

No. 626,651.

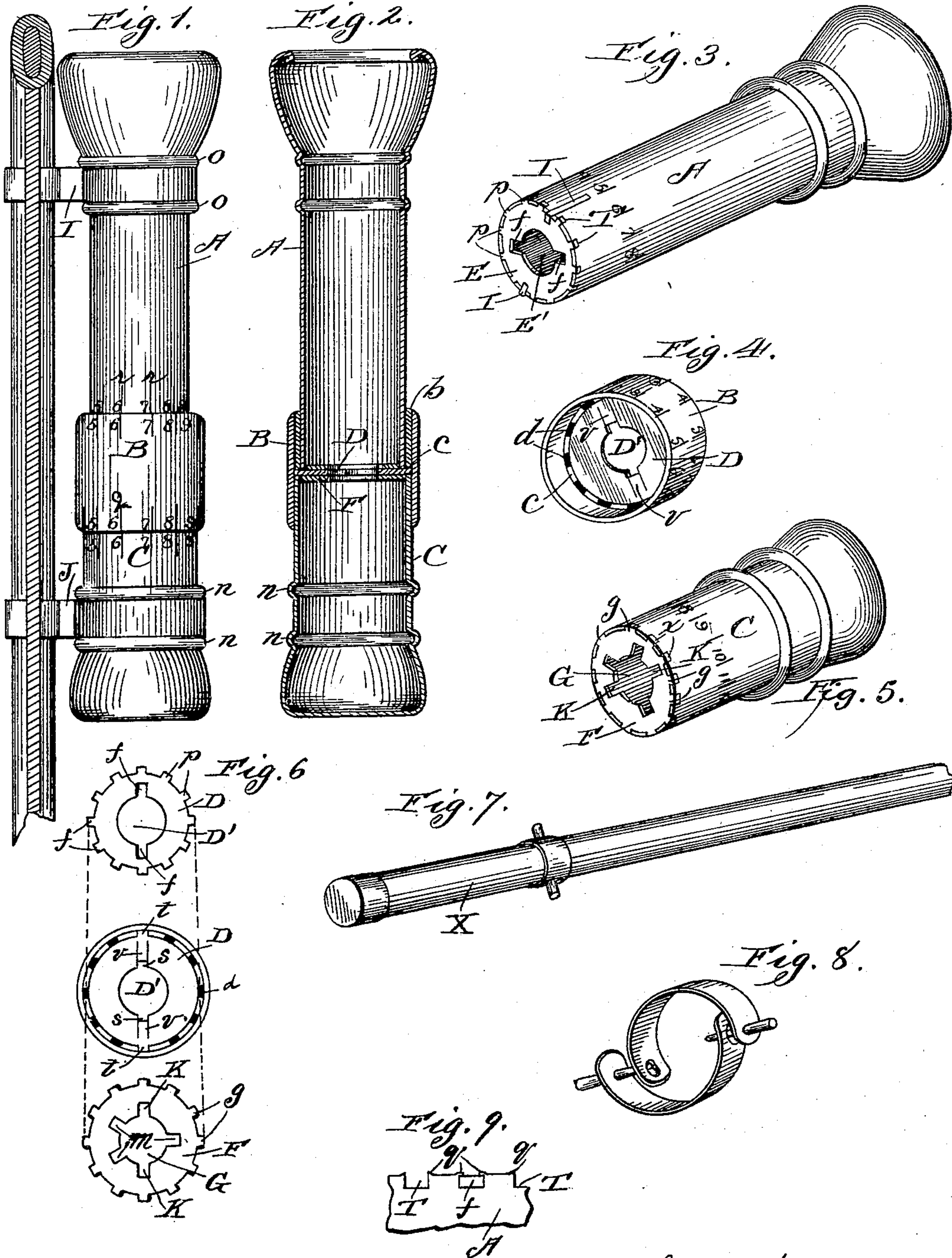
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J. H. COOPER.

WHIP SOCKET.

(Application filed Feb. 4, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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WHIP-SOCKET.

SPECIFICATION forming part of Letters Patent No. 626,651, dated June 6, 1899.

Application filed February 4, 1898. Serial No. 669,035. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. COOPER, a citizen of the United States, and a resident of Plano, Kendall county, Illinois, have invented certain new and useful Improvements in Whip-Sockets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of my invention is to provide a simple, cheap, and easily-constructed whip-socket the parts of which are so constructed that they constitute a combination-lock, which to the person understanding it could be easily and quickly manipulated either to secure and prevent the withdrawal of the whip or to permit the free removal thereof from the socket whenever desired, but which a stranger would find difficult to solve. This I accomplish by the means hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of said improved whip-socket, showing it secured to the dashboard of a vehicle. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a perspective view of the uppermost section of said socket. Fig. 4 is a perspective view of the central section thereof. Fig. 5 is a perspective view of the lower section of the same. Fig. 6 shows a plan view, the three tumbler-plates removed from their respective sections and placed so as to illustrate plainly their relative positions. Fig. 7 shows a perspective view of a whip-handle, having studs projecting therefrom. Fig. 8 shows a perspective view of a clip for locating and securing studs in position. Fig. 9 is a detail view showing a fragment of the lower end of the upper section and illustrating modified means for securing the tumbler-plate in position.

In the drawings, A represents the upper cylindrical section, B the central cylindrical section, and C the lower cylindrical section, of my invention.

The central section B is made of sheet metal or other suitable material and is slightly greater than the other two sections and couples the same together. The diameter of the bore of its upper half is reduced and made slightly less than its lower half by the intro-

duction therein of a suitable bushing *b*. The lower annular edges of this bushing *b* form a shoulder *c* about midway the length of the bore of said section B and is provided with a series of twelve corresponding notches *d*, located at equal intervals apart. Inserted in the wider lower end of this section B is a circular tumbler-plate D, which is pushed upward until two diametrically opposite lugs *tt*, projecting radially from its outer circumferential edges, bear against said shoulder *c* and enter diametrically oppositely located notches *d* therein to prevent circuitous displacement thereof. This tumbler-plate D is provided with a round central opening D' of a diameter corresponding to or slightly greater than the handle of the whip X to be inserted therethrough, as will hereinafter more fully appear, and it is provided, by making parallel slits radially outward from this central opening D' a suitable distance, with spring-tongues *vv*, the inner ends of which terminate at a greater distance from the center of the plate D than the edges of the opening D' thereof to form recesses *ss*. By pushing plate D downward until its lugs *tt* are out of the notches *d* its position can be shifted circuitously, as desired, and then pushed back against the shoulder *c* again and fixed in such altered position by reason of its lugs *tt* entering two other oppositely-located notches of series *d*. The upper section A of the socket is likewise made of sheet metal or other suitable material and corresponds in diameter to the bore of the upper half of section B, which its lower end enters and which it freely turns in. Its lower annular edges are provided with a series of notches T T, which are of a depth corresponding to the thickness of the tumbler-plate E and are located at equal intervals apart. Tumbler-plate E is a circular plate of a diameter corresponding to the bore of this upper section and is provided with a series of twelve lugs *p*, projecting radially from its outer circumferential edges at equal intervals apart a distance corresponding to the thickness of the metal or other material of which said upper section is made. These lugs *pp* are of such dimensions that they fit snugly in the notches T T, thereby preventing the circuitous displacement of this plate E, which is held in place and prevented from falling out of

said upper section endwise by dogs I I, consisting of a thin strip of spring metal secured longitudinally to the lower end of said upper section in such manner that their lower end portion extends beyond the lower end of said section and is bent inward to confine said plate E, as shown. If desired, the outer corners of the notches T T might be provided with slight downwardly-extending protuberances *q q*, which after plate E had been inserted in position could be upset over lugs *q*, so as to confine the same and prevent the withdrawal of said plate E. I prefer the use of the dogs I, however, because the upper end only being secured to the upper section their lower ends can be sprung outward and plate E removed from its seat by being pushed downward and its position shifted and then placed back in place again whenever desired. Plate E is also provided with a concentric circular opening E', that corresponds in diameter to the opening D' of plate D, and it is provided with diametrically oppositely located recesses *f*, the depth of which is slightly greater than that of recesses *s s*, made in the edges of opening D' of plate D, to which, however, they correspond in width.

The lower section of the whip-socket is preferably made of the same material as the upper and central section of the same. Its lower end is suitably closed and its diameter corresponds to that of the lower half of the bore of the central section, in which its upper end is inserted and is rotatable therein. The upper annular end edges of this lower section are provided with a series of twelve notches *x*, which are substantially similar in every respect to the notches T T, made in the lower annular edges of the upper section, and inserted in the upper end of this lower section is a tumbler-plate F, which is of a diameter corresponding to the diameter of the bore of said lower section and has a series of twelve lugs *g* projecting from its outer circumferential edges a distance corresponding to the thickness of the material of which the sides of the said lower section are made and fit within the notches *x* in the same manner that lugs *p* of plate E fit into the notches T of the upper section. This plate F is permanently or removably fixed in position in the same manner and by the same means hereinbefore described with reference to plate D—namely, by spring-dogs, as shown in the drawings, or by providing the corners of the notches *x* with protuberances which can be upset over the lugs of said plate F. Plate F is also provided with a concentric central opening G, which is of the same diameter as the opening E' of plate E and the opening D' of plate D. The edges of this opening G of plate F are provided with a series of radially-extending recesses—say five. The drawings show this opening G as provided with five recesses, two only, K K, of which are shown to be located diametrically opposite each other. The other three are in such position that a line

drawn diametrically through the center of the opening and any one of them will not intersect any other recess. These recesses K and *m* are of the same dimensions as the recesses *f* of the plate E; but the recesses *m* are merely “false” indentations, which are intended to mislead the uninitiated, and recesses K K can alone be utilized for the purposes of my invention.

The handle of the whip X, used in connection with my improved whip-socket, has its lower end provided with a suitable band of metal or other material having diametrically opposite studs projecting therefrom. The diameter of this band must not be greater than the diameter of the openings D, E, or G of the tumbler-plates and the diameter and reach of the studs must be such that when the recesses K of plate G and *f* of plate E and *s* of plate D are in alinement and in the same diametrical plane said studs can be inserted down into the lower section of the socket through said tumbler-plates or withdrawn out through said plates and out of the socket when desired.

As the diameter of the handles of different whips differ somewhat, I prefer to provide an expansible band for it which can be expanded or contracted in diameter to fit to the handle of any whip. In the drawings this is shown to consist of two circular strips of thin metal, the length of each of which exceeds a semicircle, so that when brought into relative position their ends lap past each other. One end of each of said strips is provided with a suitable opening and the opposite end with a longitudinally-elongated hole, and when in their proper positions the elongated hole in one of said strips will come under and be in radial alinement with the smaller opening in the overlapping end of the other strip. By driving a suitable pin through the radially-alining openings in the said strips said strips will be secured to the handle, and the outer ends of said pins will serve as studs on the whip-handle to enable it to be used in conjunction with my improved whip-socket.

The three cylindrical sections of my improved whip-socket are assembled in such manner that each may be turned independently of the other by means of an upper and a lower clip I J, respectively, surrounding the upper section between circumferential beads *o o* and surrounding the lower section between circumferential beads *n n* and securing the same to the dashboard of the vehicle in any suitable manner. I do not claim any particular kind of clip for securing the upper and lower sections of the whip-socket to the dashboard, so long as they assemble the three sections together in the manner shown in Figs. 1 and 2 of the drawings and permit of the same being independently and easily revolved by hand; nor do I desire to be confined to the exact means hereinbefore described for providing the handle of the whip with laterally-projecting studs, as it is obvious a mere peg

could be driven into the handle and made to answer the purposes of any invention to a certain extent, although in not as satisfactory a manner as the means hereinbefore described.

5 In operation I revolve the upper, the center, and the lower sections of the whip-socket in such manner as to bring the recesses *k s f* of the tumbler-plates in said sections in the same diametrical plane and then insert the
10 whip-handle into the socket and turn it until the laterally-projecting studs of the handle register with said recesses, whereupon by pressing down upon the whip the portion of the handle from which the said studs project
15 passes down into the lower section. By turning the said sections or any one of them so as to move the recesses in their respective tumbler-plates out of alinement, the studs, being unable to pass through them, effectually
20 prevent the withdrawal of the whip. By turning the sections again, so as to bring said recesses in alinement, the whip can be easily withdrawn. The spring-tongues *v v* of plate
25 D provide a certain amount of resistance to the passage of the studs of the whip-handle through the tumbler-plates even when the recesses are in alinement, and thus will support the whip in such position that it can be easily removed even when the studs are above
30 the tumbler-plates and said recesses aline.

In order to direct the eye of the operator when turning the sections of the whip-socket so as to bring the recesses of the tumbler-plates in alinement when it is desired to lock
35 or unlock the whip, I have provided the exterior surface of the central section with twelve graduations, consisting of longitudinal lines *r*, located at equal distances apart and intersected by the diametrical planes intersecting notches *d* in shoulder *c* of its bushing
40 *b*, which graduations are consecutively numbered from "1" to "12," inclusive, and I also provide the exterior surface of the adjacent ends of both the upper and lower section with twelve graduations, those, *r*, of the
45 former being intersected by the same diametrical planes intersecting notches *T* thereof, and those, 2, of the latter, *C*, being located an equal distance apart and intersected by the same diametrical planes intersecting notches
50 *x* in its upper edges. The graduation in both upper and lower sections are consecutively numbered by the numerals "1" to "12," inclusive. Now by bringing the graduations of
55 each section that are in the same diametrical plane as the "true" recesses of the respective tumbler-plates in vertical alinement said true recesses will aline and the whip can be locked or unlocked, as hereinbefore explained; but
60 by turning these said sections so that the said three graduations are out of vertical alinement the tumbler-plates close the socket to the free passage of the whip-handle to or from the lower section.

65 I do not desire to be confined to the exact means hereinbefore described for securing the tumbler-plates to their respective sections,

nor do I wish to be confined to the employment of the tongues *v v* in plate D, although I much prefer their use.

What I claim as new is—

1. The combination with a whip, having its handle provided with lateral projections, of a whip-socket, consisting of an independently-revoluble upper section, an independently-revoluble lower section, and an independently-revoluble intermediate or central section, coupling the said upper and lower sections together; each of said sections being provided with means which when each are respectively turned on their own axis to stated relative positions will open said lower section to the insertion or removal of said whip-handle, and when away from said stated relative positions will close said lower section to the insertion or removal of said handle.

2. The combination with a whip having its handle provided with lateral projections, of a whip-socket, consisting of an upper section, a tumbler-plate secured in the lower end thereof, having a central opening, with radial recesses in the edges of said opening, a lower section, a tumbler-plate secured in the upper edges of the same, and having a central opening therein, the edges of which are provided with radial recesses, an intermediate or central section, coupling said upper and lower sections together in such manner that each may be revolved independently on its own axis, a tumbler-plate secured in the bore of said central section, about midway its length, which is provided with a central opening having radial recesses in its edges, as set forth.

3. The combination with a whip having its handle provided with lateral projections of a whip-socket consisting of an upper section, a removable tumbler-plate secured in the lower end thereof having a central opening which is provided with radial recesses in its edges, a lower section, a removable tumbler-plate secured in the upper edges of the same having a central opening therein the edges of which are provided with radial recesses, an intermediate or central section the upper half of the bore of which is slightly less in diameter than the lower half of the same which couples said upper and lower section together in such manner that each section may be revolved independently on its own axis, a tumbler-plate in the bore of said central section which is secured midway the length of said bore by impact of the upper end of the lower section, which tumbler-plate is provided with a central opening having radial recesses in its edges, as set forth.

4. The combination with a whip having its handle provided with lateral projections, of a whip-socket consisting of an independently-revoluble upper section, a tumbler-plate secured in the lower end thereof which has a central opening provided with two diametrically opposite recesses in the edges thereof, a lower section which is independently revolu-

ble on its own axis, a tumbler-plate secured in the upper edges of the same which has a central opening therein the edges of which are provided with more than two radial recesses which are so arranged that but two of said recesses are diametrically opposite each other, an intermediate or central section which is independently revoluble on its own axis and which couples the said upper and lower section together in such manner that each may be revolved freely, a tumbler-plate secured in the bore of said central section about midway its length which is provided with a central opening having two diametrically opposite recesses made in the edges thereof, as set forth.

5. The combination with a whip having its handle provided with a lateral projection, of a whip-socket consisting of an independently-revoluble upper section, a tumbler-plate secured in the lower end thereof having a central opening the edges of which are provided with radial recesses, an independently-revoluble lower section, a tumbler-plate secured in the upper edges thereof and having a central opening in it the edges of which are provided with radial recesses, an intermediate or central section which is independently revoluble and couples the upper and lower sections together, a tumbler-plate secured in the bore of said central section about midway its length which is provided with a central opening and is provided with radially-arranged spring-tongues located diametrically opposite each other in such manner that their free ends terminate to form recesses in the edges of said central opening, as set forth.

6. The combination with a whip having its handle provided with lateral projections, of a whip-socket consisting of a cylindrical upper section the lower edges of which are provided with a series of notches and the lower exte-

rior portions of which are provided with graduations in vertical alinement with said notches, a tumbler-plate corresponding in diameter to the bore of the lower end of said upper section and provided with lugs projecting from its outer circumference entering said notches, said tumbler-plate having a central opening provided with radial recesses in its edges, a lower independently-revoluble cylindrical section the upper end edges of which are provided with a series of notches therein and the upper exterior portions of which are provided with graduations in alinement with said notches, a tumbler-plate having lugs projecting from its outer circumference which enter said notches and which is provided with a central opening therein the edges of which are provided with radial recesses, an intermediate or central independently-revoluble cylindrical section the upper half of the bore of which is less in diameter than that of the lower half thereof so as to provide a shoulder about midway the length of the bore of said section which is provided with a series of notches therein, said central section having its exterior circumference provided with a series of graduations corresponding in number to the notches made in the bore of said section and in the same diametrical plane thereas, a tumbler-plate secured in the bore of said central section and provided with lugs projecting from its circumference which enter the notches in the bore of the same and having a central opening therein having radial recesses in its edges, as and for the purpose set forth.

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Witnesses:

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