

mined by the spring-catches on each side, which slip into the teeth of the rods with a clicking noise; and as the rods advance, the space in which the letter C is placed becomes gradually smaller, until at length the chain, which forms its circumference, is drawn completely into the bore of the tube. The second figure exhibits the appearance of the bars and chain removed from the barrel. The chain does not differ materially from the ordinary chain-saw; it is, however, much heavier and stronger.

The object proposed by Chassaignac in the invention of the *écraseur* was the obtention of an instrument which should combine the safety of the ligature with something like the celerity of the knife. And in this he has completely succeeded; for although in its motion it is undoubtedly slower than the knife, it is more rapid than the ligature, and can be used in cases where the knife is wholly inadmissible. "Its action," says Mr. T. Spencer Wells, "is direct action; not indirect, like the ligature, which only divides tissues by the process of gangrene it induces. The *écraseur* first condenses the tissues it acts on, and then divides them with extreme regularity. The wound does not appear at all bruised or torn. When it acts on an artery, it first divides the two internal coats, which are folded up in such a manner as to plug the vessel. The closure is assisted by the agglutination of the outer coats before they are divided; and after separation has been effected, the closure is so perfect that the channel cannot be opened by blowing forcibly through it. Experiments have been made at the Veterinary School near Paris, and the carotids of sheep have been divided without loss of blood. There is nothing surprising in this, when we remember how seldom severe gunshot, lacerated, or contused wounds bleed; that a limb may be torn off by machinery and no blood be lost; and that bites are very rarely attended by hemorrhage. The lower animals have no occasion to apply a ligature upon the umbilical cord of their young: they simply bite it through; and the action of the *écraseur* is much more like that of biting than of crushing."

The *écraseur* has now been employed in a great variety of cases by Chassaignac, who appears to consider, like most inventors, that his instrument admits of almost universal application in operative surgery. He has employed it for the removal of hemorrhoids, prolapsed anus, polypi of the rectum, uterus, and nose; he has performed with it amputation of the breast, tongue, penis, and neck of the uterus,—extirpation of the testicle, tonsils, vascular and other tumours; and lastly, he has used it in the operation for fistula in ano, and the radical cure of varicocele. Mr. O'Doherty, in the Dublin Quarterly Journal for August, gives the following *résultats* of the results in eighty-four cases operated on by M. Chassaignac:—"1st. The inflammation which follows operation