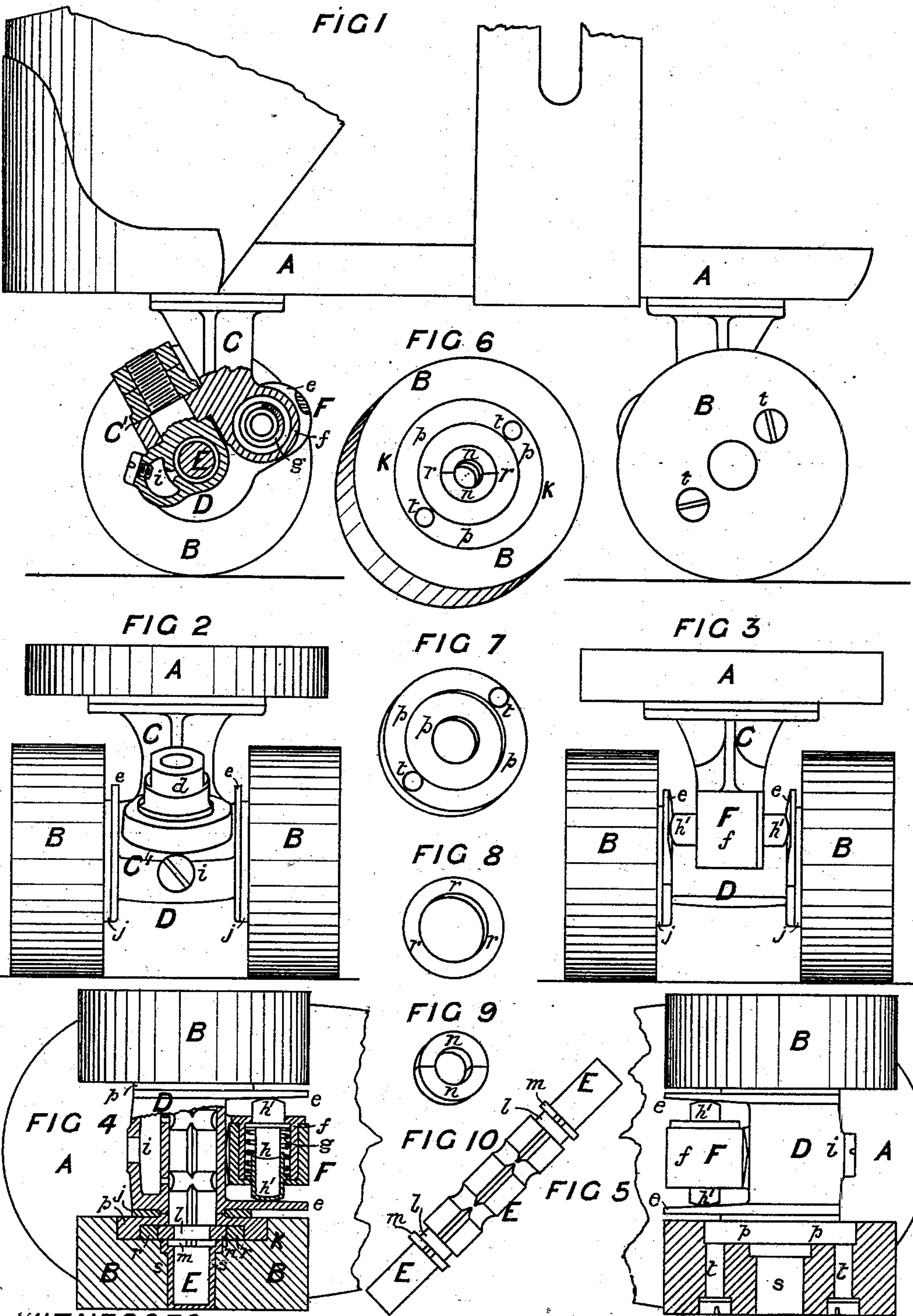


J. MACKAY.  
Roller Skate.

No. 235,887.

Patented Dec. 28, 1880.



WITNESSES

H. C. Hudson.  
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INVENTOR

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Roller Skate.

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FIG 11

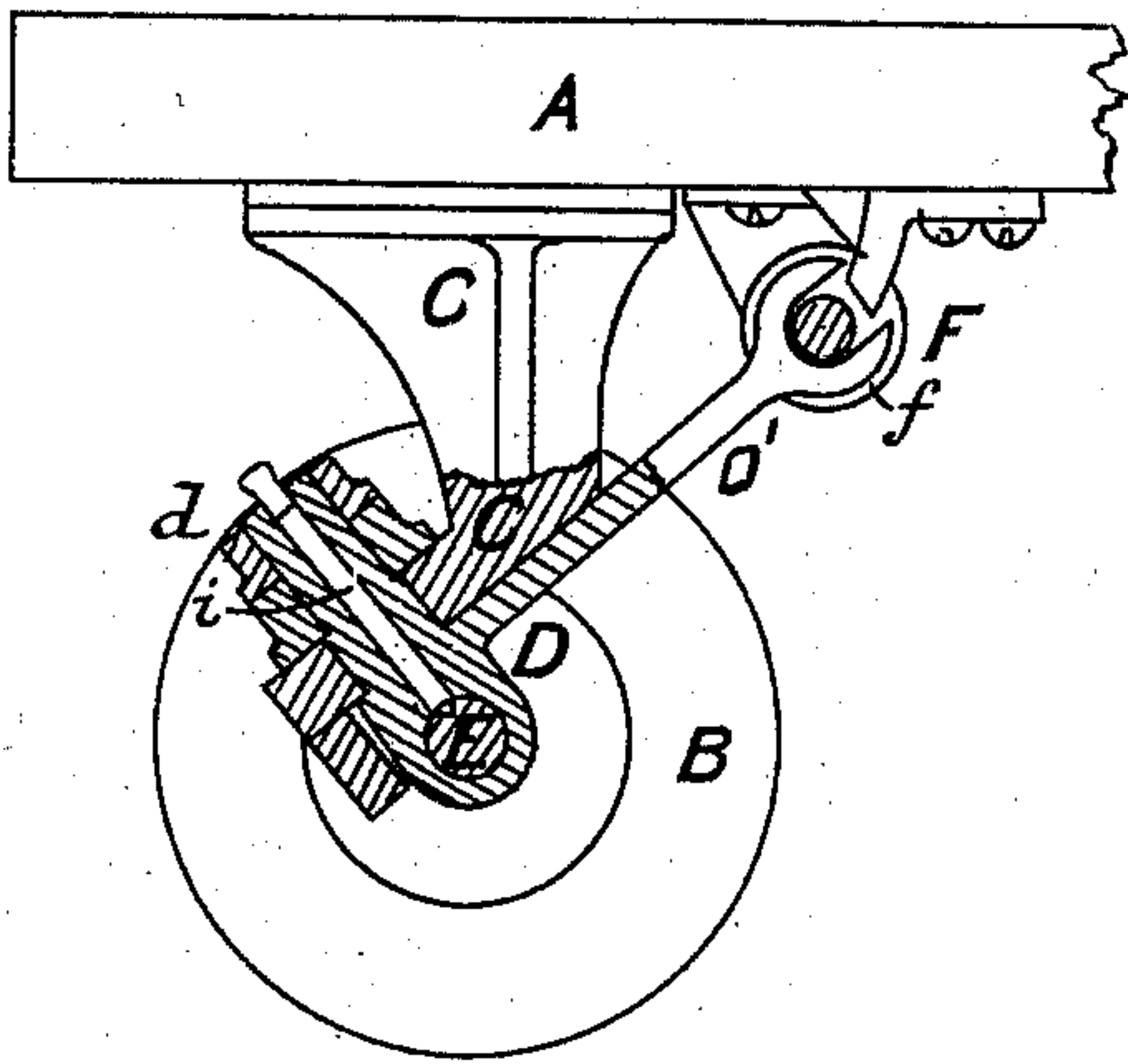


FIG 12

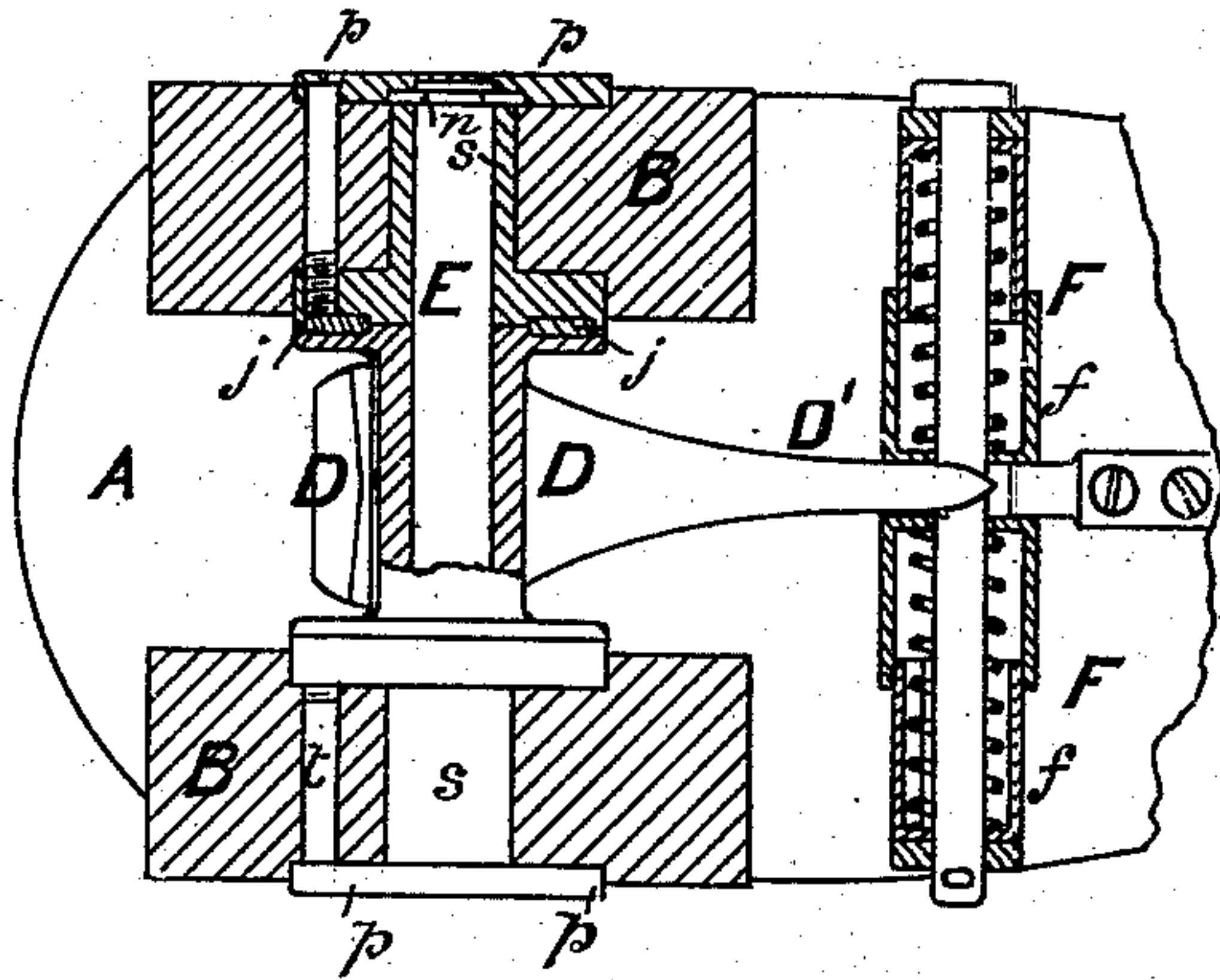


FIG 13

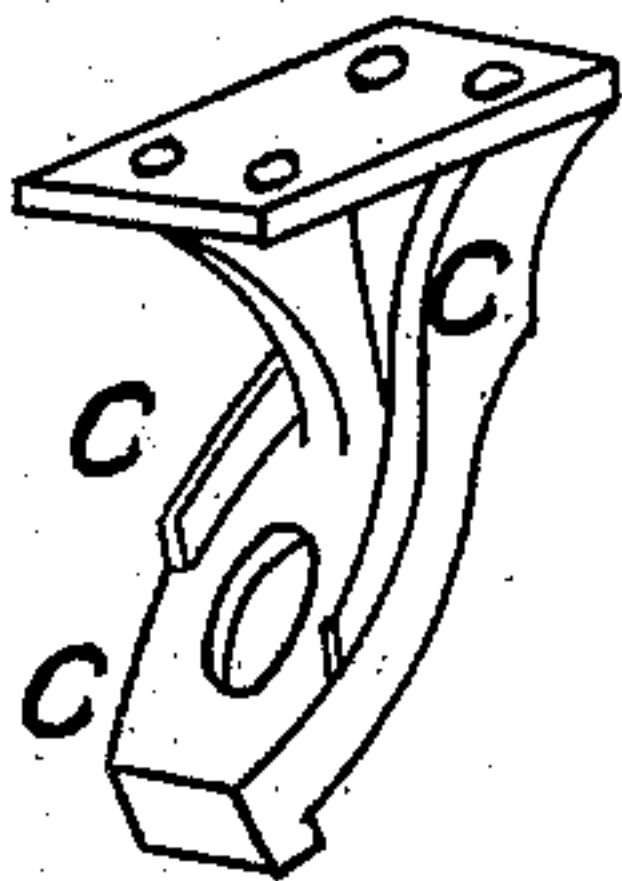


FIG 16

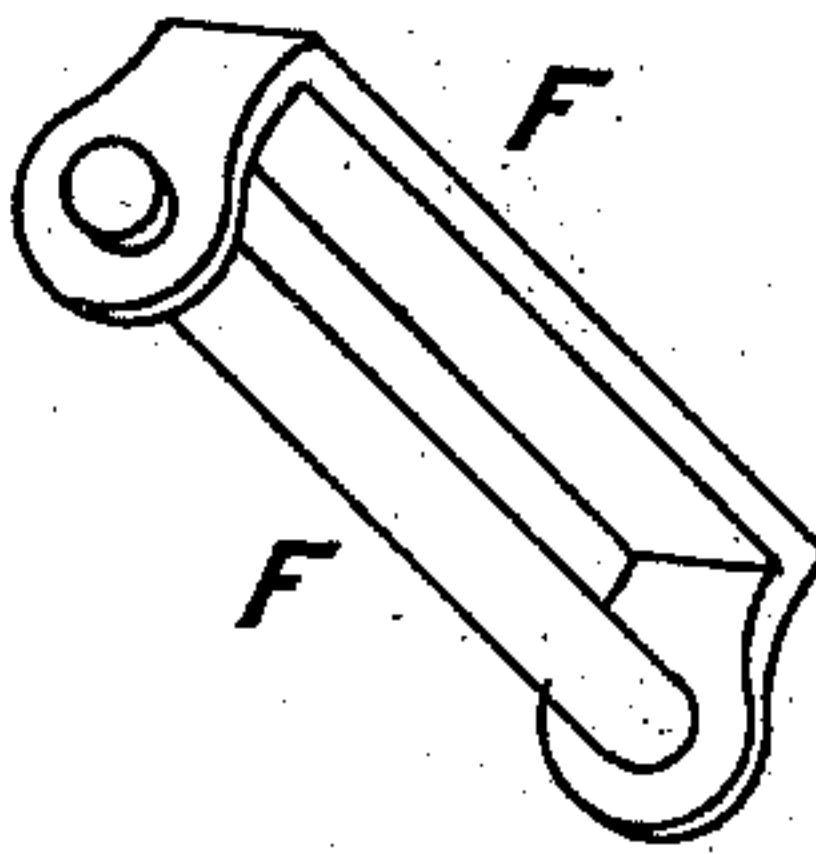


FIG 19

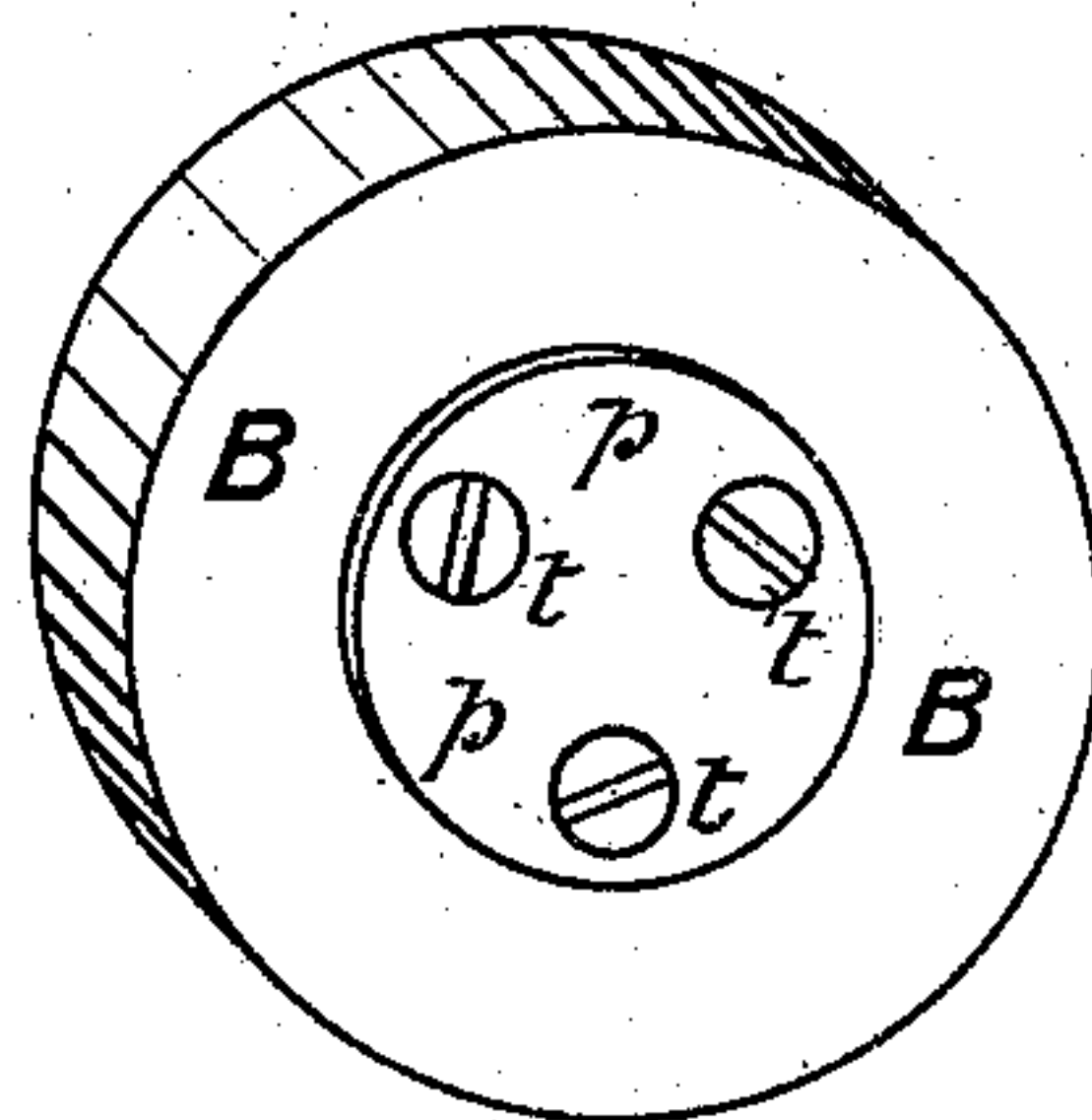


FIG 14

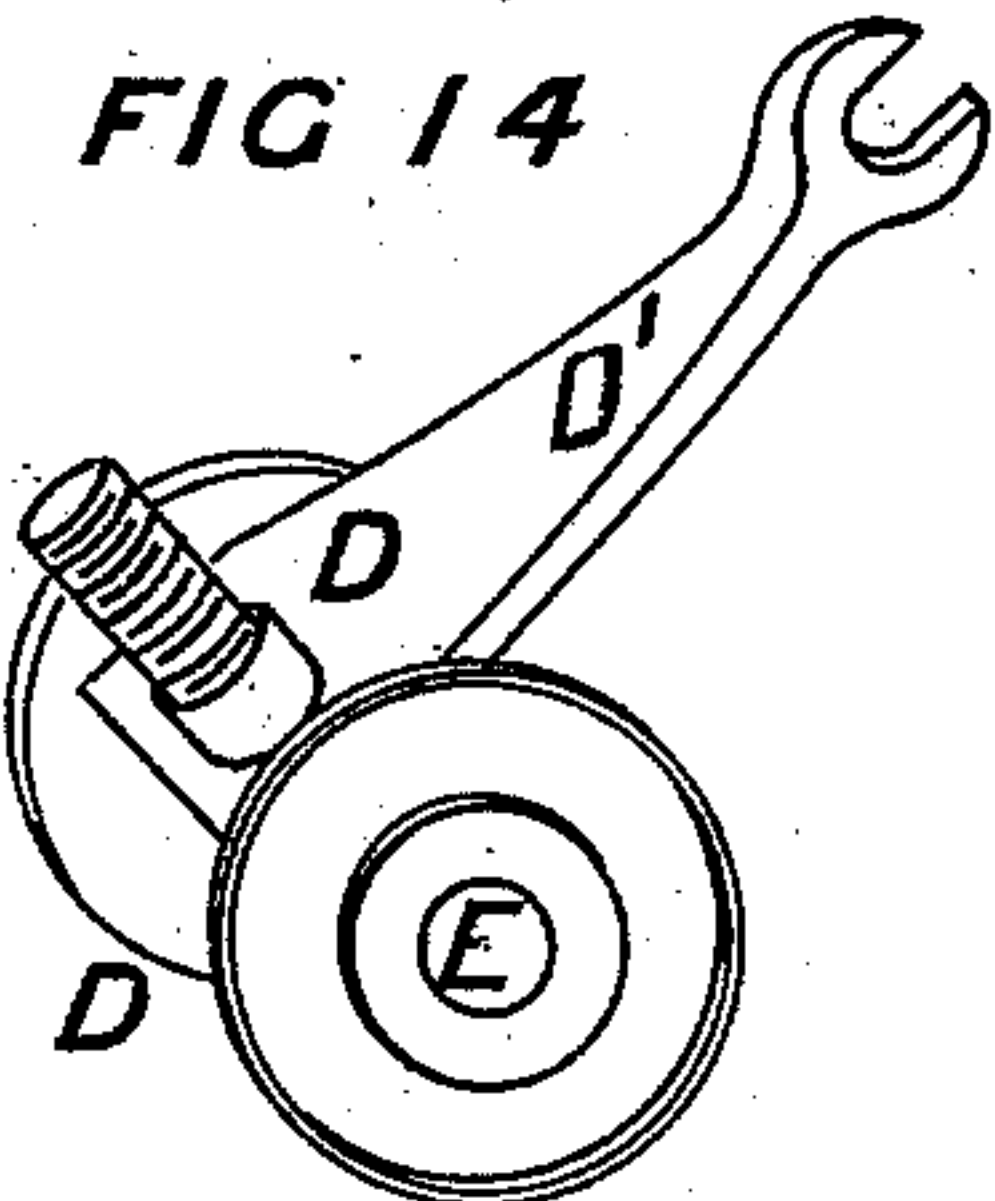


FIG 17

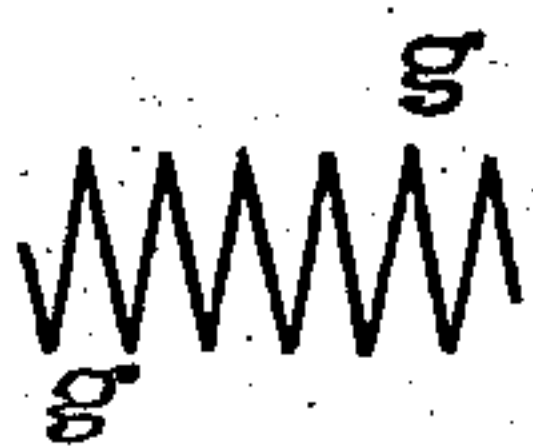


FIG 20

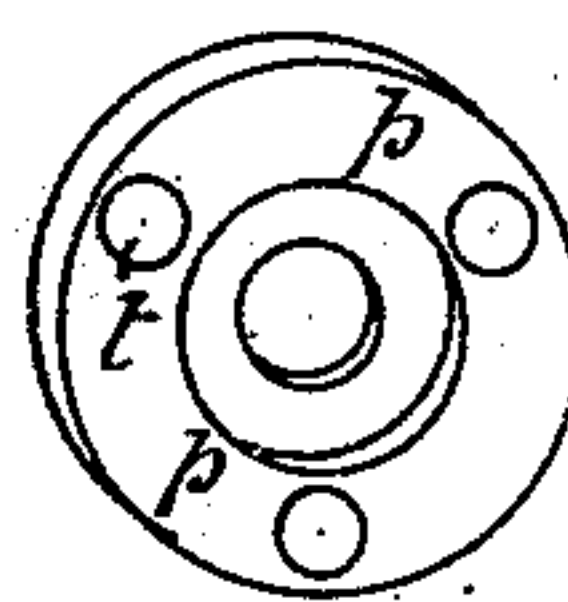


FIG 18

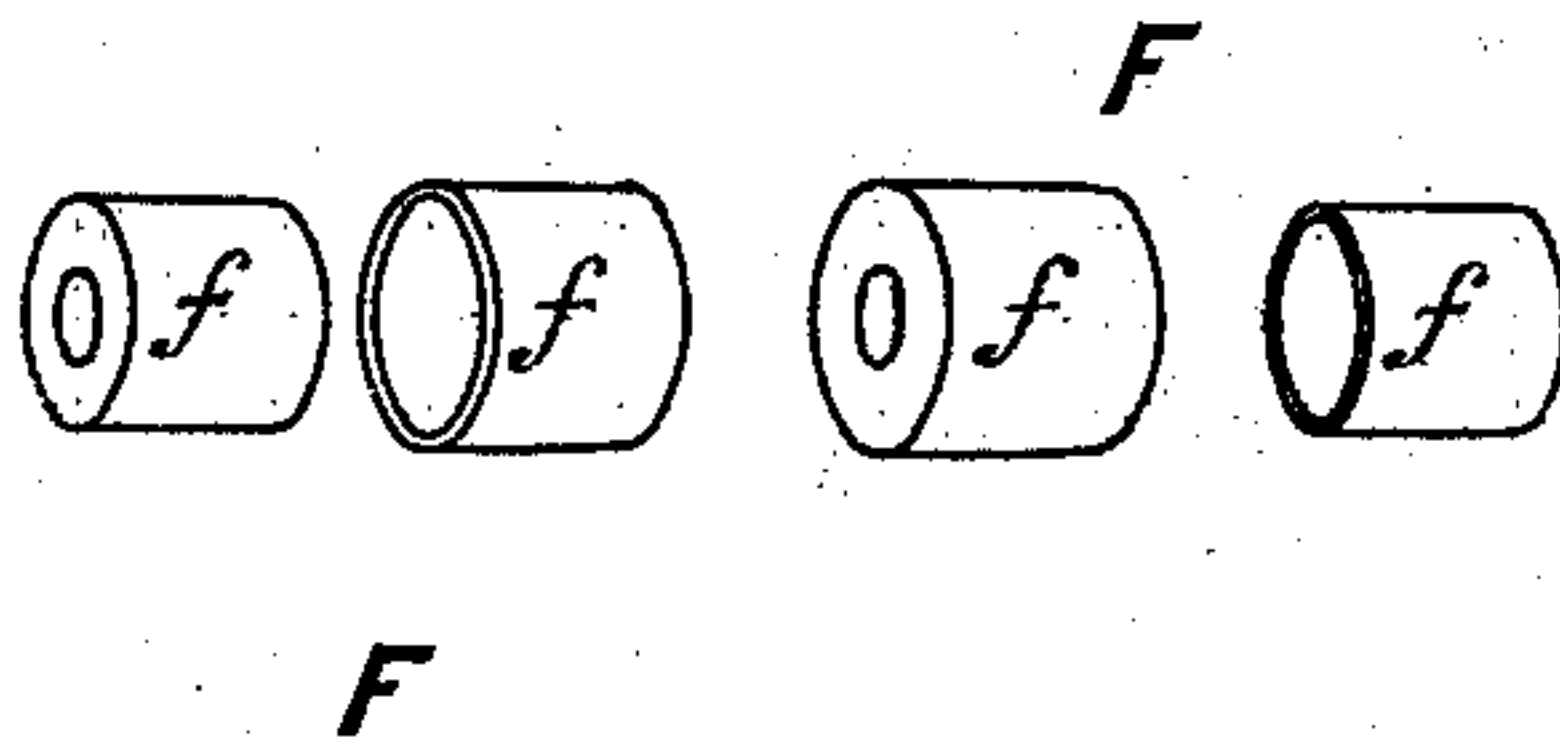


FIG 21

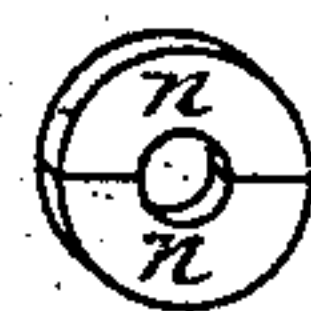
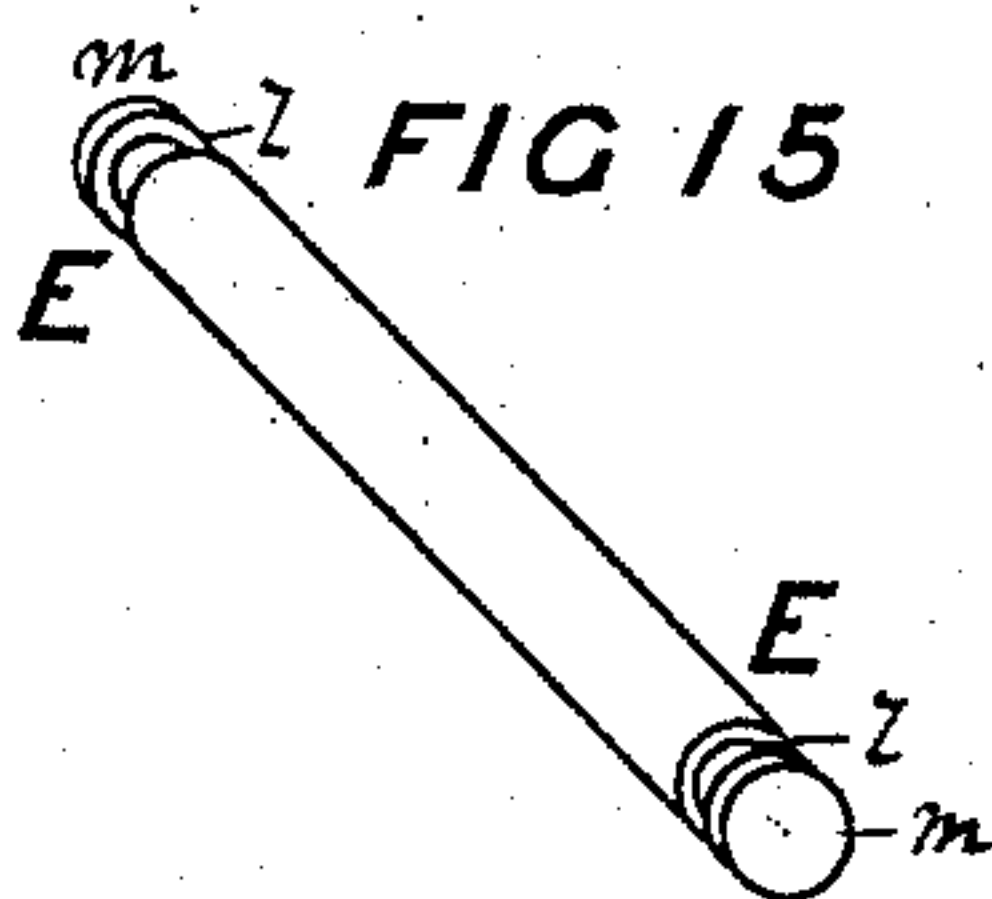


FIG 15



WITNESSES

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# UNITED STATES PATENT OFFICE.

JAMES MACKAY, OF LIVERPOOL, COUNTY OF LANCASTER, ENGLAND.

## ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 235,887, dated December 28, 1880.

Application filed June 14, 1879. Patented in England June 6, 1878.

*To all whom it may concern:*

Be it known that I, JAMES MACKAY, of Liverpool, in the county of Lancaster, in that part of the United Kingdom of Great Britain and Ireland called England, have invented certain new and useful Improvements in Roller-Skates; and I do hereby declare the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention is intended as an improvement upon the present method of attaching the rollers or runners to the foot-stock of a roller-skate, and on the method of controlling the action of said rollers or runners and lubricating the axles thereof.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe the construction and operation, referring to the annexed drawings, in which like letters are used to denote the same or corresponding parts.

Figure 1 represents a side elevation of a roller-skate fitted with brackets and controlling mechanism and having the rollers mounted according to this invention. Fig. 2 is a back view of the heel-rollers, Fig. 1. Fig. 3 is a back view of the toe-rollers, Fig. 1. Fig. 4 is a plan of Fig. 2, viewed from the under side, shown partly in section. Fig. 5 is a plan of Fig. 3, viewed from the under side, shown partly in section. Fig. 6 is a perspective view of a roller according to my invention. Figs. 7, 8, and 9 are details of Fig. 6. Fig. 10 is a plan of the axle for carrying the rollers constructed according to my invention. Fig. 11 is an elevation illustrating a modification of my invention. Fig. 12 is a plan of Fig. 11, viewed from the under side and shown partly in section. Figs. 13, 14, 15, 16, 17, 18, 19, 20, and 21 are details of Figs. 11 and 12.

A is the foot-stock of the skate; B, the rollers; C, the fixed bracket; D, the moving bracket; E, the axle. F is the controlling mechanism, which regulates the movement of the foot-stock and the radiation of the rollers B.

It will be seen that the bracket C has an in-

clined face, C', on which fits and works, by means of the pivot *d*, the moving portion or second bracket, D.

The moving bracket D, in the arrangement shown at Figs. 1 to 10, is provided with horns *e*, which embrace the controlling mechanism F. (See Figs. 3, 4, and 5.)

The controlling mechanism F consists of the barrel *f*, which is cast on and forms part of the bracket C. The barrel *f* contains a spiral spring, *g*, and the telescopic pins or nipples *h*, (see Fig. 4,) the ends of which, *h'*, bear on the horns or arms *e*, before referred to as forming part of the moving bracket D.

The moving bracket D is provided with an oil cup or receiver, *i*, which may be placed as shown at Figs. 1 and 4 or as shown at Fig. 11, the axle E being grooved, as shown at Fig. 10, for distributing the lubricant. Between the moving bracket D and the wheel B, I place a leather washer, *j*.

The method of fitting and retaining the rollers B on their axles E according to my invention will be seen upon reference to Figs. 4 to 10. The roller B is formed with a recess, *k*, and the axle E is formed with grooves *l* and collars *m*. In the groove *l* there fits a retaining washer or disk, *n*, made in halves. (See Fig. 9.) This washer *n* keeps the washer-plate *p* in position on the axle E, the halves of the washer *n* being kept together by the ring *r*. The position of the parts will be understood upon reference to Figs. 4 and 8. The roller B is provided with a bush, S, into which the end of the axle E takes. The wheel B is retained on the axle E by means of the screws *t*, which screw into the plate *p*. (See Fig. 5.)

The modification shown in Figs. 11 to 21 consists in covering in the controlling mechanism F, which is fitted to the foot-stock A, as shown at Fig. 12. The horns *e*, as shown in Fig. 4, are dispensed with, and the bracket D is provided with a tongue, D', which radiates on and is controlled by the spring telescopic mechanism F, the detail of which will be understood upon reference to Figs. 13, 14, 16, 17, and 18.

The axle E is illustrated at Fig. 15, and is a modification on that shown at Fig. 10, and is provided with grooves *l* and collars *m*. The plate *p* and the divided washer *n* fit on the

outside of the roller, as shown at Fig. 12, and the roller is secured by screws *t*, the principle of attachment being similar to that shown at Fig. 4.

5 From the foregoing it will be seen that a roller-skate constructed with brackets, controlling mechanism, and having the rollers retained according to this invention has the advantage of being self-lubricating through the  
10 oil-cups *i* and the grooved axles *E*, the surplus oil being wiped up by the leather washer *j*. The bushes and roller-retaining parts are completely covered in and split pins are dispensed with; also, the controlling mechanism  
15 *F* is incased, and dust and foreign matter cannot enter and clog any of the working parts of the skate, which can be easily wiped and kept clean, free from dirt.

Having thus fully described my invention,

what I claim as new, and desire to secure by 20 Letters Patent, is—

1. The combination of the arm *D* and the inclosed spring-governor *F* with the axle *E*, the several parts to be constructed and arranged with reference to each other substantially as described, for the purpose specified. 25

2. As an improvement in roller-skates, the combination of the collar *m*, divided washer *n*, ring *r*, and plate *p* with the groove *l*, roller *B*, and washer *j*, for the purpose of securing 30 the roller to the axle *E*, substantially as described.

JAMES MACKAY.

Witnesses:

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JOHN HAMILTON REDMOND,  
*Both of 15 Water Street, Liverpool, England.*