

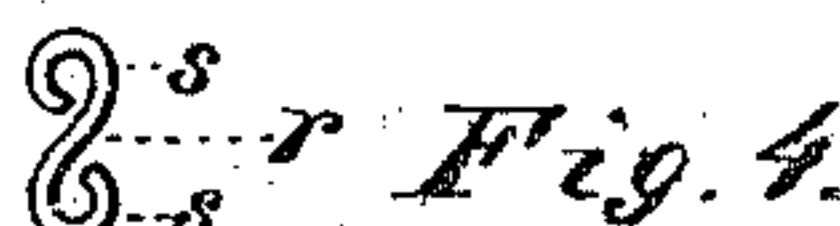
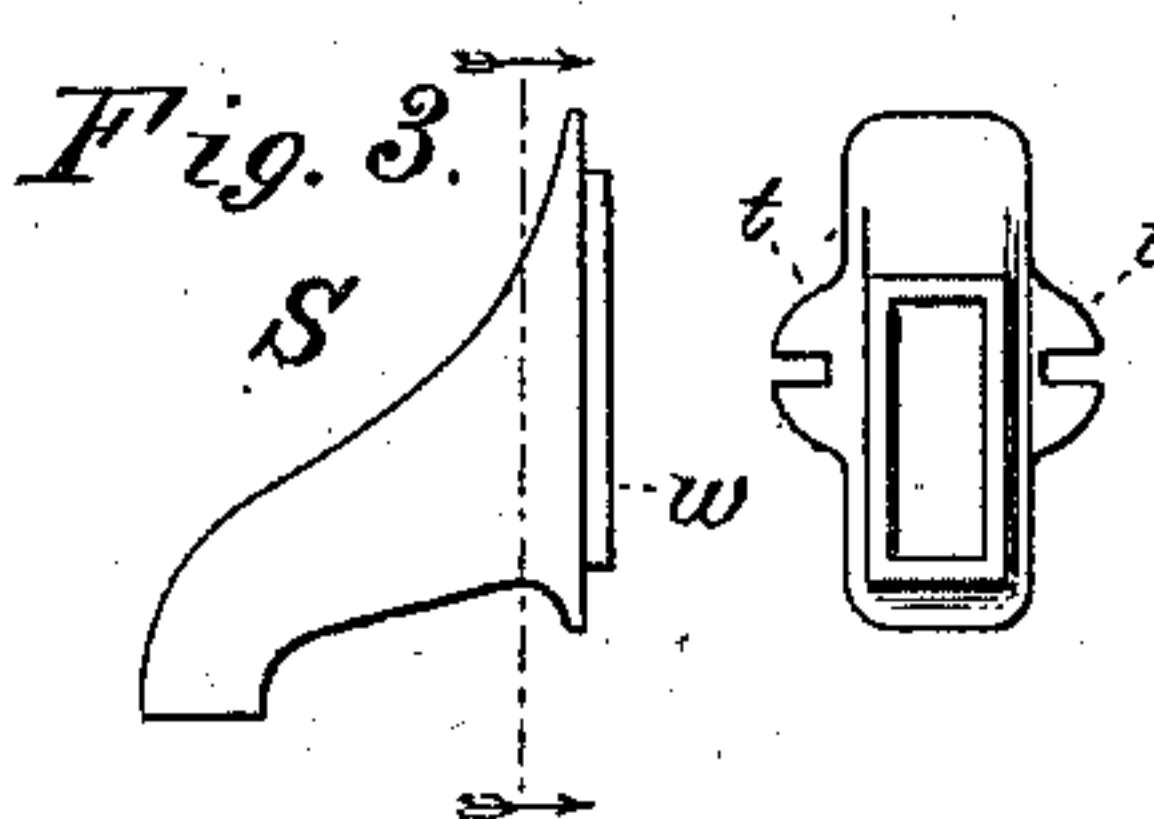
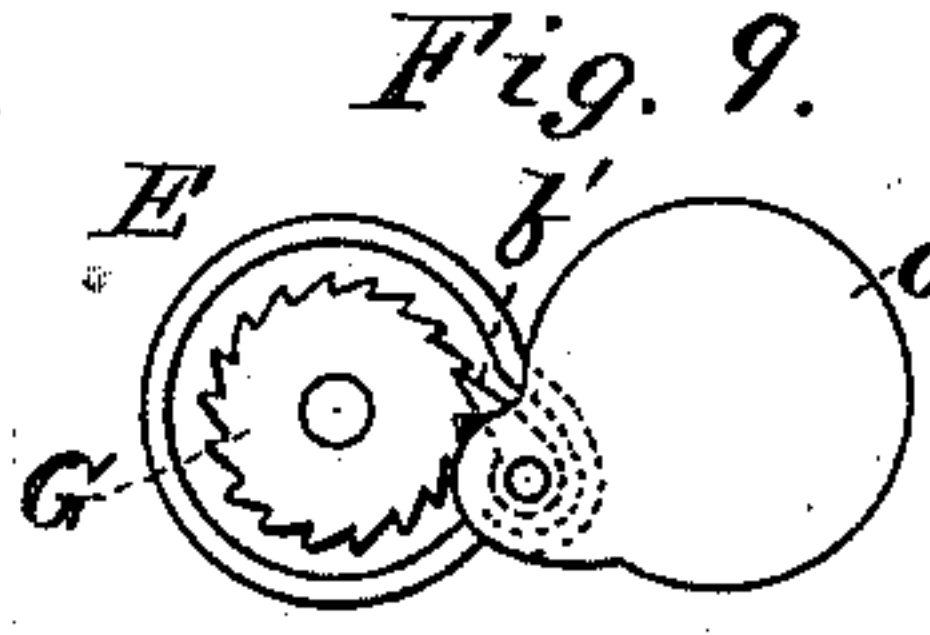
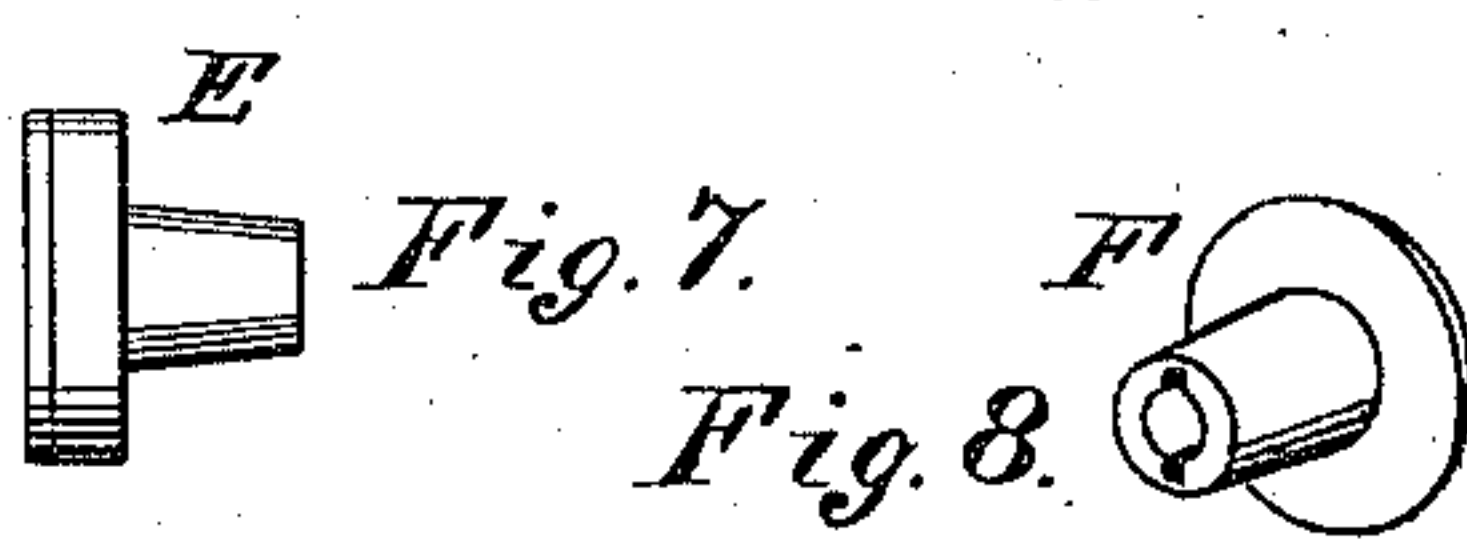
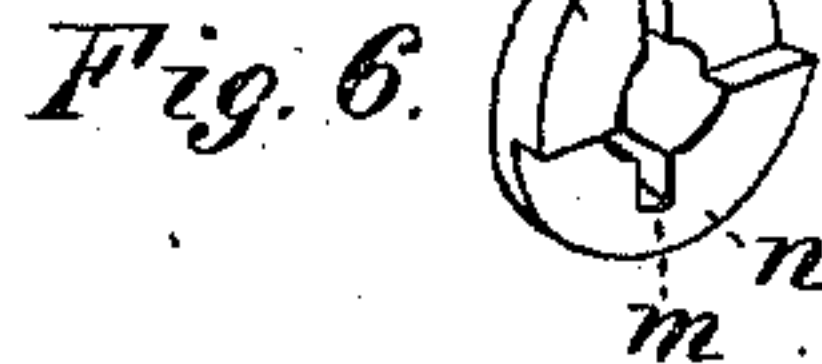
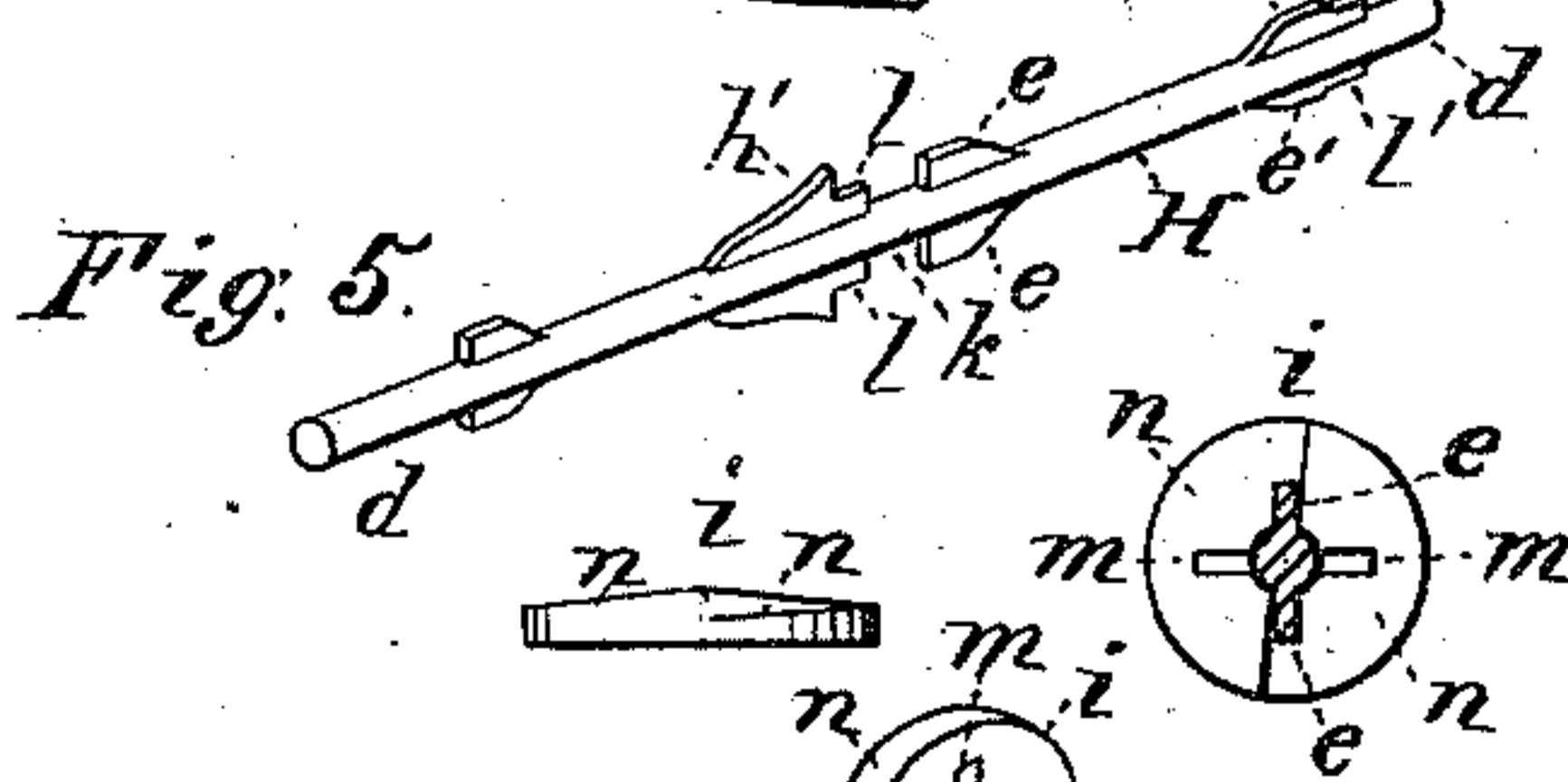
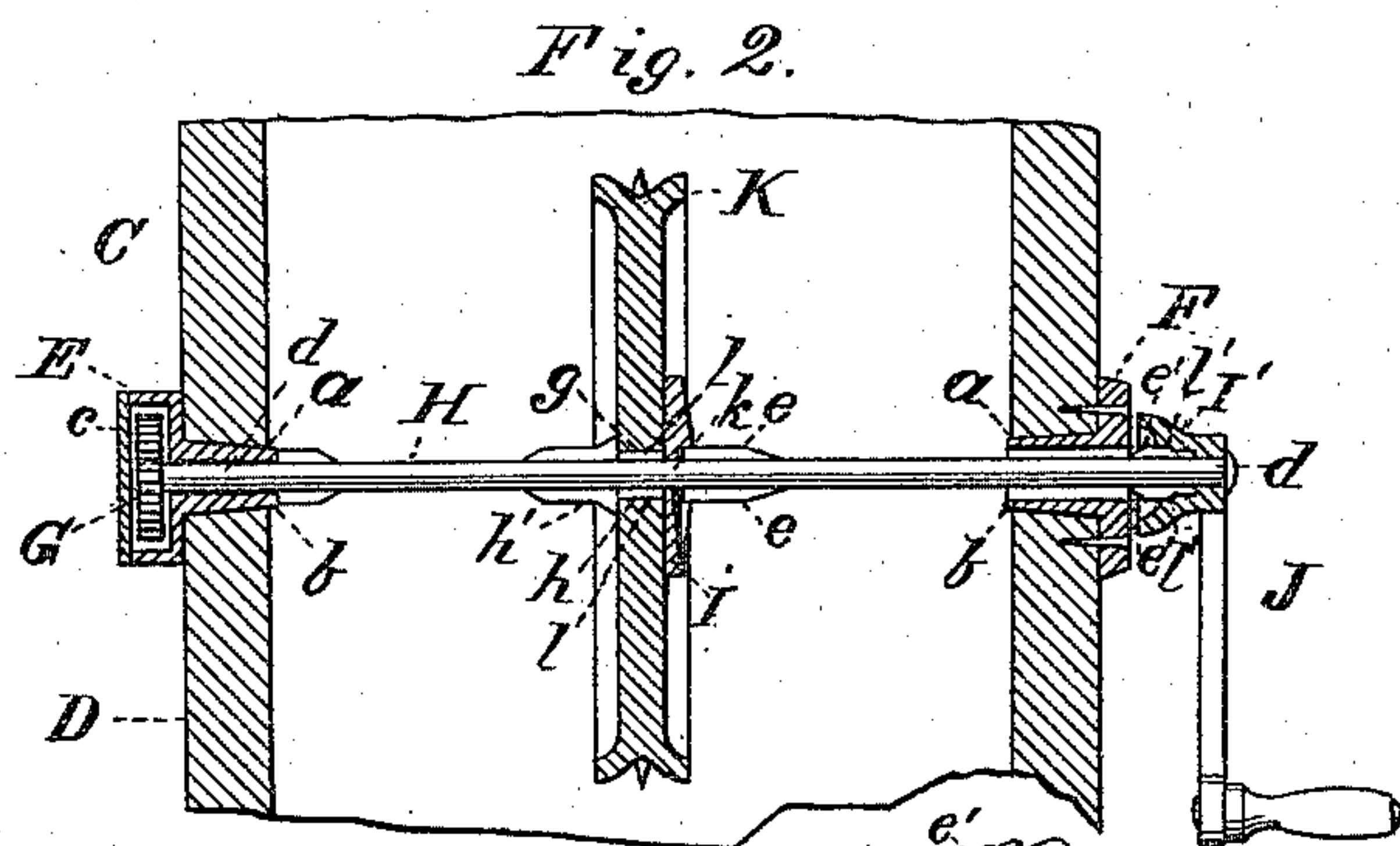
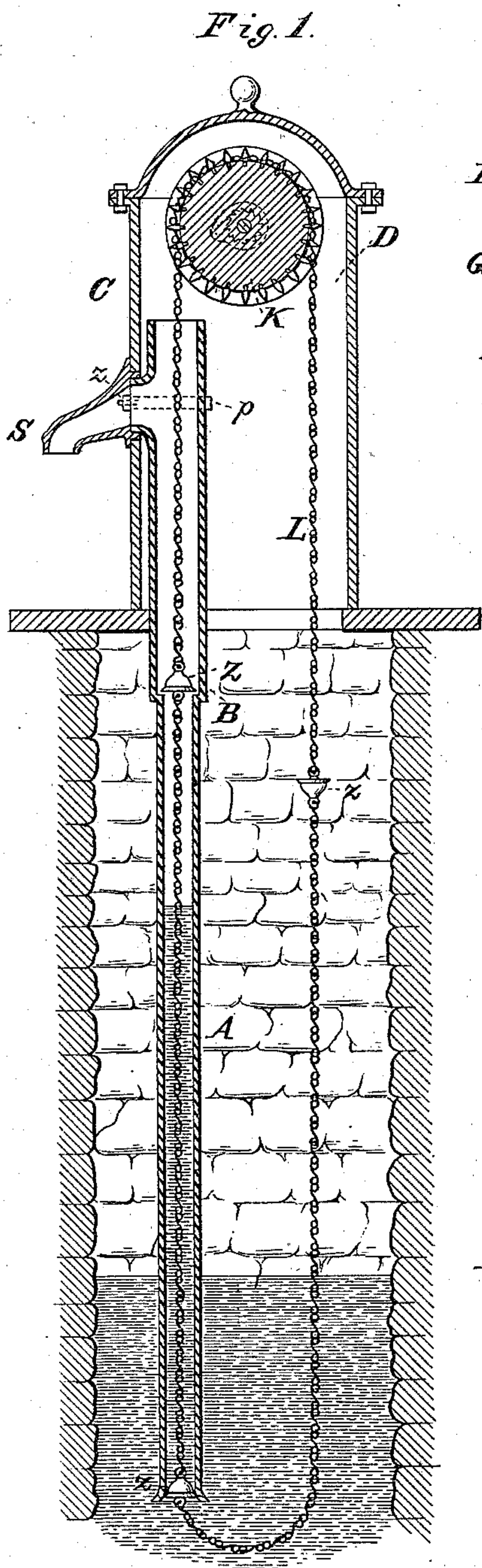
(No Model.)

C. S. CHASE.

CHAIN PUMP.

No. 305,668.

Patented Sept. 23, 1884.



WITNESSES

*Villette Anderson.*  
*John A. Morrow*

INVENTOR

*C. S. Chase,*  
*by Anderson Smith*  
*his* ATTORNEYS



# UNITED STATES PATENT OFFICE.

CHRISTIE S. CHASE, OF JOHNSTOWN, OHIO.

## CHAIN-PUMP.

SPECIFICATION forming part of Letters Patent No. 305,668, dated September 23, 1884.

Application filed December 4, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIE S. CHASE, a citizen of the United States, residing at Johnstown, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Chain-Pumps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention, and is a vertical section. Fig. 2 is a vertical section of a portion of the pump, to show the shaft, with its wheel and journal-boxes. Fig. 3 is a detail view of the spout. Fig. 4 is a link of the chain. Figs. 5, 6, 7, 8, and 9 are detail views of the different parts.

This invention has relation to chain-pumps; and it consists in the construction and novel arrangement of devices, all as hereinafter set forth, and particularly pointed out in the claims appended.

In the accompanying drawings, the letter A designates the tubing, which, from the bottom of the well up to the vent, as at B, is of equal bore or caliber; and from the vent up to the top is a little larger, being so made in order that the upper bucket may pass freely and without undue friction, said bucket being relieved at the same time that the lower bucket enters the tube at its lower end. In this manner it is provided that the drawing-power shall have to overcome the friction of but one bucket in the tube at a time; and should a bucket stop in the larger portion of the tube above the vent, the water is allowed to pass down by this bucket, so that it is a non-freezing arrangement.

Three buckets in all are designed to be used on the chain, at equal distances apart, the interval being equal to the distance from the bottom of the tube upward to the vent, so that the flow will be constant when the chain is in motion.

C represents the top of the stock, which is

usually made of wood, the sides D being provided with perforations at *a* for the tapering tubular projections *b* of the boxings E and F, which are designed to be driven into the boards from the outside. The box E carries the ratchet-wheel G and pawl *b'*, and is provided with a close cover, *c*, which is secured to its outer side in such a manner as to inclose the ratchet completely, protecting it from the water.

H indicates the main shaft, which is formed with journals *d* and shoulder-lugs near the ends and near the middle portion. K indicates the main wheel, which is secured to the main shaft in the following manner: The eye *g* of the wheel is formed with offsets *h*, which slip over the lugs *e* near the middle of the shaft, bringing the wheel against the larger shoulder *h'*, while its offsets engage the splines *l* on the shaft. Between the ends of the splines *l* and lugs *e* are intervals *k*, and a collar, I, having offset recesses *m* and face inclines *n*, being slipped over the lugs *e*, is turned in the intervals or ways *k*, so that its inclines engage the shoulders of the lugs *e*, and in this manner secure the main wheel in position. At the end of the shaft the crank J is secured in a similar manner, a collar, I', being employed, and operating in engagement with the splines *l'* and lugs *e'*. The chain L, to which the buckets Z are attached, consists of the serpentine double loops *s* at each end, an interval, *r*, being provided between the loops, as shown, to insure the catching or engagement of the links with the sprockets of the wheel. S indicates the spout, which is made entire in a single casting. This spout is formed with the lateral notched lugs *t*, and with the plain inner face, *w*, which is placed in contact with the front of the top at its opening. A strong staple-form band, *p*, having threaded ends, being passed around the top, engages the lugs by its threaded ends, and by means of nuts *z* is drawn tight, securing the spout firmly in position.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the main shaft, of

the main wheel, the splines *l*, the lugs *e*, constructed substantially as shown, and the collar *I*, having offset recesses and face inclines, substantially as specified.

- 5 2. The combination, with the main shaft having the splines and shoulder-lugs, of the collars having offsets from their eyes and face inclines, substantially as specified.

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

CHRISTIE S. CHASE.

Witnesses:

H. J. BUXTON,  
JOHN STEVENS.