

(No Model.)

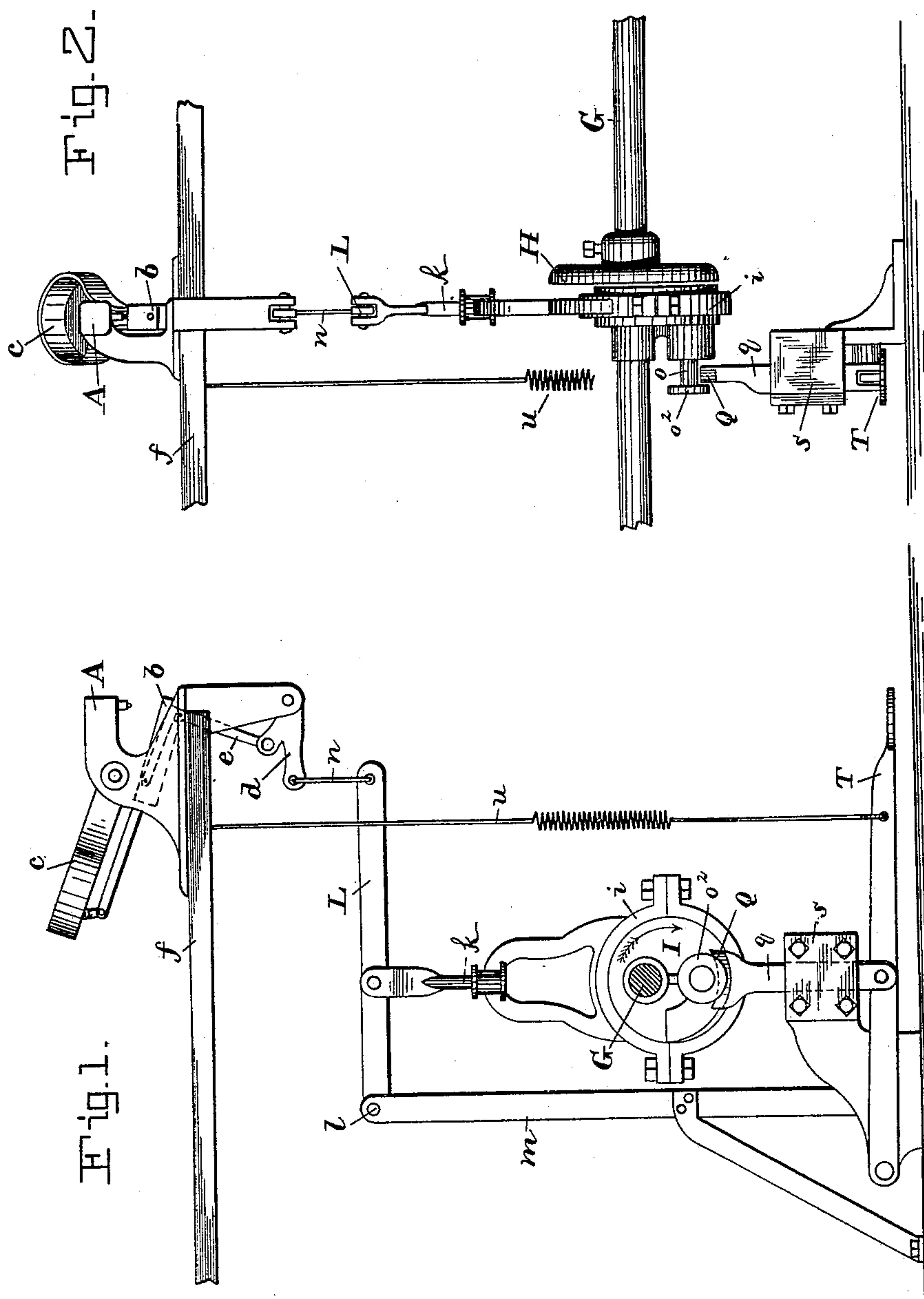
2 Sheets—Sheet 1.

W. CRAIN.

TRIP FOR OPERATING BUTTON ATTACHING MACHINES.

No. 353,623.

Patented Nov. 30, 1886.



WITNESSES:

INVENTOR:

A. C. Eader

W^m Crain

John E. Morris

BY *Chas B. Mann*

ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

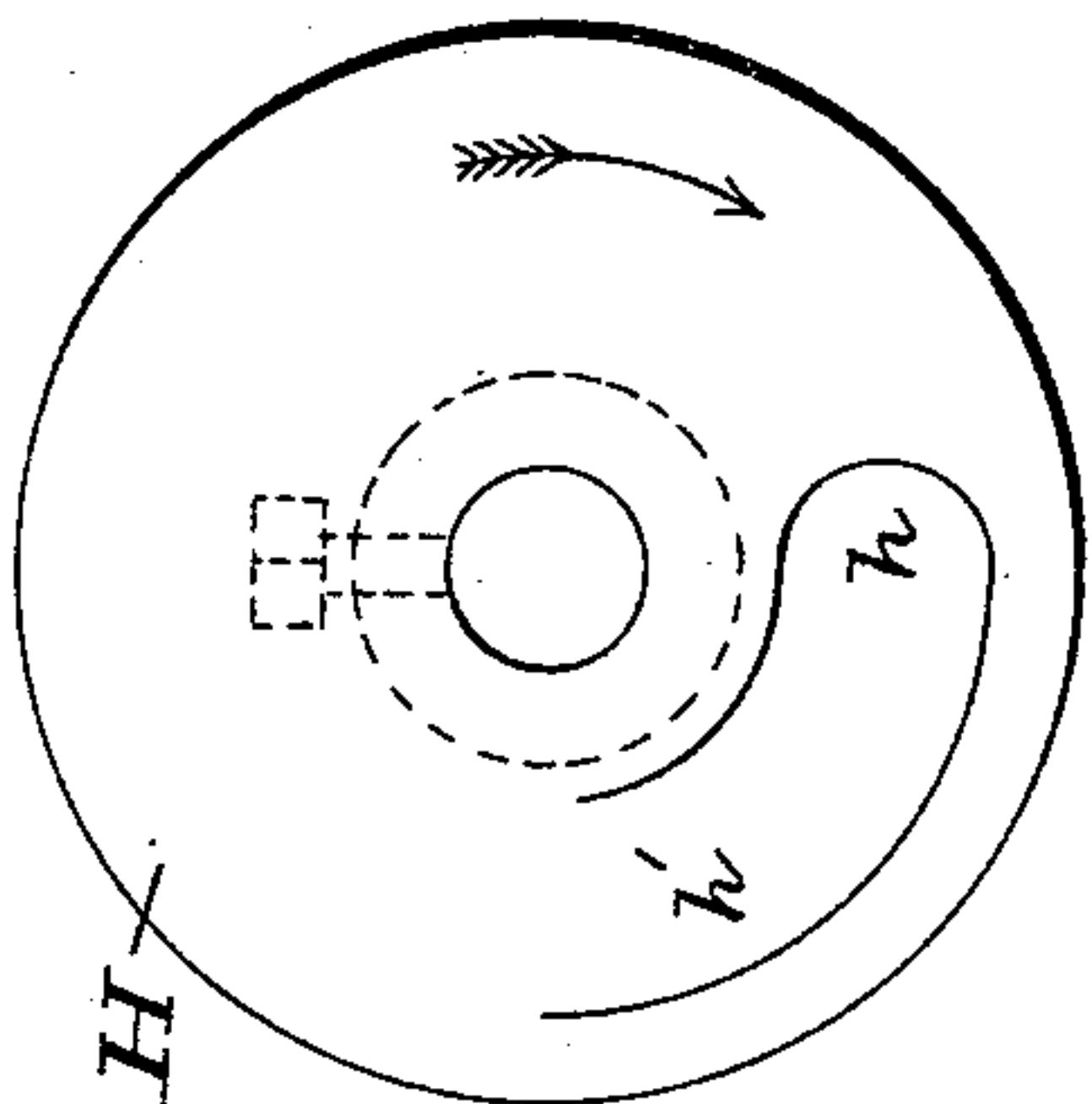


Fig. 5.

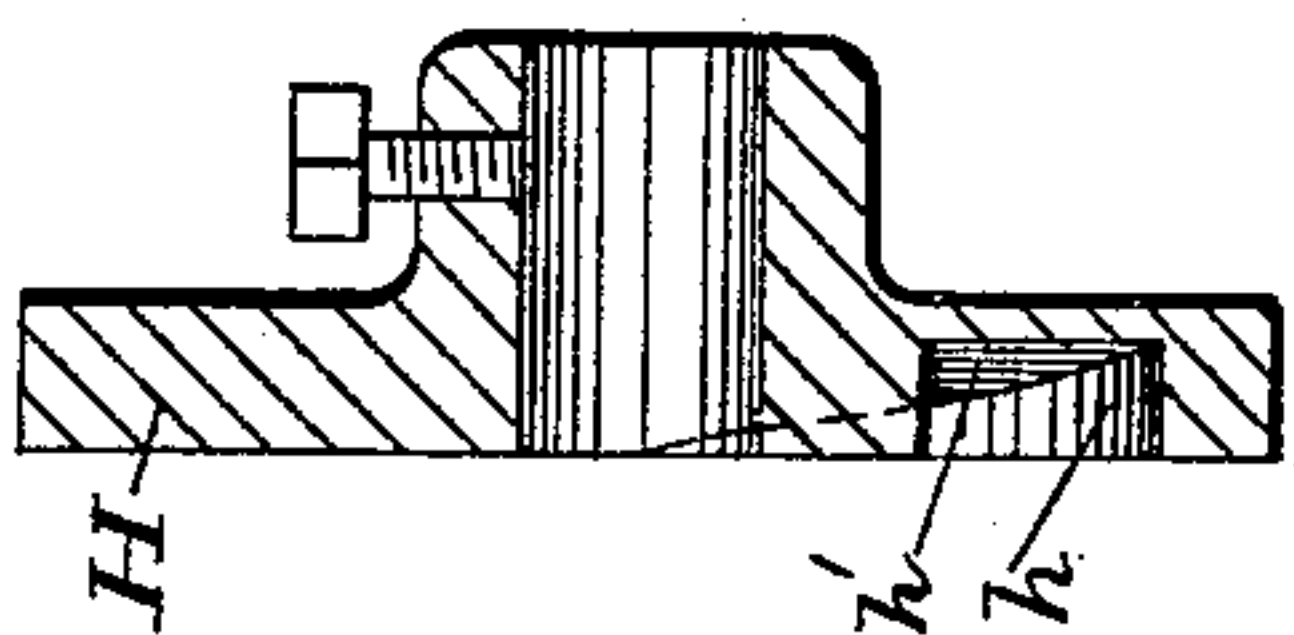


Fig. 4.

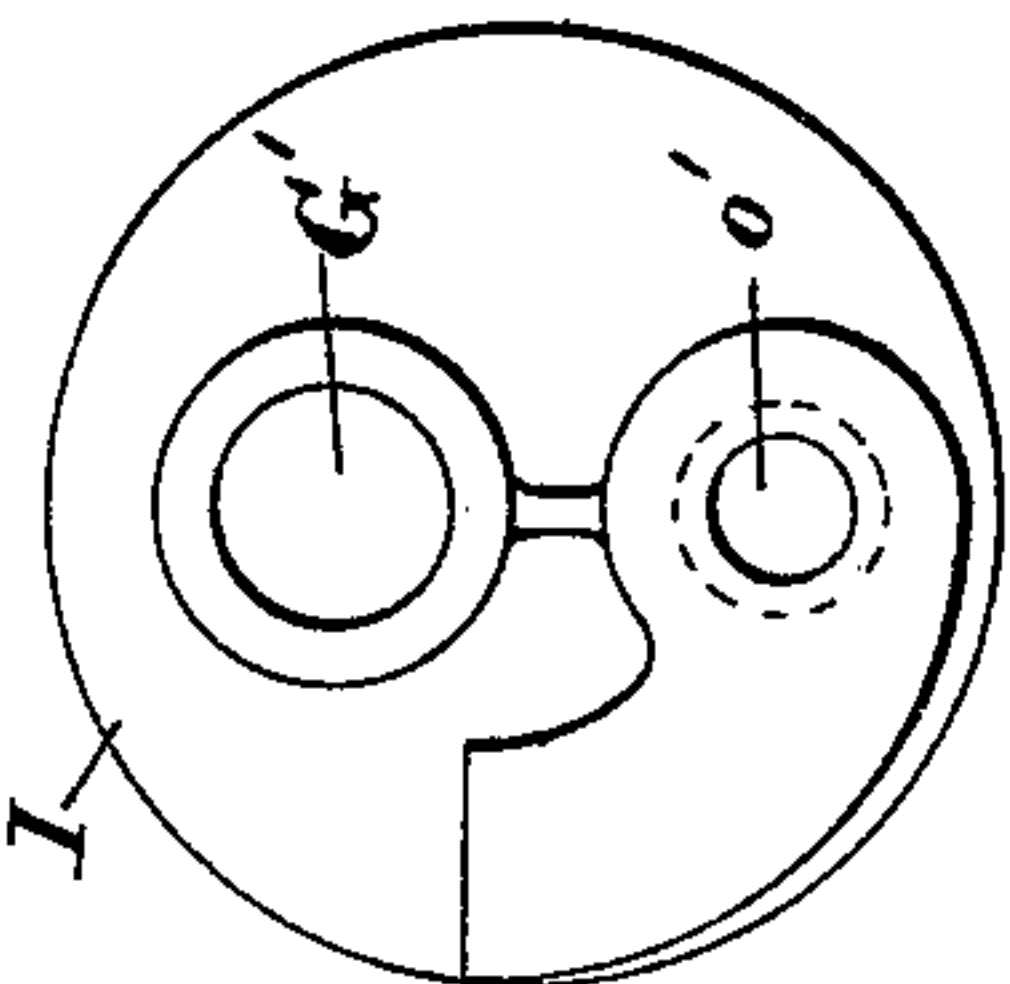


Fig. 3.

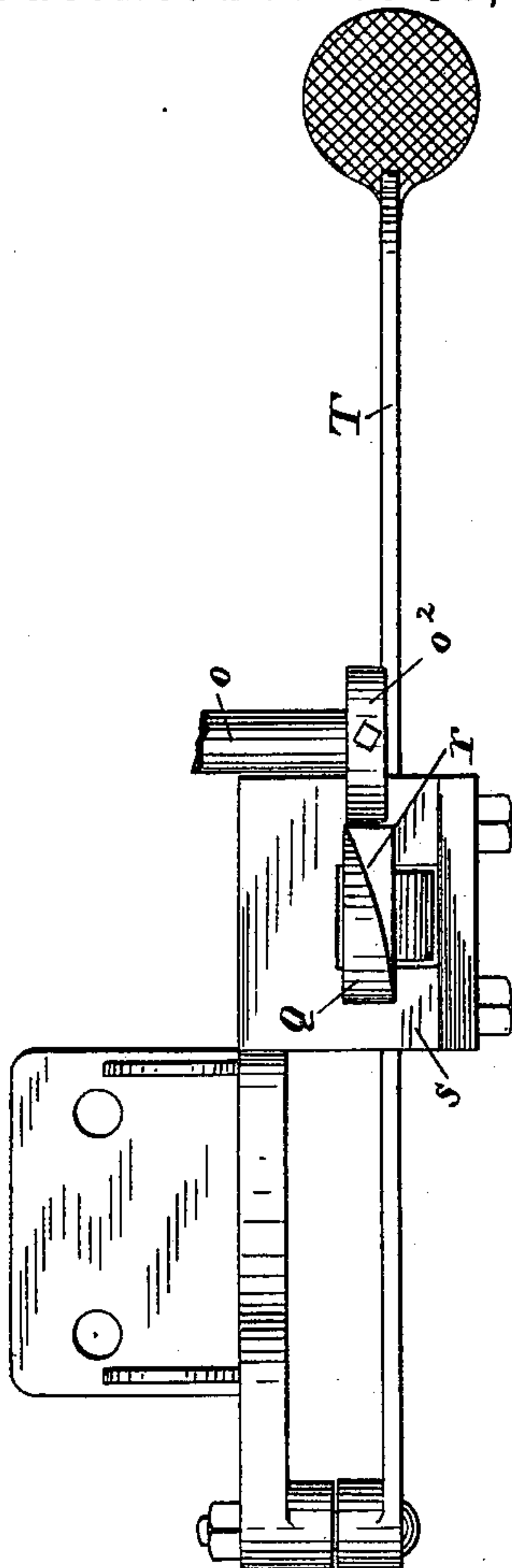
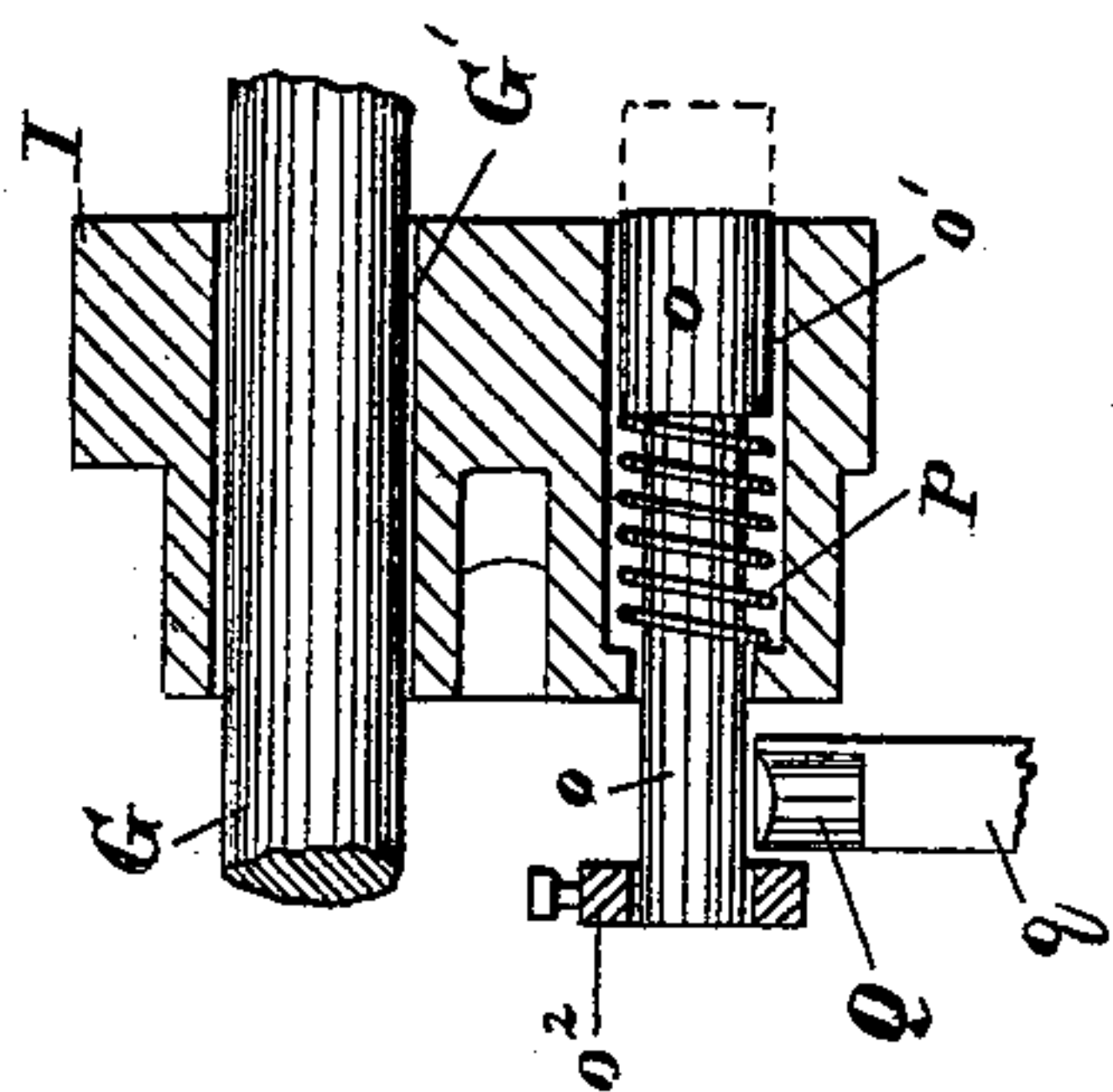


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM CRAIN, OF BALTIMORE, MARYLAND, ASSIGNOR OF THREE-
FOURTHS TO WISE BROS., OF SAME PLACE.

TRIP FOR OPERATING BUTTON-ATTACHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 353,623, dated November 30, 1886.

Application filed September 28, 1886. Serial No. 214,718. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CRAIN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Trips for Operating Button-Attaching Machines, of which the following is a specification.

My invention relates to a device for operating button-attaching machines or eyelet-machines, and is illustrated in the accompanying drawings, in which—

Figure 1 is a side view, and Fig. 2 a front view, of the mechanism. Fig. 3 is a cross-section of the eccentric and its spring-bolt, showing also the driving-shaft and the retractor of the spring-bolt. Fig. 4 is a side view of the eccentric. Figs. 5 and 6 show, respectively, a diametrical section and a side view of the rotary head. Fig. 7 is a top view of the spring-bolt, its retractor, and the treadle for operating the retractor.

The letter A designates the fixed jaw of a button-attaching machine, or an eyelet-machine, as the case may be; *b*, the movable jaw, and *c* the receptacle which contains the buttons or eyelets. The movable jaw *b* is set in motion by a lever, *d*, and a rod, *e*, which connects the lever with the jaw. These parts represent an ordinary button-attaching machine, and are of well-known construction, and are supported on a table, *f*. My invention relates to means for connection with the said jaw-moving lever *d*, whereby power may be used for driving or operating the said machine.

A shaft, *G*, below the table *f* is to be driven by steam or other power, and thereon is a circular head, *H*, fixed in any suitable manner so as to rotate always when the shaft turns. One side of the head has a plain surface provided with a slot or hole, *h*, (see Figs. 5 and 6,) which preferably has a curved incline, as at *h'*, from the said plain surface to the deepest part *h*. An eccentric, *I*, is on the shaft *G*, alongside of the rotary head *H*, and is loose, so that the shaft may turn without moving the eccentric. The ring *i* surrounds the eccentric, and has a suitable rod, *k*, which projects upward. A trip-lever, *L*, has one end pivoted at *l* to an upright, *m*, or to any other stationary device, and the movable end of said trip-lever is connected by a link, *n*, with the aforesaid jaw-moving le-

ver *d* of the machine. The rod *k* of the eccentric is connected with the trip-lever *L*. It will thus be seen that when the eccentric *I* turns it will impart an up-and-down movement to the trip-lever *L*, and this latter, by means of the link *n*, will move the jaw *b* of the machine.

The eccentric *I* is provided with a spring-bolt, *o*, which when projected enters the hole *h* in the rotary head *H* and forms a connection therewith, which will cause the eccentric to rotate with the head. When the spring-bolt *o* is projected, its end will strike the plain surface of the rotary head, and the latter, by turning, will have its inclined slot or hole *h* brought around in the direction of the arrow until the end of the bolt *o* occupies the deepest part of the hole *h*, and then, as just stated, the eccentric *I* will be so connected with the head *H* that both will rotate together. When the eccentric *I* thus rotates, it at once imparts motion to the movable jaw *b* of the machine. The eccentric has a hole, *G'*, for the shaft *G*, and a second hole, *o'*, for the spring-bolt *o*. A spiral spring, *p*, is suitably arranged to project the bolt. The spring-bolt has a head, *o'*, which in the present instance consists of a collar secured on the bolt by a set-screw. The effect of the spring is to project that end of the bolt which enters the hole *h*, and thereby bring the bolt-head *o'* against the side of the eccentric. To retract the bolt, therefore, a retractor, *Q*, is provided. The side of the retractor adjoining the eccentric is straight, or parallel with the side of the eccentric, and the other side, *r*, is diagonal therefrom. This is shown more plainly in Fig. 7. The retractor, therefore, is wedge-shaped, the point part being toward the front, or pointing in a direction opposite that in which the eccentric and rotary head revolve, and its normal position is in the path of rotation of the head of the spring-bolt. Viewed from the side, (see Fig. 1,) it will be seen that the top of the retractor is curved downward or slightly concaved. This retractor *Q* is mounted at the upper end of a vertical shank, *q*, which moves up and down freely in a suitable bearing, *s*, and at its lower end the shank is pivoted to a treadle, *T*. A rod and spring, *u*, connect the treadle with the table, and serve, by keeping the treadle raised, to sustain the retractor *Q* to its uppermost position, where it is

in the path of the head of the spring-bolt, and where it serves to keep said bolt normally retracted.

From the foregoing description the operation of the device will be understood, and is as follows: The spring-bolt is withheld from the rotary head by the retractor Q. When it is desired to close the movable jaw *b* of the machine against the fixed jaw A, the operator's foot will depress the treadle T, which will lower the retractor Q and withdraw it from the head of the spring-bolt. The latter will then be projected until its point end enters the hole *h* of the rotary head, whereupon the eccentric will turn and the trip-lever L will move the jaw *b* of the machine. Upon releasing the foot from the treadle the latter and the retractor will be raised by the spring *u*, and when the eccentric has made one revolution the spring-bolt will be withdrawn from the hole *h*, and then the eccentric will cease turning.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the jaws of a button-attaching or eyelet machine, of a drive-shaft, G, having a fixed rotary head, H, provided in its side with a hole, *h*, an eccentric, I, loose on the drive-shaft and provided with a spring-bolt to engage with the hole in the rotary head, a connection, substantially as described, between the eccentric and the movable jaw of the machine, and a retractor to keep

the spring-bolt normally disengaged from the rotary head, as set forth.

2. The combination, with the jaws of a button-attaching or eyelet machine, of a drive-shaft, G, having a fixed rotary head, H, provided in its side with a hole, *h*, an eccentric, I, loose on the drive-shaft and provided with a spring-bolt to engage with the hole in the rotary head, a trip-lever, L, connected with the movable jaw, and also with the eccentric, and a wedge-shaped retractor, Q, having its point part in a direction opposite that in which the eccentric revolves and occupying a position in the path of the spring-bolt, for the purpose set forth.

3. The combination, with the jaws of a button-attaching or eyelet machine, of a drive-shaft, G, having a fixed rotary head, H, provided in its side with a hole, *h*, an eccentric, I, loose on the drive-shaft and provided with a spring-bolt to engage with the hole in the rotary head, a trip-lever, L, connected with the movable jaw, and also with the eccentric, a treadle, T, and a retractor to actuate the said spring-bolt, said retractor being attached to the treadle, for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM CRAIN.

Witnesses:

JOHN E. MORRIS,
JNO. T. MADDOX.