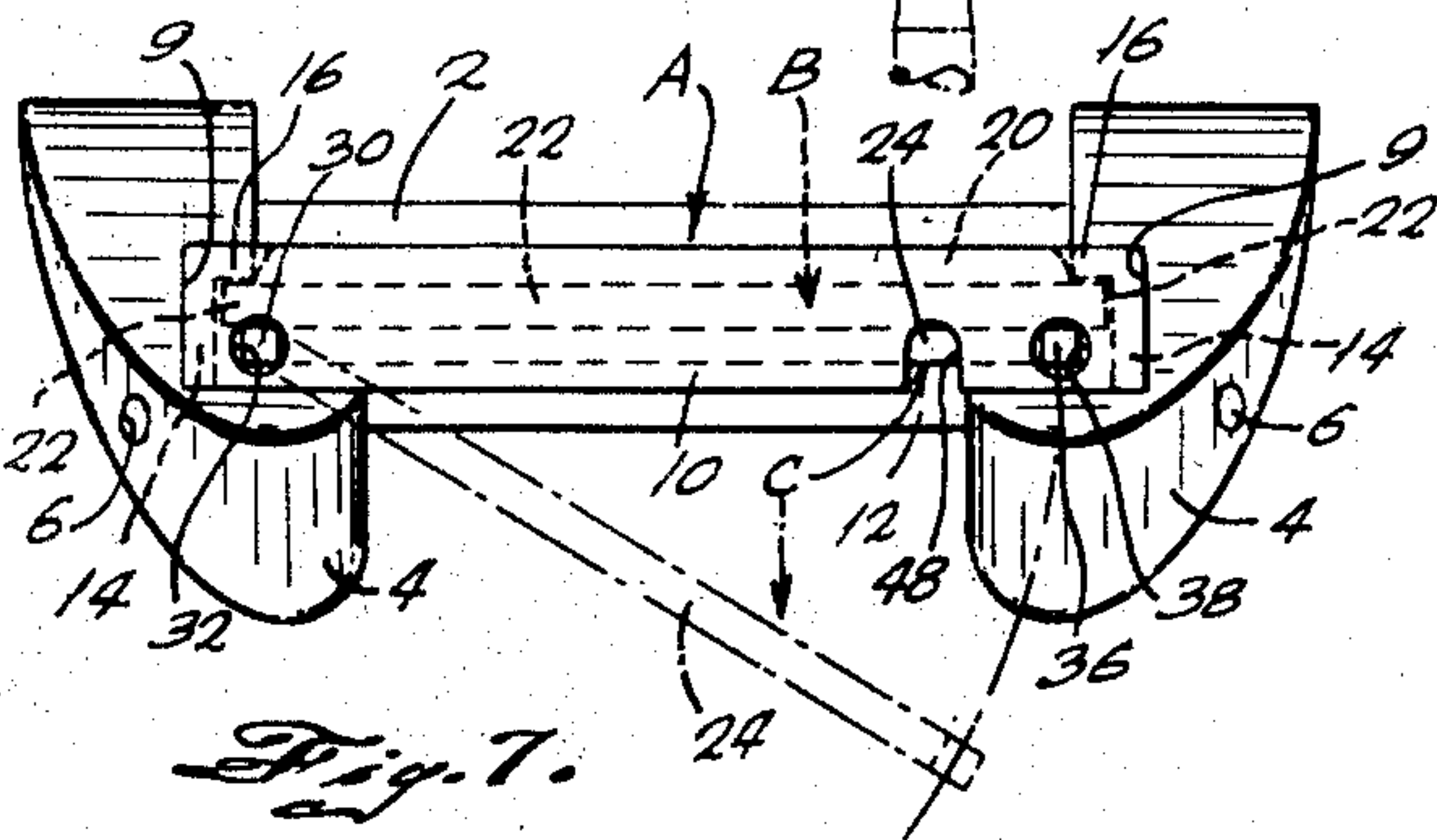


Fig. 7.

INVENTOR.
EDWARD KUPCHICK

BY
James and Franklin
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,653,442

RETAINER FOR INITIALS OR OTHER
INDICIA, AND A WATCH CONSTRUCTION
CONTAINING SAMEEdward Kupchick, Brooklyn, N. Y., assignor to
Benrus Watch Company, Inc., New York, N. Y.,
a corporation of New York

Application November 8, 1950, Serial No. 194,632

15 Claims. (Cl. 58—88)

1

The present invention relates to a structure into which indicia such as initials or the like may be placed for display purposes, said indicia being retained therein in a positive manner but being readily removable therefrom for replacement, and to a watch into which such a structure may be incorporated.

The use of initials or other interchangeable decorative or identifying indicia in various articles, and particularly in articles of personal adornment, is quite widespread. It has heretofore been thought that if such indicia are to appear integral with the object to which they are secured, they must be more or less permanently attached thereto. Consequently, the task of attaching such indicia is generally a relatively complicated one, involving the use of tools and equipment not readily available to the general public and the exercise of skills which the general public does not have. Hence the placing of initials or other indicia upon precious or semiprecious articles of adornment, such as bracelets, brooches, pins, watches or the like, has required the services and time of a jeweler. It would obviously be impossible for the vendor of such articles to keep on hand a sufficiently large inventory with initials already attached to accommodate all prospective purchasers thereof. He must, therefore, in order to sell a signet watch or bracelet, attach the appropriate initials thereto himself. This involves considerable time and trouble, and usually requires the services of a skilled artisan such as a watchmaker, thus preventing such an artisan from utilizing his time more profitably.

Upon damage to or deterioration of the initials or other indicia which have been secured to the ornamental object, it has in the past been necessary for the owner thereof to return to the place from which he purchased the object, that establishment generally performing the replacement of the indicia gratuitously in order to retain good will. This represents another source of loss on the part of the vendor, yet it could not in the past be avoided because of the difficulty involved in removing and replacing the indicia.

The problems involved become intensified when small objects such as watches are involved. If the indicia are to be positively attached to the watch, precise workmanship is called for, and this in turn militates against the performance of the necessary operations by members of the general public. Moreover, securing devices of the prior art which have been useable with

2

watches have necessarily been so fragile that only a limited number of removals and replacements could be carried out before failure or breakage of the housing structure.

5 The present invention has for its primary object the provision of a retainer for removable indicia in which the retaining mechanism is of a type such that it can be manipulated by persons without any particular skill and without requiring the use of specialized tools, to the end that removal and replacement of initials or other indicia may be made at will and whenever necessary either by the owner thereof or, in the case of the initial sale, by the salesman and not by a skilled artisan. Another object is to provide such a retainer which is particularly adapted for use with small objects such as watches, the retainer and the watch being so cooperatively constructed that the retainer is securable to portions of the watch case in such a manner as to blend unobtrusively therewith, thus achieving an impression of integralness which adds to the esthetic appeal of the watch.

25 This is achieved by forming the retainer in two parts, a housing into which indicia may be inserted and through a portion of which they may be viewed, and a closure articulately mounted within the housing so as to be positively held in a retaining position, but being readily accessible from the outside of the housing and being readily movable to a releasing position, permitting the indicia to be removed or inserted.

30 The closure is held in retaining position by interengagement between a projection on the closure and an aperture in the housing. When the projection is moved inwardly by means of pressure applied from the outside of the housing, it becomes disengaged from the aperture and the closure is thereby permitted to move to releasing position. In order to prevent the projection from snapping back into the aperture when it is released and before the closure has been moved away from its retaining position, cam surfaces are provided on the closure which, when the projection is moved inwardly and disengaged from the aperture, force the projection to move downwardly out of registration with its cooperating aperture and independently of the release of the closure. Consequently if the projection, after having been moved to that position, is released, it will not snap back into its cooperating aperture, and the closure can then be moved in a convenient manner to its releasing position. In order to permit a single operation to release the projection from its aperture and

3

at the same time move the closure to releasing position, a second aperture is provided which has an open bottom, the insertion of a tool through that second aperture causing the projection to move inwardly and then downwardly, as above described, the tool then being movable downwardly through the open bottom of the aperture so as to carry the closure with it to releasing position.

To the accomplishment of the foregoing objects, and such other objects as may hereinafter appear, the present invention relates to the construction of a retainer for removable indicia, and to a watch in which such a retainer is incorporated, as defined in the appended claims and as described in this specification, taken together with the accompanying drawings in which:

Fig. 1 is a top plan view of a signet watch, with bracelet attached, embodying the present invention;

Fig. 2 is a top plan view on an enlarged scale of the retainer structure as embodied in the watch of Fig. 1;

Fig. 3 is a cross-sectional view thereof taken along the line 3—3 of Fig. 5;

Fig. 4 is a cross-sectional view taken along the line 4—4 of Fig. 6;

Fig. 5 is a cross-sectional view taken along the line 5—5 of Fig. 3;

Fig. 6 is a view similar to Fig. 3 but showing the position which the parts assume when it is desired to move the closure to releasing position;

Fig. 7 is a side elevational view of the retainer of Fig. 2; and

Fig. 8 is a perspective view of one type of initial which might be used with the retainer of the present invention.

The retainer of the instant invention is here disclosed as embodied in a signet watch, for which it has been particularly designed insofar as details are concerned, but the broader aspects of the invention are not limited to that particular embodiment.

The watch comprises a case 2 having spaced lugs 4 at either end thereof, these lugs being provided, as is conventional, with horizontal apertures 6 through which a retaining pin or the like may be passed in order that the ends of bracelet 8 may be secured thereto. The tops of the lugs are provided with appropriate recesses 9 into which the retainer of the present invention is received as by a press fit, the retainer bridging the lugs 4 at the top of the watch above the bracelet 8 and blending with the configuration of the lugs 4 so as to give an appearance of integrality and substantiality.

The retainer, broadly considered, comprises a housing generally designated A into which indicia B in the form of initials or the like may be placed, the housing having a closure C pivotally mounted therein and movable between a retaining position within the housing A and spaced from the top thereof, the indicia B being retained in the housing A between the walls thereof and the closure C (see the solid lines in Fig. 7), and a releasing position extending out of the housing A and exposing the open bottom thereof, so that the indicia B can be removed or replaced (see the broken lines in Fig. 7).

The housing A is defined by front side wall 10, rear side wall 12, end walls 14 and a top lip or flange 16 inwardly directed from the walls 10, 12 and 14 and defining a restricted opening 18 at the top of the housing A. No bottom wall is provided, the housing A thus having an open

4

bottom. The rear side wall 12 is deeper than the front side wall 10 in the present embodiment, thus permitting the housing A to be received within the recesses 9 in the lugs 4, to conform to the configuration of the lugs 4 and to extend out therefrom in an attractive and decorative manner so that the front side wall 10 and a substantial portion of the open bottom of the housing A are exposed (see particularly Figs. 4, 5 and 7).

The indicia B, here shown in the form of individual letters of the alphabet, comprise a body portion 20 in the form of a desired letter and having a height such as to be received within the opening 18 at the top of the housing A, flanges 22 of less height than the body portion A and extending therefrom fitting inside the walls 10, 12 and 14 of the housing A so as to be passable through the open bottom thereof but not passable through the opening 18 at the top thereof. The flanges 22 thus position the body portion 20 of the indicia B within the opening 18 at the top of the housing A, but prevent the indicia B from moving out through the open top of the housing A. Since, as will be apparent from Fig. 8, the flanges 22 have a substantial length, and since they preferably fit relatively snugly between the front and rear side walls 10 and 12, they also control and fix the alignment of the body portion 20 within the housing A, causing the letter to have its vertical axis perpendicular to the longitudinal axis of the housing A. In the present embodiment three separate letters of the alphabet are employed, but it will be apparent that an integral unit comprising all three letters could also be employed, and that different numbers of letters could also be used.

The closure C, the function of which is to releasably retain the indicia B in the housing A, is preferably formed of an integral piece of resilient metal defining a pair of spaced parallel arms 24 and 26, connected at one end by a portion 28. The arms 24 and 26 extend parallel to and close to the front and rear side walls 10 and 12 respectively along substantially the entire length of the housing A, the flanges 22 of the indicia B resting on the arms 24 and 26. The length of the closure C is less than the distance between the watch lugs 4. Ears 30 are formed on the portion 28 and are received within oppositely disposed apertures 32 in the front and rear side walls 10 and 12 respectively near one end of the housing A and positioned below the undersurface of the lips 16 by a distance closely equalling the thickness of the flanges 22 on the indicia B, and also positioned inside the watch lugs 4. The closure C is thus pivotally mounted within the housing A so as to be movable between the retaining position illustrated in the solid lines of Fig. 7, in which position it effectively closes the open bottom of the housing A, and a releasing position pivoted downwardly between the watch lugs 4 in a clockwise direction from its retaining position, as indicated in the broken lines in Fig. 7, in which position the open bottom of the housing A is effectively exposed.

In order to hold the closure C in its retaining position the arm 24 is provided, at its free end opposite from the connecting portion 28, with an outward projection 36 which, when the arms 24 and 26 are in their normal parallel position, is received within an aperture 38 in the front side wall 10 inside the watch lugs 4.

It will be understood that so long as the projection 36 is received within the aperture 38, the resiliency of the arm 24 tending to keep it

5

thus engaged, the closure C will be positively held in its retaining position. When, as is here disclosed, the aperture 38 extends completely through the front side wall 10, the projection 36 can be disengaged from the aperture 38 by the application of suitable inward pressure thereon via the aperture 38 as by the use of any suitable narrow or pointed tool 40. However, in the absence of additional structure, such a manipulation would be relatively ineffective unless the closure C is positively moved downwardly at the same time that the projection 36 is pressed inwardly, for otherwise release of inward pressure on the projection 36 will merely permit that projection to snap back into the aperture 38. This requires two-hand operation, and moreover the closure C is so positioned as not to be readily accessible. Downward pressure on the indicia B might be employed, but this is not always possible, it being borne in mind that the top of the housing A need not be open, as at 12, but may have a corresponding transparent area through which the indicia B may be viewed.

In order to avoid this drawback, each of the arms 24 and 26, at their free ends, are provided with oppositely and inwardly directed fingers 40, 42, the finger 40 terminating in an outwardly and upwardly inclined cam surface 44 engageable with the outwardly and downwardly inclined cam surface 46 in which the arm 42 terminates (see Fig. 7). The surfaces 44 and 46 are preferably adapted to engage one another after the arm 24 has been moved inwardly a sufficient distance for the projection 36 to become disengaged from the aperture 38. The application of further inward pressure on the projection 36 will cause it to move downwardly with respect to the arm 26, upward motion of the arm 26 being prevented by the flanges 22 of the indicia B. Consequently, the projection 36 is moved downwardly out of registration with the aperture 38, and hence when pressure is released therefrom it will not snap back into the aperture 38, but will instead engage the inner surface of the front side wall 10. Thereafter the closure C may be grasped from the underside of the housing A, or in any other manner, and pivoted to releasing position.

In order to permit a single manipulation to move the closure C from its retaining to its releasing position, an additional aperture 48 is formed in the front side wall 10 inside the watch lugs 4, this aperture passing completely through and extending vertically all the way to the lower edge of the wall 10, being open at that edge. The upper portion of the aperture 48 is in line with the edge of the arm 24 when the closure C is in retaining position. When, as illustrated in Figs. 5 and 6, a pointed tool 40 is inserted through the aperture 48 so as to engage the arm 24, inward pressure exerted by the tool 40 will move the arm 24 inwardly (compare Figs. 3 and 6) until the projection 36 has become disengaged from the aperture 38. Further inward pressure will, through interengagement of the cam surfaces 44 and 46, cause the arm 24 to move downwardly, and as a result the pointed tip of the tool 40 can slip over the top of the arm 24. Downward movement of the tool 40 out through the open bottom of the aperture 48 will thus carry the arm 24 therewith and hence will positively cause the closure C to move to releasing position, exposing the

6

open bottom of the housing A and permitting the indicia B to be removed or replaced.

Thus a single operation comprising the movement inwardly and then downwardly of the tool 40 will effectively release the indicia B. The operation requires no special tools or special skill, and may be performed by anyone at any time. All of the parts of the structure are simple and susceptible of inexpensive mass production in drawing or stamping operations. The interaction of the cam surfaces 44 and 46 cooperate with the manner of mounting of the closure C within the housing A and with the shape and orientation of the aperture 48 through which the tool 40 may be inserted, in order to facilitate ready manipulation of the closure C.

While but a single embodiment of the present invention has been here disclosed, it will be apparent that many changes may be made in the detailed structure thereof without departing from the spirit of the invention as defined in the following claims.

I claim:

1. A retainer for removable indicia comprising a housing having side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which indicia cannot pass but through which said indicia can be viewed, and a closure articulately mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure being movable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position at least partially out of said housing, the open bottom being effectively exposed thereby, one of said side walls having an aperture therein and said closure having an arm resiliently mounted thereon and carrying a projection engageable in said aperture when said closure is in retaining position, said arm being accessible so that inward pressure thereon from the outside of said housing will cause said arm to be moved inwardly from said one of said side walls toward the other side wall and thus disengage said projection from said aperture, thereby permitting said closure to move to releasing position said arm and said closure having cooperating cam surfaces effective, when said arm is moved inwardly, to engage and cam said arm downwardly, so that when said arm is released after having been moved inwardly a predetermined distance, said projection will be out of registration with said aperture.

2. A retainer for removable indicia comprising a housing having side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which indicia cannot pass but through which said indicia can be viewed, and a closure articulately mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure being movable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position at least partially out of said housing, the open bottom being effectively exposed thereby, one of said side walls having a pair of spaced apertures therein, one of which extends through said side wall, and said closure having an arm resiliently mounted thereon and carrying a projection engageable in the other of said pair of apertures when said closure is in retain-

7

ing position, said arm then overlying said one of said apertures so as to be accessible there-through, pressure exerted on said arm through said aperture causing said arm to move inwardly from said one of said side walls toward the other side wall and thus disengage said projection from said other of said apertures, thereby permitting said closure to move to releasing position.

3. In the retainer of claim 2, cooperating cam surfaces on said arm and said closure effective, when said arm is moved inwardly, to engage and cam said arm downwardly, so that when said arm is released after having been moved inwardly a predetermined distance, said projection will be out of registration with said aperture.

4. The retainer of claim 2, in which said one of said apertures extends through said one of said side walls all the way to the lower edge thereof, so that a tool inserted through said aperture and exerting inward pressure on said arm can also be used, without withdrawal thereof, to positively move said closure to releasing position.

5. A retainer for removable indicia comprising a housing having side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which indicia cannot pass but through which said indicia can be viewed, and a closure pivotally mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure comprising a pair of arms extending substantially the length of said housing but spaced from one another laterally thereof, one of said arms being resilient and having a projection extending outwardly, each of said arms having fingers extending toward one another and terminating in cooperable cam surfaces effective, when said one of said arms is moved toward the other, to cam said one of said arms downwardly, said closure being pivotable within said housing between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position downwardly inclined with respect to and extending out of said housing, the open bottom being effectively exposed thereby, one of said side walls having an aperture therein in which said projection is engageable when said closure is in retaining position, said one of said arms being movable inwardly from said one of said side walls toward the other side wall so as to remove said projection from said aperture and permit said closure to move to releasing position, said cam surfaces interacting to move said one of said arms downwardly with respect to the other of said arms and thus position said projection out of registration with said aperture when said one of said arms is thus moved inwardly a predetermined distance.

6. A retainer for removable indicia comprising a housing having side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which indicia cannot pass but through which said indicia can be viewed, and a closure pivotally mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure comprising a pair of arms extending substantially the length of said housing but spaced from one another laterally thereof, one of said arms being resilient and having a projection extending outwardly therefrom, each of said arms having fingers extending toward one another and terminating in cooperable cam surfaces effective, when said one of said arms is

8

moved toward the other, to cam said one of said arms downwardly, said closure being pivotable within said housing between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position downwardly inclined with respect to and extending out of said housing, the open bottom being effectively exposed thereby, one of said side walls having a pair of spaced apertures therein, one of said apertures passing through said side wall, said projection being engageable in the other of said apertures when said closure is in retaining position, said arm then overlying said one of said apertures and being accessible therethrough, pressure exerted on said arm through said one of the said apertures moving said arm inwardly from said one of said side walls toward the other side wall so as to disengage said projection from said other of said apertures and permit said closure to move to releasing position, said cam surfaces interacting to move said one of said arms downwardly with respect to the other of said arms and thus position said projection out of registration with the other of said apertures when said one of said arms is thus moved inwardly a predetermined distance.

7. The retainer of claim 6, in which said one of said apertures extends through said one of said side walls all the way to the lower edge thereof, so that a tool inserted through said aperture and exerting inward pressure on said arm can also be used, without withdrawal thereof, to positively move said closure to releasing position.

8. An indicia-bearing watch comprising a watch case, a pair of separated lugs thereon, said lugs having opposed recesses open at the top, a retainer housing received within said recesses so as to bridge the space between said lugs, said housing having front and rear side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which said indicia cannot pass but through which said indicia can be viewed, said front side wall and a substantial portion of said open bottom being exposed between said lugs, and a closure articulately mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure being shorter than the distance between said lugs and mounted between said lugs so as to be movable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position at least partially out of said housing, the open bottom being effectively exposed thereby, one of said side walls having an aperture therein between said lugs and said closure having an arm resiliently mounted thereon and carrying a projection engageable in said aperture when said closure is in retaining position, said arm being accessible so that inward pressure thereon from the outside of said housing will cause said arm to be moved inwardly toward said other side wall and thus disengage said projection from said aperture, thereby permitting said closure to move to releasing position.

9. In the retainer of claim 8, cooperating cam surfaces on said arm and said closure effective, when said arm is moved inwardly, to engage and cam said arm downwardly, so that when said arm is released after having been moved inwardly a predetermined distance, said projection will be out of registration with said aperture.

10. An indicia-bearing watch comprising a

watch case, a pair of separated lugs thereon, said lugs having opposed recesses open at the top, a retainer housing received within said recesses so as to bridge the space between said lugs, said housing having front and rear side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which said indicia cannot pass but through which said indicia can be viewed, said front side wall and a substantial portion of said open bottom being exposed between said lugs, and a closure articulately mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure being shorter than the distance between said lugs and mounted between said lugs so as to be movable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position at least partially out of said housing, the open bottom being effectively exposed thereby, said front side wall having a pair of spaced apertures therein inside said lugs, one of said apertures extending through said side wall, and said closure having an arm resiliently mounted thereon and carrying a projection engageable in the other of said apertures when said closure is in retaining position, said arm then overlying said one of said apertures so as to be accessible therethrough, pressure exerted on said arm through said aperture causing said arm to move inwardly toward said rear side wall and thus disengage said projection from said other of said apertures, thereby permitting said closure to move to releasing position.

11. In the retainer of claim 10, cooperating cam surfaces on said arm and said closure effective, when said arm is moved inwardly, to engage and cam said arm downwardly, so that when said arm is released after having been moved inwardly a predetermined distance, said projection will be out of registration with said aperture.

12. The retainer of claim 10, in which said one of said apertures extends through said front side wall all the way to the lower edge thereof, so that a tool inserted through said aperture exerting inward pressure on said arm can also be used, without withdrawal thereof, to positively move said closure to releasing position.

13. An indicia-bearing watch comprising a watch case, a pair of separated lugs thereon, said lugs having opposed recesses open at the top, a retainer housing received within said recesses so as to bridge the space between said lugs, said housing having front and rear side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which said indicia cannot pass but through which said indicia can be viewed, said front side wall and a substantial portion of said open bottom being exposed by the said lugs, and a closure pivotally mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure comprising a pair of arms shorter than the distance between said lugs and extending along the length of said housing but spaced from one another laterally thereof, one of said arms being resilient and having a projection extending outwardly therefrom, each of said arms having fingers extending toward one another and terminating in cooperable cam surfaces effective, when said one of said arms is moved toward the other, to cam said one of said arms downwardly, said closure being mounted in said housing between said

lugs so as to be pivotable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position downwardly inclined with respect to and extending out of said housing between said lugs, the open bottom being effectively exposed thereby, said front side wall having an aperture therein between said watch lugs in which said projection is engageable when said closure is in retaining position, said one of said arms being movable inwardly toward said rear side wall so as to remove said projection from said aperture and permit said closure to move to releasing position, said cam surfaces interacting to move said one of said arms downwardly with respect to the other of said arms and thus position said projection out of registration with said aperture when said one of said arms is thus moved inwardly a predetermined distance.

14. An indicia-bearing watch comprising a watch case, a pair of separated lugs thereon, said lugs having opposed recesses open at the top, a retainer housing received within said recesses so as to bridge the space between said lugs, said housing having front and rear side walls, an open bottom through which indicia may be inserted thereinto, and a top having an area through which said indicia cannot pass but through which said indicia can be viewed, said front side wall and a substantial portion of said open bottom being exposed by the said lugs, and a closure pivotally mounted between said side walls and spaced from said top so that indicia may be retained in said space, said closure comprising a pair of arms shorter than the distance between said lugs and extending along the length of said housing but spaced from one another laterally thereof, one of said arms being resilient and having a projection extending outwardly therefrom, each of said arms having fingers extending toward one another and terminating in cooperable cam surfaces effective, when said one of said arms is moved toward the other, to cam said one of said arms downwardly, said closure being mounted in said housing between said lugs so as to be pivotable between a retaining position substantially parallel to and within said housing, the open bottom being effectively closed thereby, and a releasing position downwardly inclined with respect to and extending out of said housing between said lugs, the open bottom being effectively exposed thereby, said front side wall having a pair of spaced apertures therein between said watch lugs, one of said apertures passing through said front side wall, said projection being engageable in the other of said apertures when said closure is in retaining position, said arm then overlying said one of said apertures and being accessible therethrough, pressure exerted on said arm through said one of said apertures moving said arm inwardly toward said rear side wall so as to disengage said projection from said other of said apertures and permit said closure to move to releasing position, said cam surfaces interacting to move said one of said arms downwardly with respect to the other of said arms and thus position said projection out of registration with the other of said apertures when said one of said arms is thus moved inwardly a predetermined distance.

15. The retainer of claim 14, in which said one of said apertures extends through said front side wall all the way to the lower edge thereof, so that a tool inserted through said aperture

11

exerting inward pressure on said arm can also be used, without withdrawal thereof, to positively move said closure to releasing position.

EDWARD KUPCHICK.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date	
921,702	Howe -----	May 18, 1909	
1,400,666	Douglas -----	Dec. 20, 1921	10

Number
1,717,374
2,213,097
2,237,675
5 2,240,993

12

Name	Date
Dufau -----	June 18, 1929
Del Sesto -----	Aug. 27, 1940
Lazrus -----	Apr. 8, 1941
Lazrus -----	May 6, 1941

FOREIGN PATENTS

Country	Date
Austria -----	May 25, 1907