

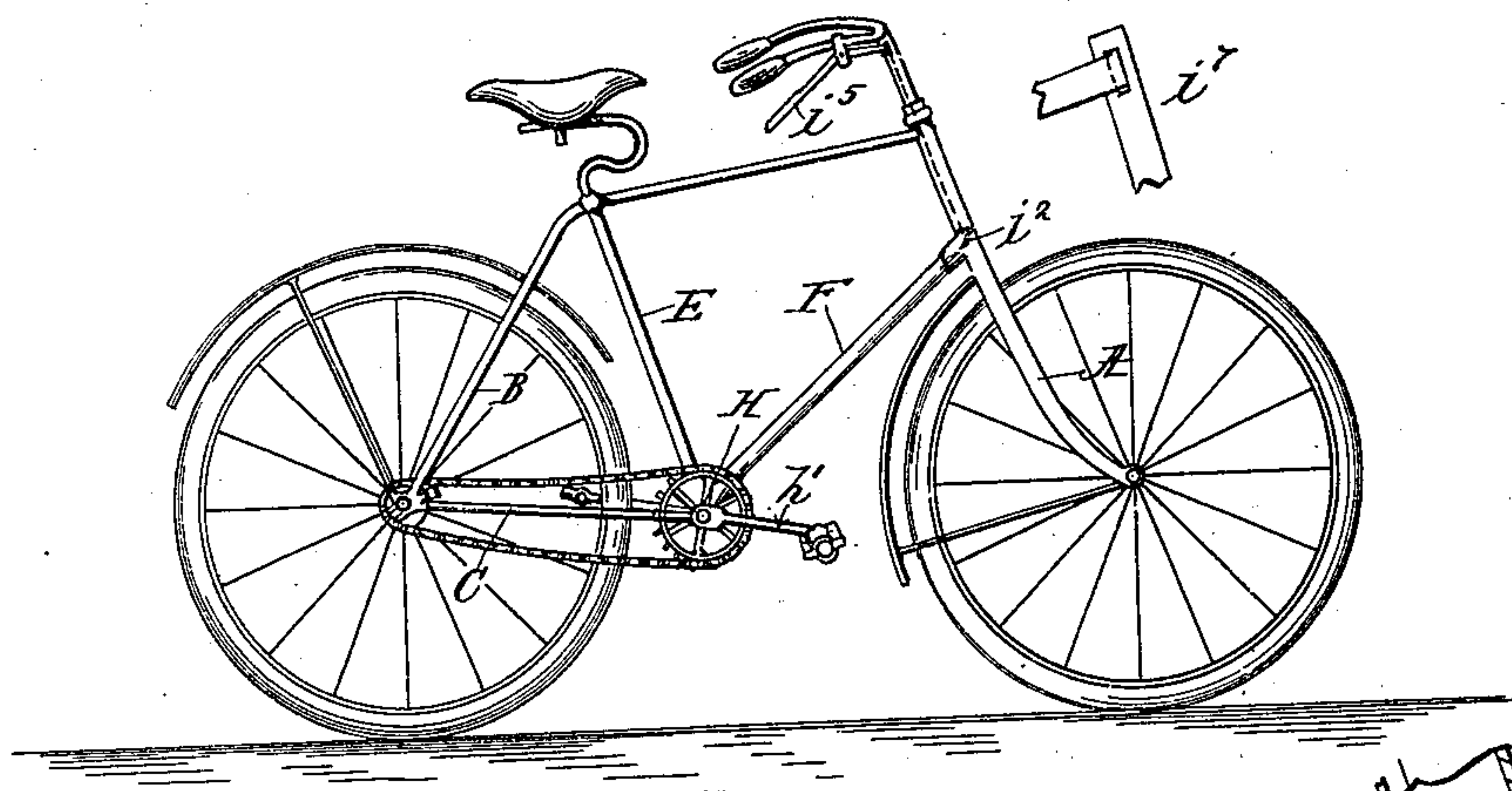
(No Model.)

E. S. HALL.  
BRAKE.

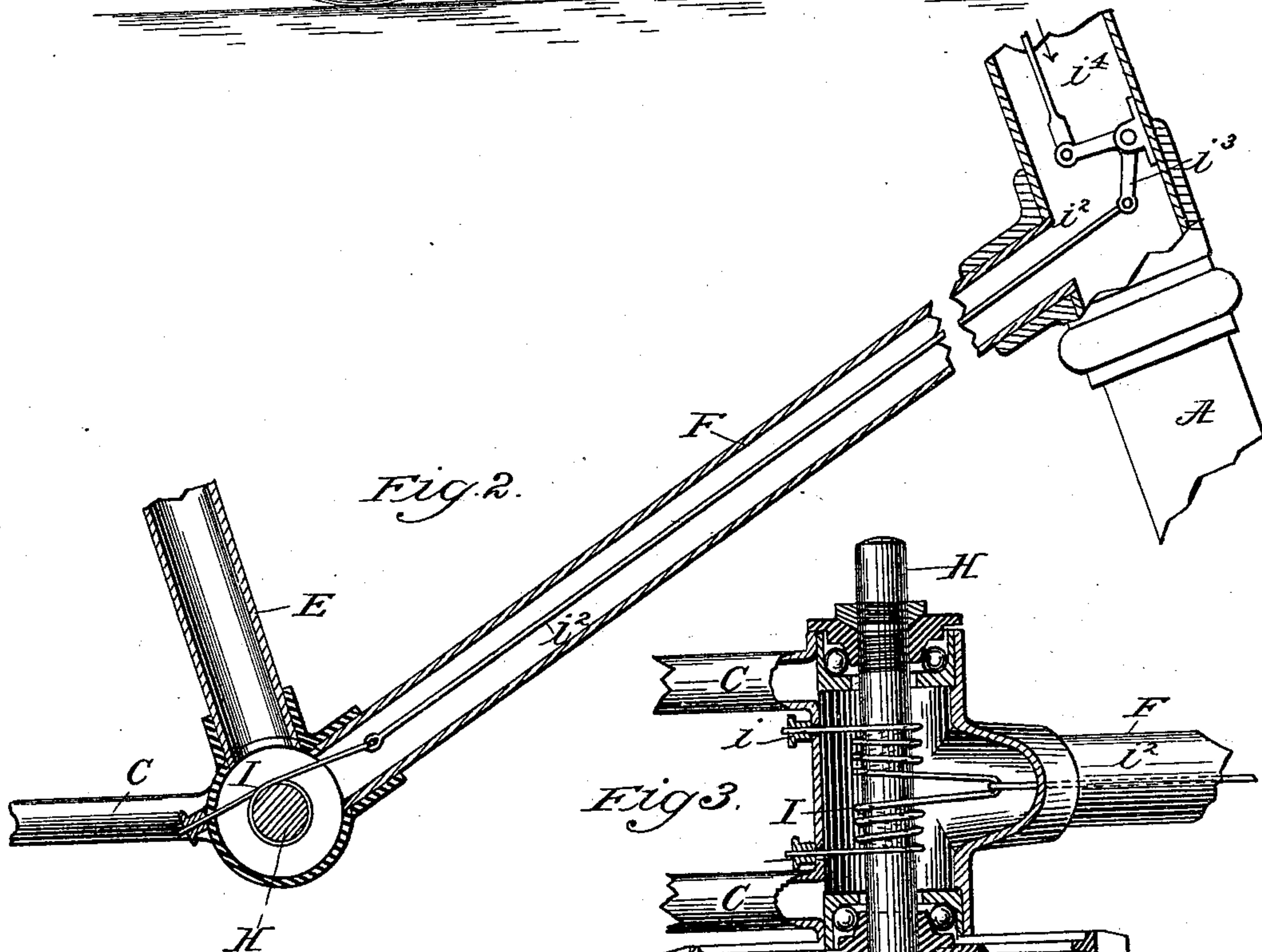
No. 545,492.

Patented Sept. 3, 1895.

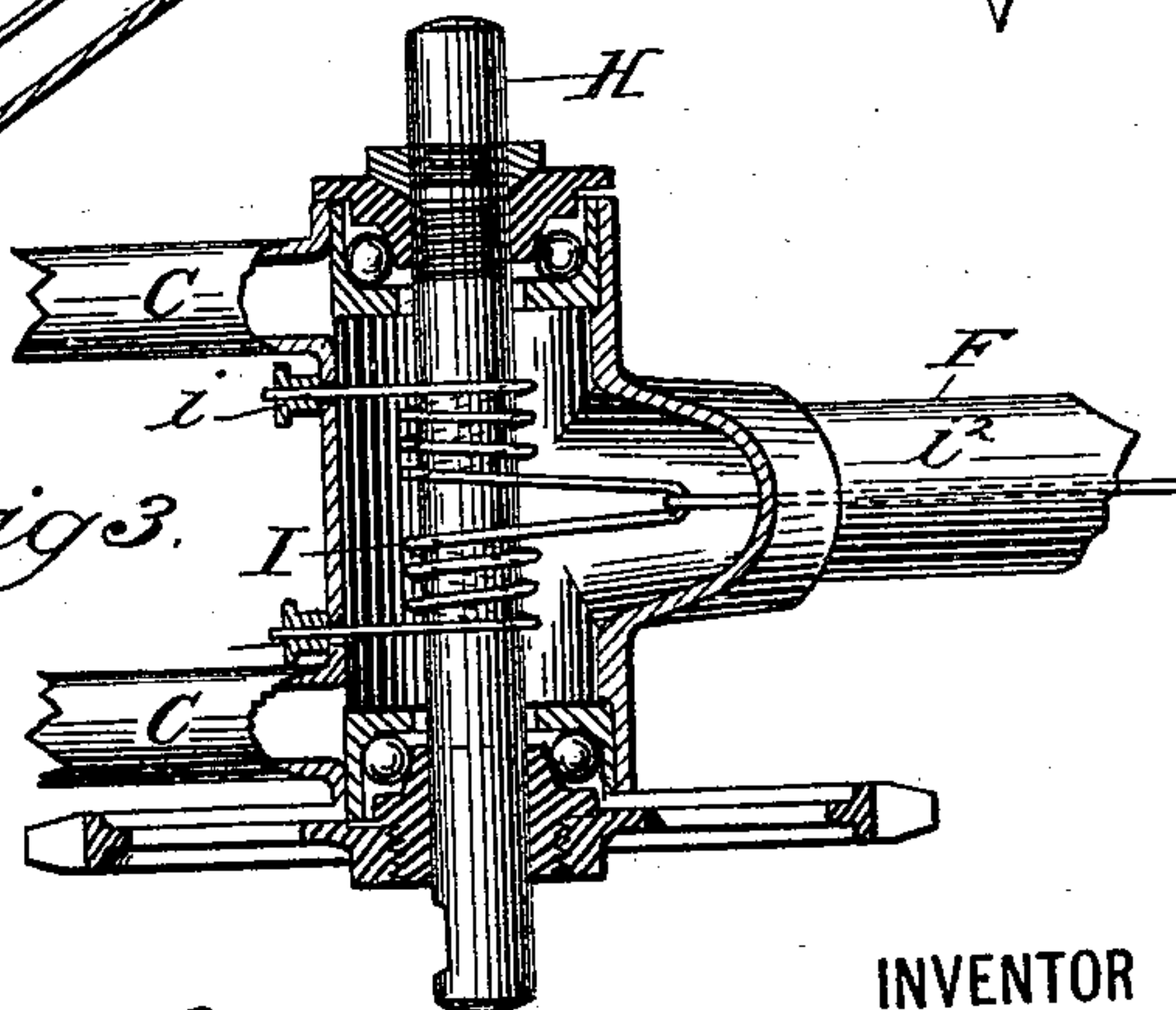
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:  
Edward C. Rowland.  
M. Turner.

INVENTOR  
E. Spencer Hall

BY  
Price Stewart  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

EDWARD SPENCER HALL, OF NEW YORK, N. Y.

## BRAKE.

SPECIFICATION forming part of Letters Patent No. 545,492, dated September 3, 1895.

Application filed October 5, 1894. Serial No. 524,966. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SPENCER HALL, of the city, county, and State of New York, have invented a new and useful Improvement in Brakes, of which the following is a full specification.

My invention relates to brakes for bicycles, and consists in applying a band-brake to the crank or pedal shaft within the usual tube thereon joining the axle-journals by winding the same thereon in the shape of a coil. It may be made of flexible or semiflexible material in the form of a cord, wire, or band and is provided with means for drawing the coil to tighten the same on the shaft.

Figure 1 of the drawings is a side view of a bicycle, showing the crank-shaft and the brake attachment. Fig. 2 is an enlarged sectional view of part of the tubular frame of the apparatus, showing the crank-shaft with the brake and its connections; Fig. 3, a plan view of a portion of the tubular framework, partly in section and taken on line *xx* of Fig. 2, showing crank-shaft and brake.

The parts of a bicycle are well known, and the one chosen for illustration consists, chiefly, of a tubular framework, which carries all of the journals.

A carries the journals of the front wheel, B and C those of the rear wheel, while C, E, and F carry and support the journals for the crank-shaft.

H is the crank-shaft; *h'*, the crank with its pedal. Around the crank-shaft I place the brake I, which consists of a coil of cord, wire, or band made of suitable material, and, if of metal, may be tempered to give it sufficient spring to enable it to return to normal when released. This cord or band may be coiled upon the shaft either single or double. As shown in the drawings it is double, and should be so wound upon the shaft that when tightened the tendency of the shaft to turn will assist in tightening the brake. The end or ends of the brake may be secured in any suitable manner. As shown in the drawings, they are passed through the walls of the surrounding tube and secured by the nuts or bolts *i*. The other end may be looped and the loop connected to the chain or bar *i*<sup>2</sup>, at the other end of which it is attached to one arm of a bell-crank lever *i*<sup>3</sup>, suitably pivoted within

the tube A, and to the other arm of this lever is attached a connecting rod or chain *i*<sup>4</sup>, which proceeds up through the tube and at its other end is connected with the pivoted brake-handle *i*<sup>5</sup>, which passes through a slot *i*<sup>7</sup> in the tube A. The rod *i*<sup>4</sup> may run outside of the tube A, if desired, and thus dispense with the slot *i*<sup>7</sup>.

The operation of the device is very simple. The hand actuates the brake-handle *i*<sup>5</sup> in the usual way, which draws the coil I and tightens it upon the crank-shaft. The tendency of this shaft to revolve assists in tightening the coil, stops the revolution of the shaft, and this, acting upon the sprocket-chain or cogged rod, stops the wheel with which it is connected. By this arrangement I effect an economy in construction and provide an effective arrangement for braking applied directly to the pedal-shaft, which enables me to dispense with a wheel or pulley thereof.

What I claim, and desire to secure by Letters Patent, is—

1. A brake for a bicycle consisting of a wire or band, applied directly and coiled upon the pedal or crank-shaft in a direction corresponding with the motion of the same, and within the tube joining the journals of said crank-shaft and suitably secured at one of its ends, in combination with means for drawing the coil and thereby tightening the same upon the shaft.

2. A brake for a bicycle consisting of a wire, cord or band applied directly and coiled upon the pedal or crank shaft in a direction corresponding with the motion of the same, and within the tube joining the journals of said shaft and suitably secured at one end and provided at its other end with connections to the hand of the rider, whereby the same may be drawn and tightened, in combination with the rear wheel of the bicycle, and a sprocket chain connecting the axle of the same with the crank or pedal axle, substantially as described.

Signed at New York city, in the county of New York and State of New York, this 27th day of September, A. D. 1894.

E. SPENCER HALL.

Witnesses:

EDWARD C. ROWLAND,  
WILLIAM SUTPHEN.