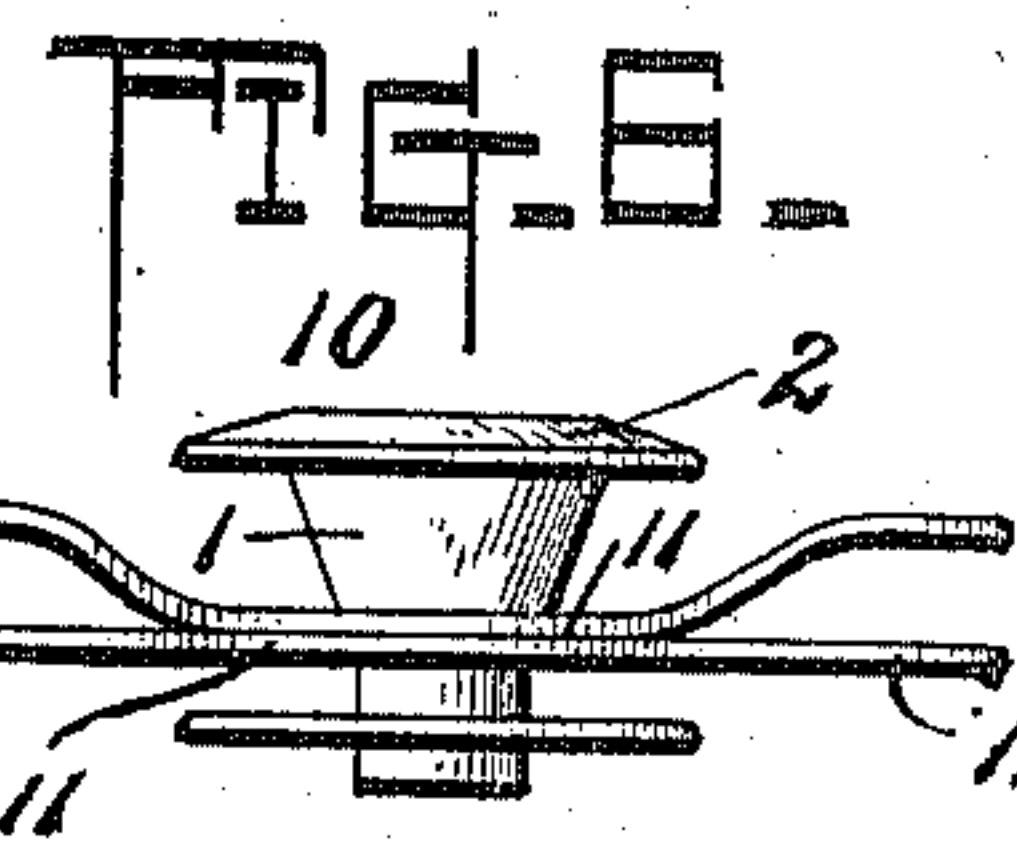
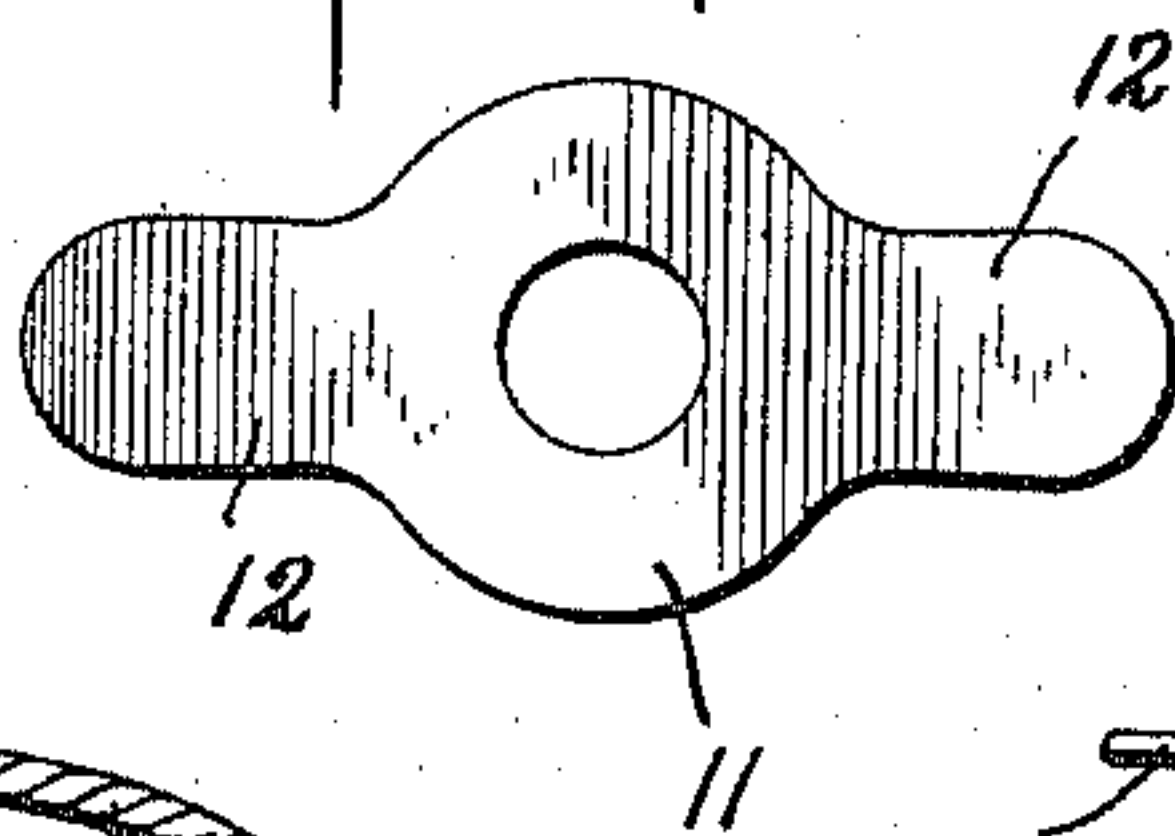
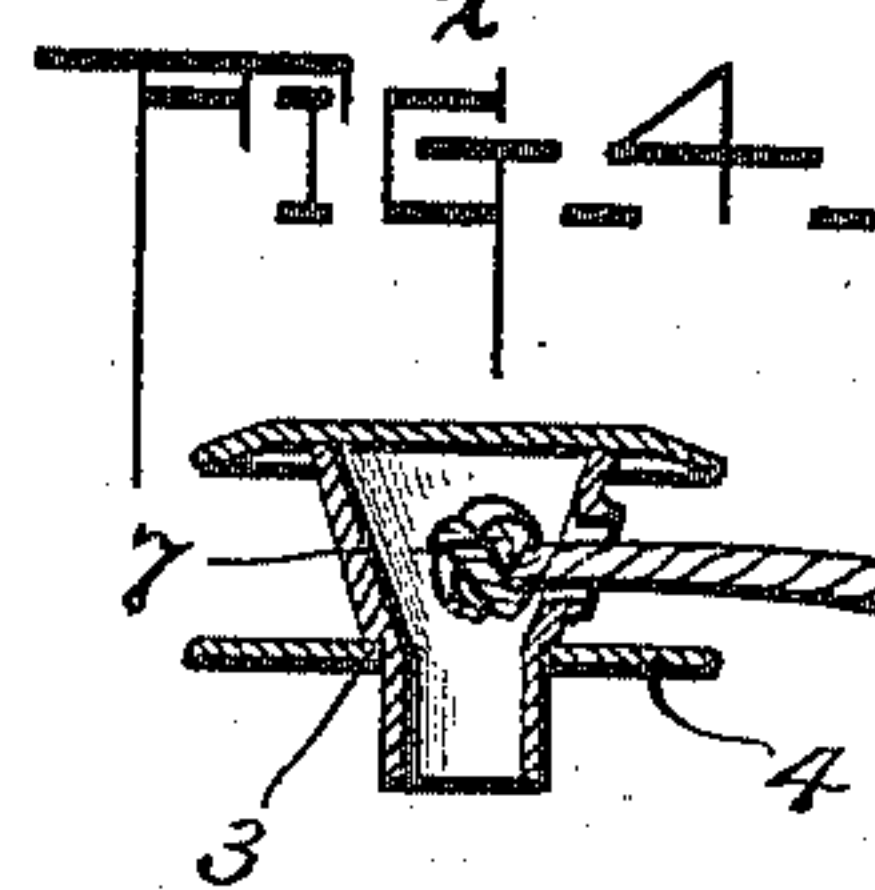
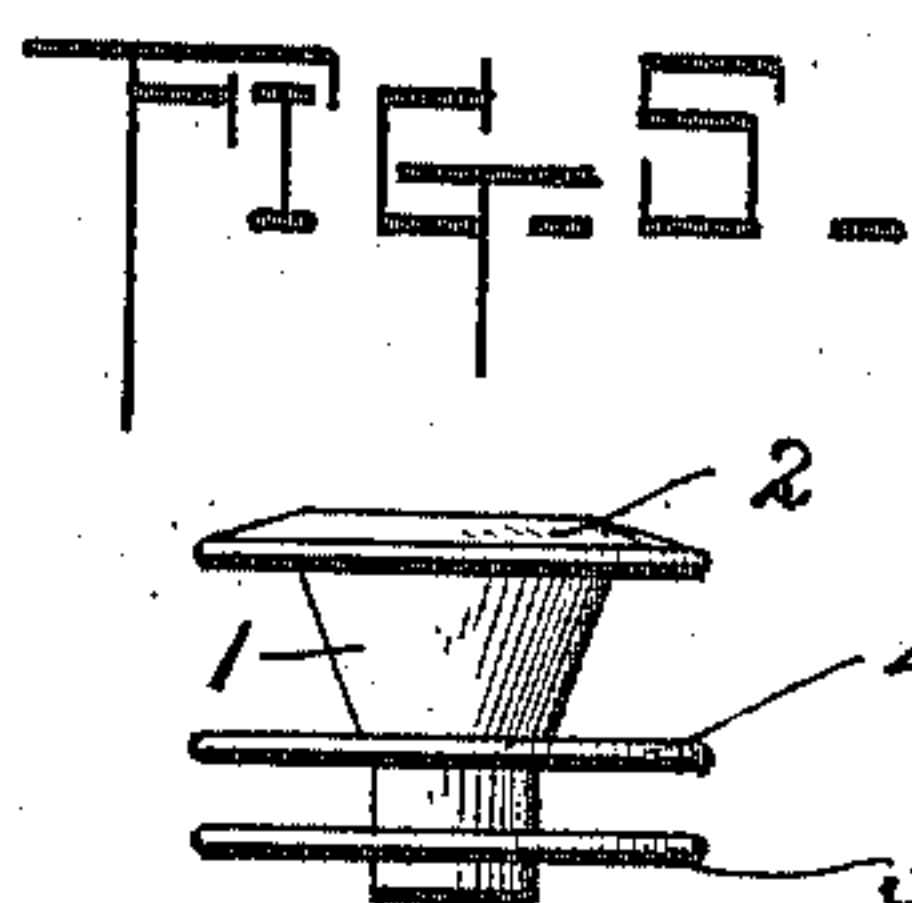
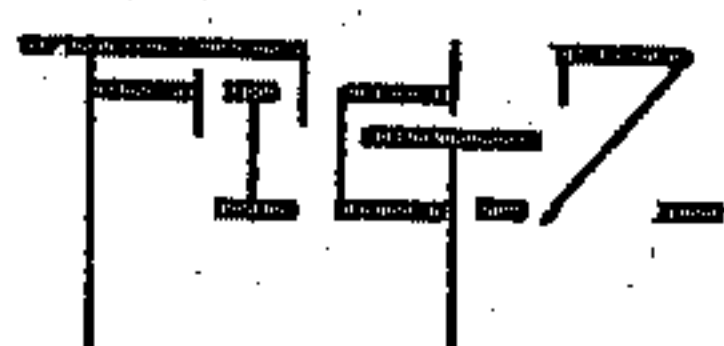
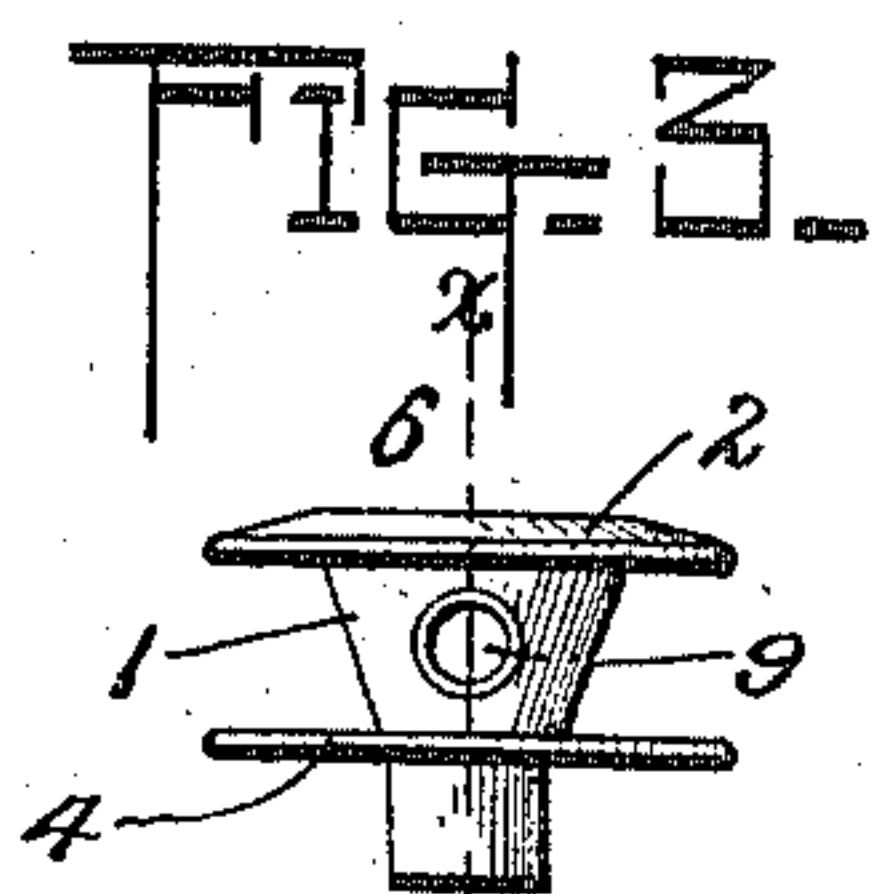
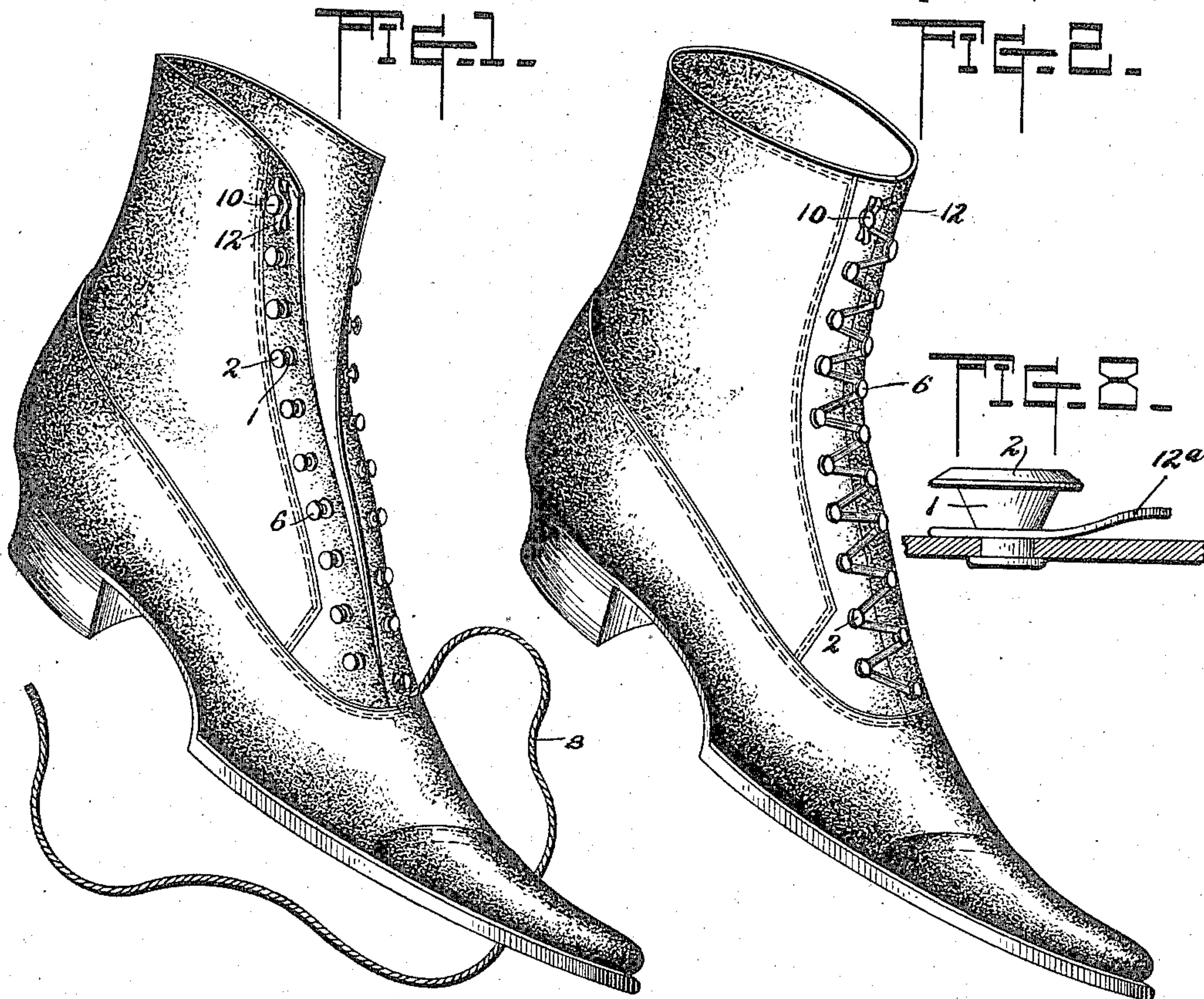


(No Model.)

M. W. INGRAHAM.
SHOE LACE FASTENER.

No. 580,492.

Patented Apr. 13, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

MATTHEW W. INGRAHAM, OF NORTH SYDNEY, CANADA.

SHOE-LACE FASTENER.

SPECIFICATION forming part of Letters Patent No. 580,492, dated April 13, 1897.

Application filed September 5, 1896. Serial No. 605,010. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW W. INGRAHAM, a subject of the Queen of Great Britain, residing at North Sydney, Cape Breton, Province of Nova Scotia, Canada, have invented a new and useful Shoe-Lace Fastener, of which the following is a specification.

This invention relates to fasteners for shoe-laces, the purpose being to provide for the quick release of the lace when it is required to remove the shoe and to enable the latter to be laced expeditiously.

By this invention a single lace only is employed for each shoe and coöperates with headed lacing-studs to secure the shoe upon the foot, one end of the lace being connected and secured to the lowermost lacing-stud, which is made hollow to receive and conceal a knot formed at the said end of the lace and prevent the knot from pressing into the foot, to the discomfort and annoyance of the wearer, and the other or upper end of the lace being secured to a fastener of novel construction after being engaged with the intermediate lacing-studs, all as will appear more fully herein-after.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a laced shoe having the invention applied, the fly being open and released throughout its length. Fig. 2 is a view similar to Fig. 1, showing the fly closed and the shoe as it will appear when laced. Fig. 3 is an elevation of the stud for receiving and concealing the knotted end of the lace. Fig. 4 is a section on the line X X of Fig. 3. Fig. 5 is a side elevation of a lacing-stud. Fig. 6 is an elevation of the fastener for securing the upper end of the lace. Fig. 7 is a detail view of a plate entering into the formation of the fastener illustrated in

Fig. 6. Fig. 8 is a detail view of a lacing-stud and fastener consisting of a single clamping-arm.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference-characters.

The shoe illustrated is of the laced type and is provided with a series of lacing-studs along the edges of the fly. The lacing-studs are of barrel or cylindrical form and comprise a shank 1 and head 2, the shank being of circular outline and converging slightly toward its attaching end and away from the head, so as to cause the lace when subjected to tension to lie as close against the shoe as possible, thereby preventing the tipping or canting of the lacing-studs and reducing the tendency to cant to the smallest degree possible. These lacing-studs may be solid or hollow, depending upon their mode of manufacture, and their attaching ends are slightly reduced, forming an annular shoulder 3, which engages with a plate or annulus 4, which rests against the outer side of the shoe, so as to limit the inward movement of the lacing-stud and provide the necessary space for the reception of the lace. The projecting end of the shank may be upset, so as to clench and confine the material of the shoe between the plate 4 and the upset end of the shank, or if additional strength is required a reinforcing plate or ring 5 may be located on the inner side of the shoe and the end of the shank clenched thereon, thereby securing the body of the shoe between the plates 4 and 5.

The stud 6 for securing the knotted end of the lace in general appearance resembles the intermediate lacing-studs and is hollow, so as to receive and conceal the knot 7 of the lace 8, and is provided in its side with an opening 9 for the passage of the lace, the portion of the shank surrounding the opening 9 being slightly flared or bulged to accommodate the knot 7 and constructed so as not to present sharp corners or edges, which would tend to cut the lace. One end of the lace is knotted, and the lace, being passed through the opening 9 and the open end of the shank or stud, is pulled upon to cause the knot to

enter and become seated within the stud 6, thereby anchoring or securing the lower end of the lace.

The fastener 10 at the upper end of the shoe comprises a stud similar in construction to any one of the intermediate lacing-studs and plates 11, the latter being secured upon the shank between the shoulder 3 and the body of the shoe. The plates 11 have oppositely-extending arms 12, the arms of the lower plate being straight and the arms of the upper plate being curved or deflected slightly, so as to provide a space for the introduction of the lace. These arms 12 are capable of yielding when the lace is forced between them and close by a spring action, so as to secure the lace and prevent the shoe from loosening when worn. A space is provided between the head of the fastener 10 and the plates 11, so as to admit of the loose end portion of the lace being wrapped about the stud one or more times before engaging the said end with the clamping-arms 12, by means of which the loose end of the lace is secured.

The lacing-studs are set staggering to accommodate themselves to the position of the deflected portions of the lace, thereby obviating distorting or an unequal strain upon the side portions of the fly. It is the intention to place the shoes upon the market with the lace in position substantially as shown in Fig. 1, and after the shoe is fitted upon the foot it can be quickly laced by passing the lace alternately around the studs upon opposite sides of the fly, the upper end of the lace being engaged with the fastener 10 and secured in the manner set forth or in any way found most convenient. When it is required to remove the shoe, the upper end of the lace is loosened, and the lace will quickly and readily disengage itself from the headed fastenings and permit the shoe to be removed in less time than if the lace passed through a series of eyelets at the lower end of the fly or if the lace engaged with hooked lacing-studs. The head 2 of the lacing-studs may be a bead or flange and is of such a size as to prevent the accidental slipping of the lace from the studs when the lace is subjected to tension.

The fastening for the loose end of the lace may consist of two pairs of clamping-arms, as most clearly shown in Fig. 6, but it is obvious that one pair may be dispensed with, and in shoes constructed of stout stock the lower plate may be dispensed with, as the loose end of the lace can be wedged into the space formed between an arm 12 and the body of the shoe. Fig. 8 shows a single arm 12^a projecting from one side of the lacing-stud to serve as a means for securing the

loose end of the lace. The clamping arm or arms may be formed of sheet metal or wire, as found most convenient, and are held in place by the lacing-stud in the manner set forth.

Having thus described the invention, what is claimed as new is—

1. In a shoe-lace fastener, a hollow lacing-stud having an opening in its side and adapted to receive and conceal the knotted end of the lace, the latter passing through the side opening, substantially as and for the purpose set forth.

2. In a shoe-lace fastener, a hollow stud having an opening in its side and having the portion of the stud bordering upon the said opening bulging or flaring outwardly and adapted to receive the knotted end of a lace, the latter passing through the said opening, substantially as described.

3. A lacing-stud comprising a body or shank formed with straight sides and having a head at one end, and a reduced portion at the opposite end forming an annular shoulder, and having the sides converging from the head toward the attaching or reduced end and intersecting with the shoulder at the base thereof, substantially as set forth for the purpose described.

4. In combination, a lacing-stud having a head at its outer end and its inner end reduced, forming a shoulder, and having the sides of the body converging from the head toward the attaching end and intersecting with the said shoulder, and a plate mounted upon the reduced end of the stud and engaging with the said shoulder, substantially as shown for the purpose specified.

5. In combination, a lacing-stud having one end reduced to be engaged with the material to which the fastening is applied, and having a head at its opposite end and the body portion converging from the head toward the reduced or attaching end, and a plate fitted upon the reduced end of the stud and secured between the material and the shoulder formed at the base of the reduced or attaching end thereof, and having a spring extension deflected at its free end away from the material and adapted to have the loose end of the lace forced between the material and the said spring end, substantially as described for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MATTHEW W. INGRAHAM.

Witnesses:

J. FRASER MCKENZIE,

OTTO E. LEWIS.