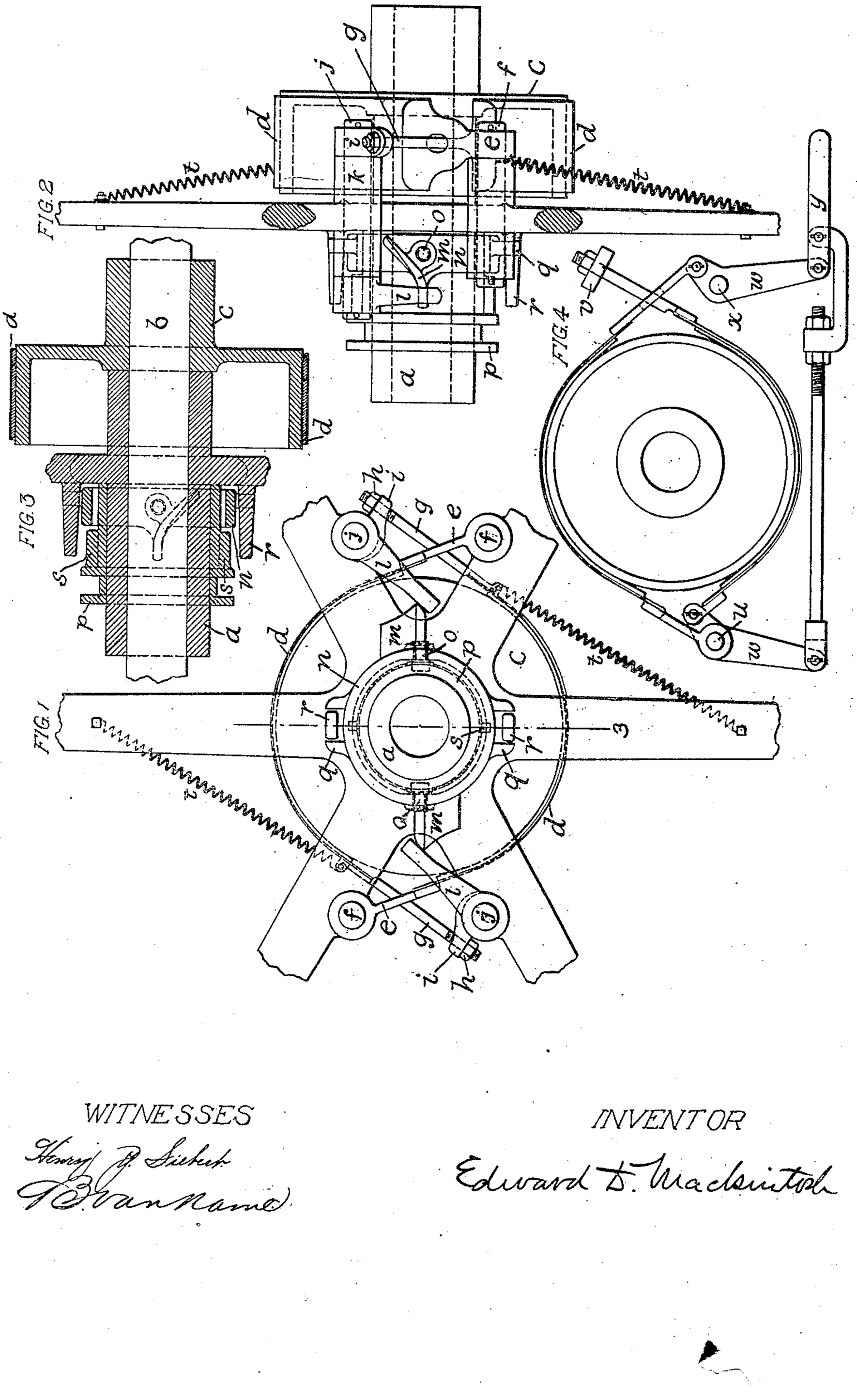
No. 890,672. PATENTED JUNE 16, 1908.

E. D. MACKINTOSH.

FRICTION CLUTCH.

APPLICATION FILED NOV. 27, 1905.



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FRICTION-CLUTCH.

No. 890,672. Specification of Letters Patent. Patented June 16, 1908.

Application filed November 27, 1905. Serial No. 289,174.

To all whom it may concern.

Be it known that I, EDWARD D. MACKINTOSH, of the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Friction-Clutches, of which the following is a specification.

The object of my invention is the avoidance of unbalanced stresses in the action of such clutches.

Referring to the accompanying drawings forming part of this specification: Figures 1 and 2 are front and side views respectively of my invention as applied to the arms and hub of a pulley. Fig. 3 is a section on the line 3 of Fig. 1. Fig. 4 shows my improved clutch for use as a brake.

The pulley hub *a* runs loosely on a shaft *b* to which is fixed the drum *c*. Two flexible bands *d* lined with leather or other suitable material are secured to eye pieces *e* through which pass studs *f*. These studs are secured to the pulley arms and form anchorages for the flexible bands. The opposite ends of the bands are formed with stems *g* having nuts *h* that bear, in each case, on the arm of a lever *i* secured to one end of a rock shaft *j*. This rock shaft passes loosely through a bearing *k* forming part of the pulley arms and has on its other end a lever *l* engaging with a wedge *m* which forms part of an equalizer *n*. The equalizer is pivoted at *o o* to a sleeve *p* arranged to slide on the outside of the pulley hub *a* but is prevented from turning by means of jaws *q* which form part of the equalizer and which engage with posts *r* forming part of the pulley arms. The motion of the equalizer on the pivots is of a swinging nature and is limited by the two stops *s* forming part of the sleeve *p*.

The drawings show the clutch as set, the bands *d* being held in contact with the drum *c* by the action of the wedges *m* on the levers *l*. The equalizer is clear of the stops *s* and each of the levers *l* is tending to swing both of the wedges *m* in a direction opposite to that in which the other is tending to swing them. The reaction of each lever is the action on the other and the pull on the flexible bands is therefore equal and opposite. By sliding the sleeve to the end of the pulley hub the equalizer with its wedges is withdrawn from the position where the latter act to hold the flexible bands against the drum, and springs *t* attached to the pulley arms and the bands then draw the latter away from the drum.

Referring now to Fig. 4 showing my invention arranged to act as a brake. The two anchorages are represented at *u* and *v*, the former acting also as a stud on which one of the two levers *w* rocks. The other rocks on a corresponding stud *x*. The two studs and the anchorage *v* are fixed in relation to each other. The two levers *w* are connected and operated by a link of adjustable length and a lever *y*.

Having described my invention what I claim as new, and desire to secure by Letters Patent, is:

1. In a friction clutch, a drum, two bands bearing on the drum and pulling each on the other, and two anchorages dividing between them the pull of the drum upon the bands.

2. In a friction clutch, a drum between two anchorages, and two bands bearing on the drum, held by the two anchorages, and pulling each on the other.

3. In a friction clutch, two anchorages, a drum, and two bands pulling on the two anchorages and, in opposite parallel directions, on each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD D. MACKINTOSH.

Witnesses:

B. VAN NAME;

HENRY J. SIEBERT.