

UNITED STATES PATENT OFFICE.

WILBUR MARVIN CARPENTER, OF ST. LOUIS, MISSOURI.

CANE.

SPECIFICATION forming part of Letters Patent No. 396,027, dated January 8, 1889.

Application filed October 4, 1886. Serial No. 215,318. (No model.)

To all whom it may concern:

Be it known that I, WILBUR MARVIN CARPENTER, a citizen of the United States, residing in the city of St. Louis, and State of Missouri, have invented a new and useful Flail-Cane, of which the following is a specification.

My invention is intended to supply a new article of manufacture; and it consists in applying certain devices to a cane by means of which it may be instantly transformed into a powerful weapon of defense; and the object of my invention is to enable a person attacked by dogs or otherwise assailed to smite his assailants at a longer range than they are accustomed to or suspect. With this object in view I construct the cane in two main parts and attach them together by a joint. One part is a hollow tube inclosing the other part, which may consist of an elastic rod or flexible cord with a weighted end.

Referring to the accompanying drawings, in which similar letters refer to similar parts throughout all the views, Figure 1 is a vertical section of the top and bottom parts of the cane; Fig. 2, an elevation showing the cane as used in the act of striking. Figs. 3, 5, and 6 are details of parts. Fig. 4 is an elevation of the lower part, which is shown in section in Fig. 1. Figs. 7 and 8 are views showing a variation in the construction of the cane, showing how the rod to which the head is fastened may be attached to the foot of the cane by means of a hinge.

The staff A is made of any suitable material—in the present case metal—and in shape a hollow frustum of a cone; but it may be fluted or otherwise ornamented in various ways like the common cane. It is attached to a socket, B, which forms the lower half of the head of the cane, by means of the screw-thread *a*. The upper part of the head C is spherical and nicely fits the socket B at the joint *b*, while the lower part is circular and circularly tapering to a neck, *c*, which fits closely to the lower part of the socket B. It may be made solid and in one piece, or, as in the present instance, hollow, with a plug, D, screwed into the neck *c*. In the latter case the spherical top may be a shell of gold or other valuable or ornamental material joined to a less valuable base and neck, *c*, and filled with lead or other metal to give it weight. The circu-

larly-tapering part of the head C may be provided with barbs E. The elastic wire cord F, which may have barbs J, is attached to an eye, G, pendent from the plug D, and connects with the button or plunger H at the eye I.

The plunger H may be hollow or solid, or as in the present case, where the upper part is solid, while the lower part is hollowed out to the dotted curved line *d* and beveled slightly on the outer edge. The purpose of the plunger H is to hold the part C in place when used as a cane-head, and by sliding up against the bottom of the socket B to hold the part C and the cord F to the staff while being used as a whip or flail.

A cord or tape, K, of rubber or other material elastic longitudinally, may be connected to a pin, *e*, in the plunger H and to an eye, *f*, of a plug, L, held in the bottom of the cane by the screws *x x'*. The purpose of this cord or tape is to draw by means of its elasticity the part C of the cane-head back to its place directly after a blow shall have been struck. Two catches, M M', engaging with plunger H, hold the top part of the head C tightly to the socket B at the joint *b*. Figs. 5 and 6 are elevations of the inside of these catches, showing the position of the ears *g g' h l i*, while the elevation of the outside of the catch M is shown in Fig. 4. The outside of the catch M' is entirely similar. Pins N N' pass through the body of the cane and the ears *g g'*, serving as fulcra for the catches. The outside of these catches may be made flush with the staff A, or they may be set in deeper or project beyond the staff in any desired ornamental style. In the present instance they are flush, except at the lower ends, *m m'*, which project outward for the purpose of facilitating the application of the thumb and finger to the same when suddenly called upon to use the cane as a weapon of defense. The inside of the upper ends of these catches are beveled and held against corresponding bev-els, *nn'*, in the staff A by pressure of the spring O, the catches acting like levers with fulcra at *g g'*, as already intimated. Pressing in the ends *m m'* throws the upper ends outward and allows the plunger H to ascend; but to render the action of both catches sure when the end *m* or *m'* of only one catch is pressed

inward I construct the catches $M M'$ with a lever, o , having a fulcrum, p , and connecting-rods $q r r'$, adjusted in such a manner that when motion is given to only one catch a corresponding motion is produced in the other. Fig. 3 shows more clearly how the connecting-rods $q r r'$ and the lever o are joined. The rod q is curved in the center to allow the passage of the cord K , and is attached to the two ears l and i with a pin or rivet, s , and to the lever o with a pin or rivet, t . The two connecting-rods $r r'$ are attached to the lever o by a pin or rivet, u , and to the ear h by the pin or rivet v . The spring O is made fast to the staff A by one or more rivets, w .

To use my invention as a weapon of defense when attacked by any dangerous animal, as a dog, the bearer of the cane grasps the lower end and with the thumb and fingers presses in $m m'$ of the catches and at the same time strikes a blow. If the object should dodge the blow and attempt to seize the rod or wire cord with its teeth or paws, it would be difficult and unpleasant to hold by reason of the barbs before described.

I do not wish to be understood as confining myself to the exact construction herein described and shown, as the desired object may be attained in various other ways without changing the general plan of the invention.

Figs. 7 and 8 show how the construction may be varied in another way. The upper part of the cane—in this case about a hand's breadth below the head—which may be made hollow, so as to be light, consists of a shell like the half of a hollow tube. Into this half-cylinder a leaden end, P , of an elastic rod, Q , fits.

The elastic rod Q has its outer surface curved to be of the same form as the cane and the inner side triangular, so as to fit into a slot in the cane similar in shape. The edges of the elastic rod may be sharp in the place of having barbs. The lower end of the triangular rod is hinged at S to the bottom of the cane. The triangular edge of the elastic rod toward the center of the cane has in three or four places a part—say half an inch long—removed, as at T , and the lower end of each notch has a recess, so as to make a hook. The leaden end has a similar notch, V . Near the center of the cane is a rod, W , which slides up and down in guides $X X'$. The upper end of this rod is carried outward and passes along the leaden slug P in a slot in the shell of the cane and terminates in a finger-piece, Y , near the head of the cane, so as to be pulled up or pressed down by the finger. The rod has hooks Z , which will fit into those of the elastic rod when pressed down and slip out when pulled up. The hooks are beveled toward their free ends, so the elastic rod may be drawn closely to the body of the cane, all the surface of which may be painted or grained in stripes or roughened, so the lines of junction may not be visible. The elastic rod is tempered, so that it has a tendency to maintain a

slight curve with the ends outward. It will therefore be seen that when the inner rod is pulled upward by its finger-piece the leaden end of the elastic rod will spring out of its recess a few inches, and may be thrown at an object a few feet away and afterward used as a flail with a loaded swingel.

Since the elastic rod has a tendency to curve with the convexity toward the cane, it may be held in its slot merely by having a steel socket set into the upper part of the leaden end, into which a pin fits, the upper end being attached to the finger-piece before described. The lower part of the rod W and the hooks in the elastic rod may then be dispensed with.

I do not limit the application of my invention to canes, as it may be applied also to umbrella and parasol handles and every kind of cudgel.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. As a new article of manufacture, a cane or like article composed of a suitable case, a detachable head, and a flexible connection between said head and the cane-body, whereby the head is allowed a certain range beyond the end of the cane, and is thereby adapted to be used as a weapon of defense, substantially as described.

2. A cane or like article consisting of a case, a detachable head, and a connection between said head and the cane, whereby the said head is allowed a certain range of movement beyond the end of the cane, the connection between the head and cane being formed with spurs or teeth, substantially as described.

3. A cane or like article consisting of a case, a head detachable therefrom having a smooth exterior and teeth or like projections upon its under surface, and a connection between said head and cane allowing limited movement of the head, and also provided with spurs or projections throughout its extent, substantially as described.

4. A cane or like article consisting of a body portion, a head detachable therefrom, a connection between said head and the cane, and elastic means for automatically withdrawing said head to its normal position after use, substantially as described.

5. A cane or like article consisting of a case, a head detachably connected therewith, positive means for holding said head in position, and a hand device for releasing the holding device, whereby the said head may have a limited movement to be used as a weapon of defense, substantially as described.

6. A cane or like article consisting of a suitable case, a detachable head, a flexible connection between said head and cane, holding-catches for keeping the head in its normal position, and releasing means in connection with each other, whereby in the operation of one upon one side of the cane the other will be automatically operated to release the head, substantially as described.

7. In a cane or other staff having a button

or plunger, as shown, an elastic cord connecting said button or plunger to the bottom of the cane, substantially as shown.

5 8. A cane or like article consisting of a suitable case, a detachable head, a sliding block within the cane, the connection between said sliding block and the cane-head, the flexible connection between said sliding block and the cane-body, and holding-catches for retaining the block in position until released, substantially as described.

10 9. In a cane or other staff having a button or plunger, two catches and their connecting

rods and levers, and a spring, substantially as shown.

15 10. A cane or like article having a body portion and a weighted part extensibly connected to said body portion, and a catch, as M, for holding said weighted part in place, said catch terminating in a handle, substantially as described. 20

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Witnesses:

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