

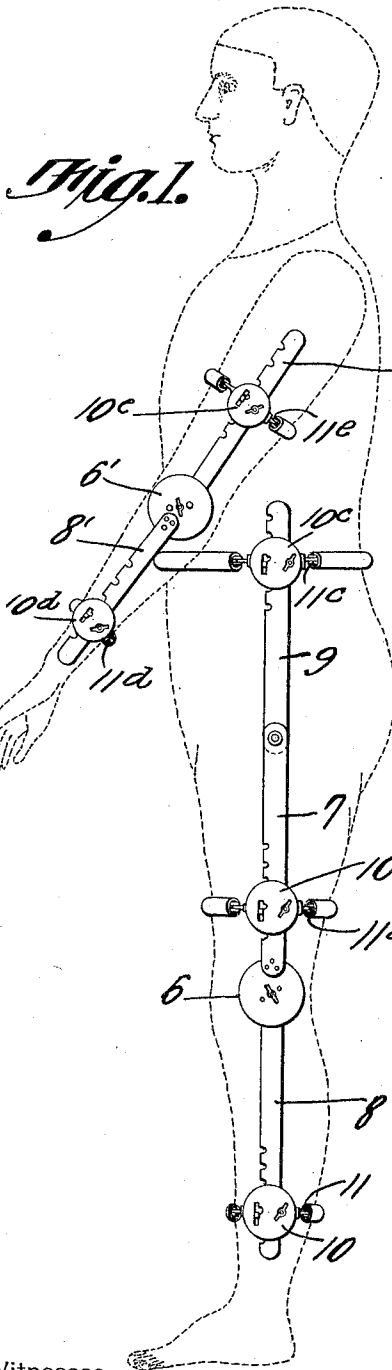
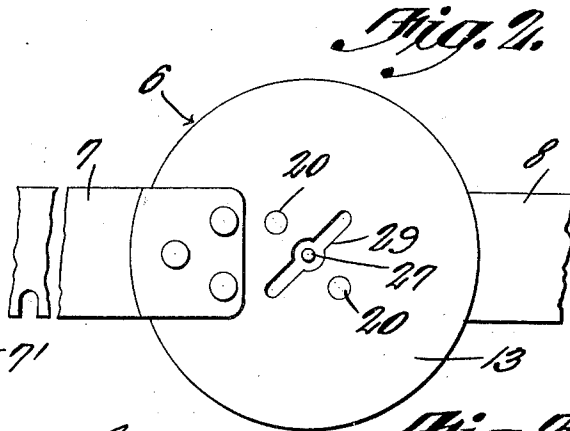
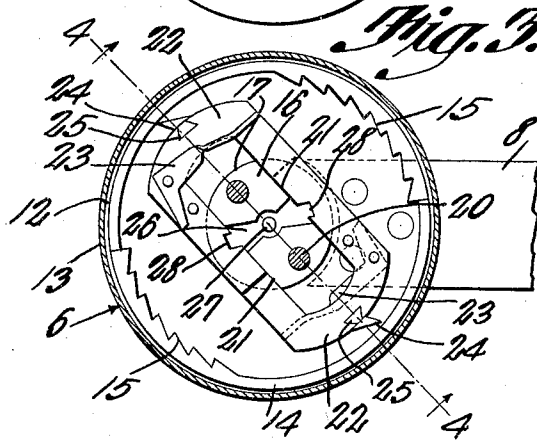
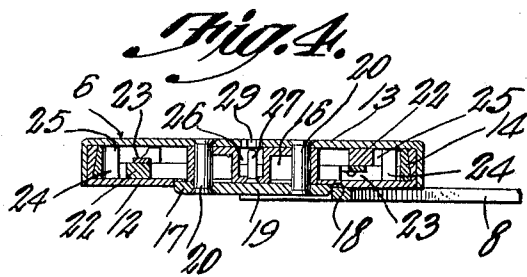
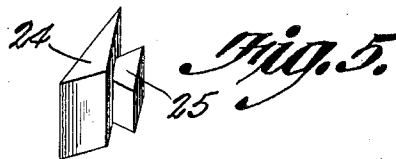
F. C. NAGLE.

GYVE.

APPLICATION FILED FEB. 17, 1913.

1,082,230.

Patented Dec. 23, 1913.



Witnesses

J. P. Dorem
S. Willard

Fredrick C. Nagle Inventor
by *C. A. Knowlton* Attorneys

UNITED STATES PATENT OFFICE.

FREDRICK COLOSSUS NAGLE, OF KEITHVILLE, LOUISIANA.

GYVE.

1,082,230.

Specification of Letters Patent.

Patented Dec. 23, 1913.

Application filed February 17, 1913. Serial No. 749,003.

To all whom it may concern:

Be it known that I, FREDRICK C. NAGLE, a citizen of the United States, residing at Keithville, in the parish of Caddo and State of Louisiana, have invented a new and useful Gyve, of which the following is a specification.

The present invention appertains to gyves and is particularly an improvement over the gyve disclosed in my former Patent Number 941,942 issued November 30, 1909.

It is the object of the present invention to provide a fetter or gyve applicable to the limbs of the human body which shall be operable to ordinarily permit free movement of the members of the limb within certain limits, but which shall lock the members of the limb when such limit is passed. In other words, the present invention aims to provide a device of the character indicated attachable to the arm or leg of a person so as to ordinarily permit the limited use of the arm or leg, such for instance, as in walking, but which shall lock the arm or leg should the wearer attempt to run, strike another person or the like.

The present invention is especially designed for use on prisoners, maniacs or other persons under commitment, in order that they may ordinarily be permitted to have limited locomotor movements, and in order to prevent them from running or from using their limbs otherwise, beyond certain limits.

The invention is also adapted for locking the limbs in such position that they may not be employed until released or liberated by means of a key.

This invention also aims to provide a device of the character indicated of novel and improved construction which shall possess a high degree of utility, reliability and efficiency.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention has been illustrated in its preferred embodiment in the accompanying

drawing, wherein similar reference characters have been employed to denote corresponding parts and wherein:—

Figure 1 is an illustration of a human body provided with the gyves. Fig. 2 is a fragmental face view of the gyve or of the lock proper for the joint of the limb. Fig. 3 is a view of the device illustrated in Fig. 2 showing the near face cut away. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3. Fig. 5 is a perspective view of one of the teeth of the dogs or pawls.

In carrying out the present invention, reference being had to the accompanying drawing, there is provided a novel form of lock designated by the numeral 6 which is adapted to be disposed at the joint of the limb, and which may be conveniently termed or denominated the joint lock or limb lock. As illustrated in Fig. 1, the lock 6 is disposed at the knee joint of the lower limb and has the sections 7 and 8 secured to the respective parts thereof, the parts of the casing of the lock being adapted to rotate. The section 7 is adapted to extend along the thigh or femur bone of the wearer while the section 8 is adapted to extend along the lower limb proper or the calf to the ankle. A section 9 is pivoted to the upper end of the section 7 and is adapted to extend along the hip of the wearer or above the waist line. Fig. 1 also illustrates a lock 6' applied to the elbow of the arm, and having the respective sections 7' and 8' attached to the parts of the casing of the lock. The section 7' is adapted to extend along the upper section or humerus, while the section 8' is adapted to extend along the forearm to the wrist.

From the foregoing, it will be manifest, without further explanation, that the present appliance may be attached to either the upper or lower limbs with equal propriety, and it will therefore only be necessary to describe one of the locks in detail, the two locks being precisely the same, with the exception of the respective sections attached to the parts of the casing of the lock which must be of suitable length to accommodate the upper and lower limbs, as will be apparent.

Upon the respective sections 8, 7, 9, 8' and 7', there are adjustably mounted the locks 10, 10^b, 10^c, 10^d, and 10^e, and to the locks are

attached the respective ends of chains or flexible members 11, 11^b, 11^c, 11^d and 11^e. These locks form the subject matter of a co-pending application, Serial Number 749,002, filed Feb. 17, 1913, and need not be described or illustrated in detail in the present application. The locks 10, 10^b, 10^c, 10^d and 10^e are adjustably mounted on the respective sections and are designed to lock at various adjusted positions on the sections as well as locking the free ends of the chains or flexible members. These chains or flexible members are preferably covered with rubber tubing or the like, so as to protect the wearer from being chafed or otherwise injured. Thus, the chains or bands 11, 11^b, and 11^c are adapted to encompass the ankle, the lower portion of the thigh, and the wrist, respectively, so as to hold the sections 7, 8 and 9 in operative position, the said sections being capable of swinging movements to permit the movement of the lower limb. In a like manner, chains or bands 11^d and 11^e are adapted to encompass the wrist and humerus, respectively, so that the respective sections will move with the members of the arm. The locks 10, 10^b, 10^c, 10^d and 10^e are adjustably mounted on the respective sections as above indicated, in order that the chains or flexible members may be properly positioned to most effectively hold the gyves in position upon the limbs.

Coming specifically to the joint or limb lock, the same embodies a casing comprising two rotatable parts, or an inner cap 12 and an outer cap 13 telescoping thereover. The respective sections 8 and 7 have their ends riveted or otherwise secured to the faces of the parts 12 and 13 of the casing, in order that when the sections are swung relative to each other, the parts of the casing will be rotated upon each other.

Within the part or cap 12 there is fitted a ring or annulus 14, the same fitting snugly within the flange or rim of the part 12. The flange of the part 12 is undercut slightly, as seen in Fig. 4, and the periphery of the ring 14 is slightly beveled to fit within the undercut portion so as to retain the ring into position, and the ring is also preferably constructed of four sections or is split at points throughout its length. The ring 14 or two diametrical opposed sections thereof, are each provided with a series of ratchet teeth 15, which face in the proper direction in order that the lock will operate in manner hereinafter described.

A guide 16 is disposed concentrically within or between the parts of the casing, the same being circular at one side and fitting within an opening 17 provided in the part 12. An annular rabbet 18 is provided around the opening 17, in which is seated a disk or plate 19. A pair of rivets or securing members 20 are passed through the

disk 19, guide 16 and the face or part 13 of the casing, in order to secure the parts or faces of the casing together and in order to secure the guide 16 to the face or part 13 of the case.

The guide 16 is provided with the parallel edges 21 within the casing, and a pair of oppositely disposed U-shaped pawls or dogs 22 have their arms straddling the guide 16 and working snugly against the edges 21 so that the pawls or dogs are constrained to slide radially or on a diametrical line. Each of the pawls or dogs 22 is preferably stamped from sheet metal and embodies a long arm and a short arm, the long and short arms of one pawl overlapping the short and long arms of the other pawl. A leaf spring 23 is secured to each pawl 22 adjoining the butt end of the long arm and has its free end bearing against the free end of the long arm of the other pawl, the springs 23 tending to separate or spread the pawls so as to force them into engagement with the ring 14. Each of the pawls 22 is also provided with a tooth 24 at its intermediate point, the teeth 24 having dove-tailed projection 25 engaging the pawls. The pawls are of a combined thickness so as to fit snugly between the faces of the casing and the teeth 24 are also of a thickness to work snugly within the faces of the casing, while the dovetailed projections 25 are approximately flush with the faces of the respective pawls.

The guide 16 is provided between the rivets 20 with a lateral recess 26 for the reception of a suitable key, and a finger 27 stands centrally within the recess 26 and over which the socket of the key may be engaged so that the key may swing on the finger 27 as a pivot. The face 13 of the casing is provided with a key-hole opening 29 through which the key may be projected or introduced, the key-hole opening 29 registering with the recess 26. The long arms of the pawls are provided with notches 28 in their inner edges and at the ends of the recess 26, so that when the key is inserted into the recess, the ends thereof may engage the notches 28 in order that when the key is turned properly or counter clockwise as seen in Fig. 3, the pawls will be forced together against the tensions of the springs so as to retract them from the ring 14.

In the use of the gyve, it being understood that the sections which are attached to the parts of the casing have been properly applied to the members of the limb, the pawls 22 are adapted to normally stand between the ratchet teeth 15, so as to permit of the limited movements of the members of the limb without locking them. It will be noted that as the respective sections are swung relative to each other, the ratchet teeth 15 will be carried or moved with the part 12

of the casing, while the pawls will be carried or moved by the other part. If the wearer moves his limb excessively, or beyond a predetermined limit, the teeth 24 of the pawl, will be brought into engagement with the ratchet teeth 15, the springs 23 permitting the pawls to yield and then forcing the pawls into locked engagement with the ratchet teeth, so that the members of the limbs are locked against retrograde movement. In this manner, the limb is locked, and any further movement thereof, will cause the pawls to further engage the ratchet teeth, so that any additional movement of the members of the limb will even more securely lock the limb. The members of the limb may be readily liberated or freed by the keeper or authorized person by the introduction of the proper key, which will permit the pawls to be retracted from the ratchet teeth, so that the members of the limb may be moved back to normal position.

From the above description it will be observed that a pair of the gyves may be applied to the lower limbs or legs of a person so as to ordinarily permit of walking or limited locomotor movements, but should the wearer attempt to run or excessively move the members of his lower limbs, the pawls and ratchet teeth will interengage or interlock so as to prevent the retrograde movement of the members of the limbs. Also, when the gyves are applied to the upper limbs or arms, they will permit of the limited movements of the members of the arms but should the wearer attempt to strike another person, or excessively move the members of his arms, the arms will be locked, as will be apparent. The present gype is therefore applicable to the limbs of the human body and will effectively fetter the limbs when applied thereto. The construction of the gype is such that it may be applied to the wearer without discomfort and in such a manner as not to unduly trammel the ordinary movements of the limbs, but which will effectively lock the limbs when excessive or accelerated movements are made. The gyves may also be employed for restricting one or more of the limbs of the wearer should the wearer become unruly.

What is claimed is:—

1. In a gype, a pair of members attachable to the respective parts of a limb, and a joint lock disposable at the joint of the limb and comprising a casing embodying two rotatable parts to which the respective afore-said members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case, and oppositely working key controlled dogs slidably engaging the guide and spring pressed away from each other to engage the respective ratchet teeth.

2. In a gype, a pair of members attachable

to the parts of a limb, in combination with a joint lock comprising a case embodying two rotatable parts to which the respective members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case, U-shaped dogs having their arms straddling the guide and spring pressed away from each other to engage the respective ratchet teeth.

3. In a gype, a pair of members attachable to the parts of a limb, in combination with a joint lock comprising a case embodying two rotatable parts to which the respective members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case, and U-shaped dogs straddling the guide and having their arms overlapped, the pawls being spring pressed apart to engage the ratchet teeth and opposite arms of the pawls being provided with key-engaging means.

4. In a gype, a pair of members attachable to the parts of a limb, in combination with a joint lock comprising a case embodying two rotatable parts to which the respective members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case and having a transverse key receiving recess therein, and U-shaped pawls straddling the guide and spring pressed apart to engage the respective ratchet teeth, the opposite arms of the pawls having key engaging notches at the ends of the said recess.

5. In a gype, a pair of members attachable to the parts of a limb, in combination with a joint lock comprising a case embodying two rotatable parts to which the respective members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case and having a transverse key receiving recess, U-shaped pawls straddling the guide and having their arms overlapped, arms of the pawls having key-engaging notches at the ends of the said recess, and leaf springs secured to the respective pawls and bearing against certain arms of the opposite pawls.

6. In a gype, a pair of members attachable to the parts of a limb, in combination with a joint lock comprising a case embodying two rotatable parts to which the respective members are attached, diametrically opposite ratchet teeth carried by one part of the case, a guide carried by the other part of the case, and having a transverse key receiving recess, U-shaped pawls straddling the guide and each having a long and a short arm, the alternate arms of the pawls being overlapped, the long arms of the pawls having inner notches at the ends of the said recess, and leaf springs secured to the re-

spective pawls at the butt ends of the long arms and bearing against the free ends of the long arms of the opposite pawls.

7. In a gyve, a pair of members attach-
5 able to the parts of a limb, in combination
with a joint lock comprising a case embody-
ing two rotatable parts to which the respec-
tive members are attached, ratchet teeth car-
ried by one part of the case, a guide carried
10 by the other part of the case, and a spring
pressed key controlled U-shaped dog strad-
dling the guide and engageable with the
ratchet teeth, at a predetermined movement
of the parts of the case relative to each
15 other.

8. In a gyve, a pair of members attach-
able to the parts of a limb, in combination
with a joint lock comprising a case embody-
ing two rotatable parts to which the respec-
20 tive members are attached, ratchet teeth car-
ried by one part of the case, a guide carried
by the other part of the case having a trans-
verse key receiving opening, and a spring
pressed U-shaped pawl straddling the guide
25 and having a notch in one arm at the end
of said recess for the engagement of a key.

9. In a gyve, a pair of members attach-
able to the parts of a limb, in combination
with a joint lock comprising a case embody-
30 ing two rotatable parts to which the respec-
tive members are attached, ratchet teeth car-
ried by one part of the case, a guide fitting
through said part of the case, a plate bearing
against the said part of the case, securing mem-

bers passing through the said plate, guide 35
and the other part of the case, and a spring
pressed key controlled dog movably engag-
ing the guide and adapted to interlock with
the ratchet teeth in a predetermined position
of the parts of the case relative to each 40
other.

10. In a gyve, a pair of members attach-
able to the parts of a limb, in combination
with a joint lock comprising a case embody-
ing two rotatable parts to which the respec- 45
tive members are attached, diametrically op-
posite ratchet teeth carried by one part of
the case, a guide fitting through the said
part of the case and having a transverse
key receiving recess, a plate bearing against 50
the said part of the case, securing members
passing through the said plate, guide and
the other part of the case, the last mentioned
part of the case having a key hole opening
registering with the said recess, and U- 55
shaped dogs straddling the guide and spring
pressed from each other to engage the re-
spective ratchet teeth, opposite arms of the
dogs having notches at the ends of the said
recess for the engagement of a key. 60

In testimony that I claim the foregoing
as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

FREDRICK COLOSSUS NAGLE.

Witnesses:

SELINA WILLSON,
MONROE E. MILLER.