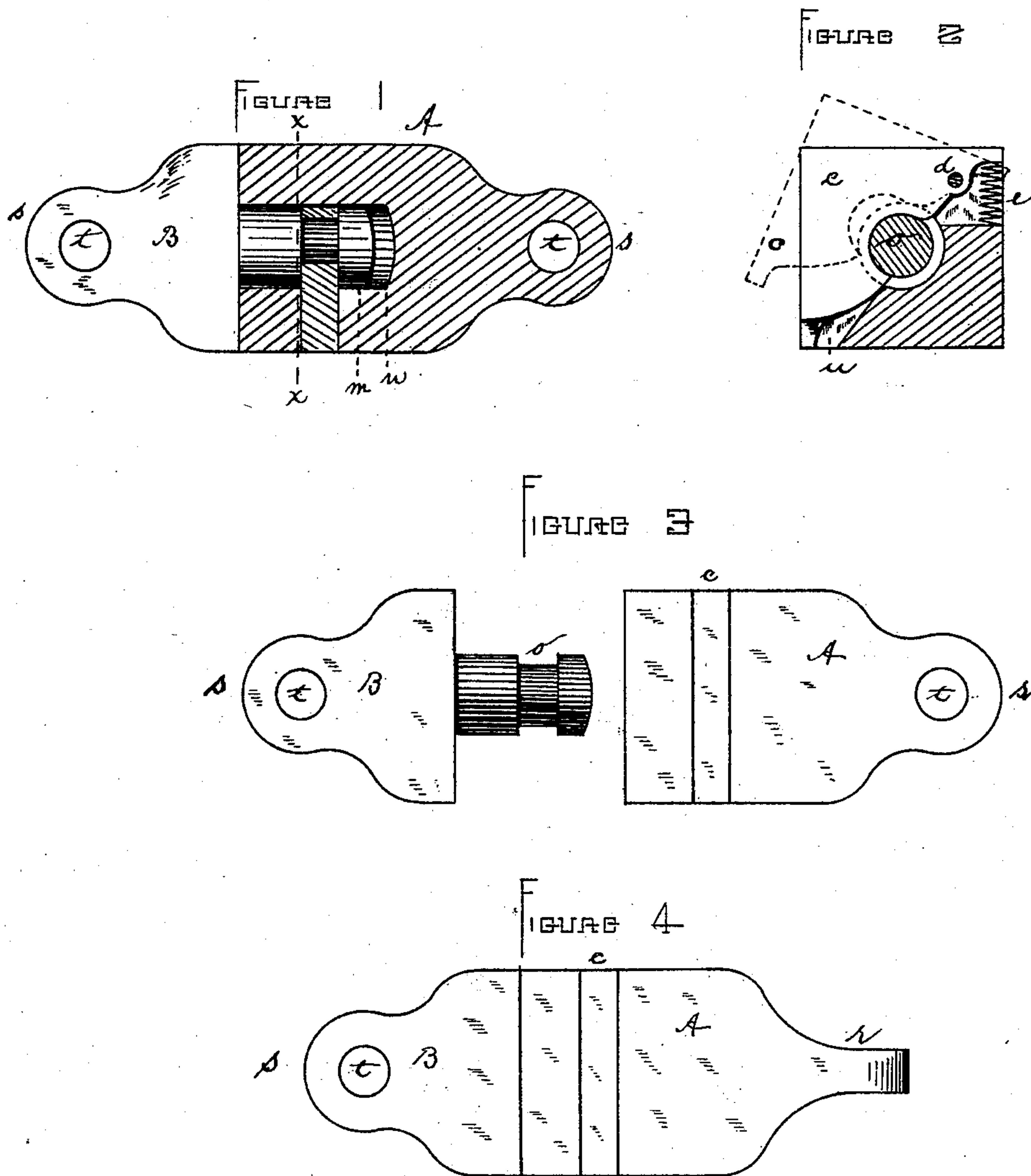


(No Model.)

L. KNAAK.
WIRE ROPE CLUTCH.

No. 360,891.

Patented Apr. 12, 1887.



Witnesses.

Walter Reese
C. F. Ahler.

Inventor.

Louis Knaak
By Jacob Reese Attorney

UNITED STATES PATENT OFFICE.

LOUIS KNAAK, OF OAKDALE, PENNSYLVANIA.

WIRE-ROPE CLUTCH.

SPECIFICATION forming part of Letters Patent No. 360,891, dated April 12, 1887.

Application filed June 1, 1886. Serial No. 203,733. (No model.)

To all whom it may concern:

Be it known that I, LOUIS KNAAK, a subject of the Emperor of Germany, now residing at Oakdale, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Wire-Rope Clutches; and I hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

A traveling wire rope is now largely used in drawing coal-cars out of the pits. In some of the mines the cars are drawn up an incline until they emerge from the pit, and then the track declines, so that it becomes necessary to have the first car of the train attached to the front end of the rope, so as to draw the cars out of the pit; and the rope must also be attached to the last car of the train, in order to hold from undue forward motion when descending the decline on the outside of the pit. The cars are attached to the wire rope by means of a clutch or coupling, and there is generally a strain on the clutch, whether the rope is in transit or at rest, so that it is essential to have a clutch which may be readily and instantly detached, whether under strain or not. Wire rope has a great tendency to twist. When the wire rope emerges from the pit, the sun shines on the top strands and expands them, and thus the rope is twisted, and when turning angles in the pit extra strain is put on some of the strands and the rope twists; hence a swiveled clutch is also essential to the well-working of a wire rope for drawing cars out of mines.

The object of my invention is to furnish a clutch for wire ropes which will be easily attached and detached when under strain or otherwise, and which will permit the rope to twist in any direction without injuring it.

My invention consists in constructing the clutch in such a manner that the two parts may be easily connected and firmly held together by means of a latch which will permit the two parts to rotate in any direction as a swivel.

Figure 1 is a longitudinal view, partly in section. Fig. 2 is a cross-sectional view at *x*, showing the latch. Fig. 3 is a view of the clutch when detached. Fig. 4 is a view of same when locked.

In the construction of my improved swivel-clutch I cast the barrel A of cast-steel. A

steel latch, *c*, is then placed in A, as shown in Fig. 2. This latch *c* is attached to A by means of the pin *d*, around which the latch moves. Just back of the pin *d* a spiral spring, *e*, is placed, which is fastened at its base to A and at the top to the latch *c*. This spring is so adjusted as to force the latch down, as shown in Fig. 2, and still permit of the latch being raised, as shown in dotted lines in Fig. 2. I cast the part B of cast-steel, the end *m* being a little less in diameter than the opening *n* in A. This part B has a groove in it at *o*, and corresponding in size to the curve in the latch *c*. The other ends of A and B are flattened one way, as shown at *r*, and curved and perforated on the other side, as shown at *s*, so as to pass the rope through the hole and fasten it to the clutch.

When my improved swivel-clutch is so constructed and attached to different sections of wire rope, I raise the latch *c* and insert the end *m* of B into the opening *n* of A, and then let the latch *c* down. The latch *c* then goes into the groove *o* of B and locks the clutch, thus forming a swivel-clutch.

It will be noticed that while the latch firmly locks A and B together both are free to revolve in any direction. When it is desired to unlock the clutch, there is a recess in A at *u*, so that an iron hook may be inserted and the latch *c* raised to the position shown in dotted lines in Fig. 2, when the section B may be withdrawn and the parts thus separated.

The advantages of my improved swivel-clutch are: first, it is cheaply made; second, it may be attached or detached readily whether under strain or not; third, it prevents the twisting of the rope in either direction without injury.

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

1. As a new article of manufacture, a swivel-clutch consisting of the parts A and B, and provided with the latch *c* and spring *e*, constructed substantially as shown.

2. In a swivel-clutch, the combination of the latch *c* with the part A and the grooved part B, constructed so that when the clutch is locked either part may freely rotate, as described.

LOUIS KNAAK.

Witnesses:

GRAHAM SCOTT,
JOHN THOMAS.