(Model.)

2 Sheets—Sheet 1.

L. H. SPARKS.

WIND ENGINE.

No. 246,427. Patented Aug. 30, 1881.

Fig. 1.

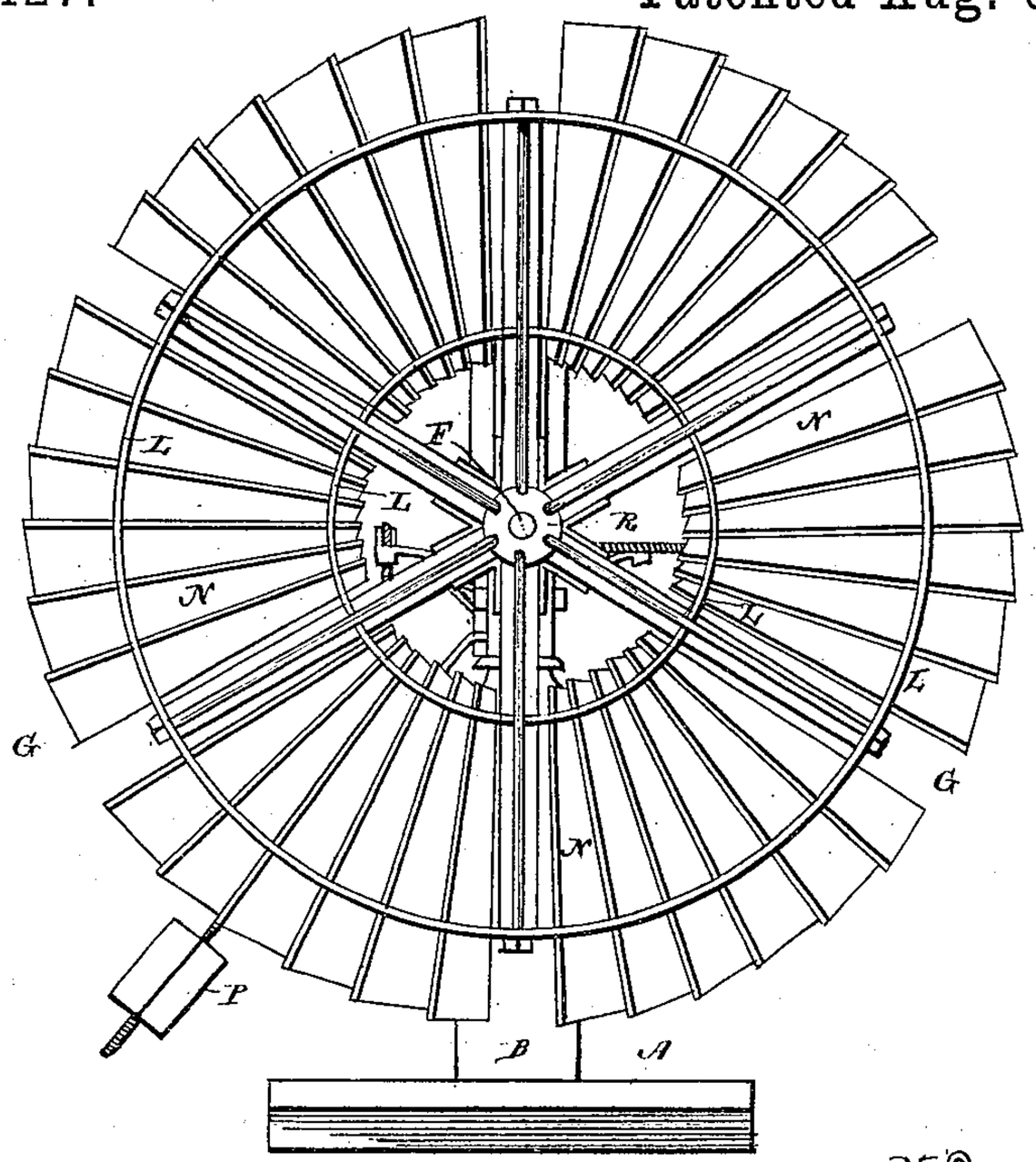

Fig. 2.

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(Model.)

2 Sheets—Sheet 2.

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Fig. 3.

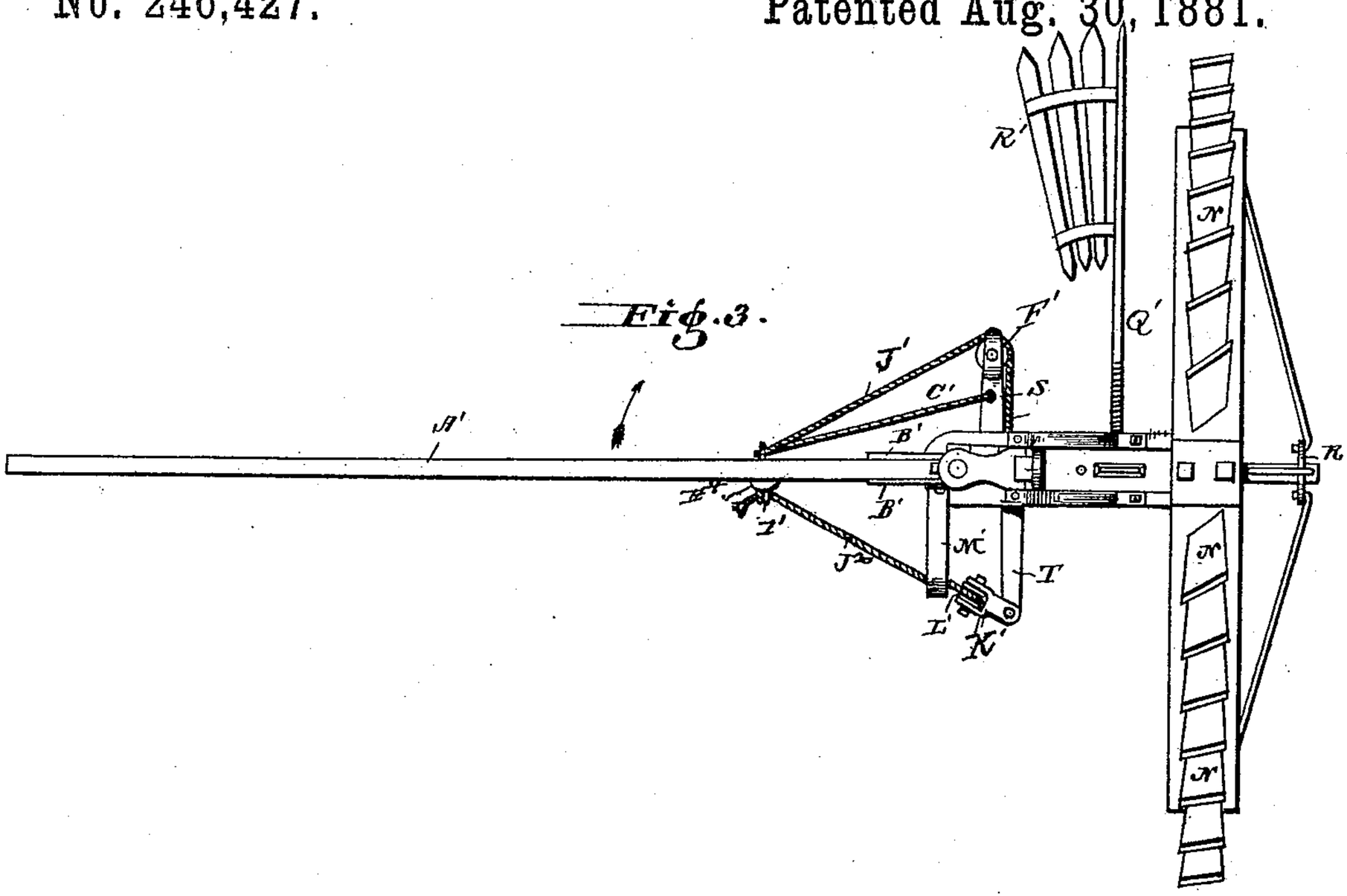
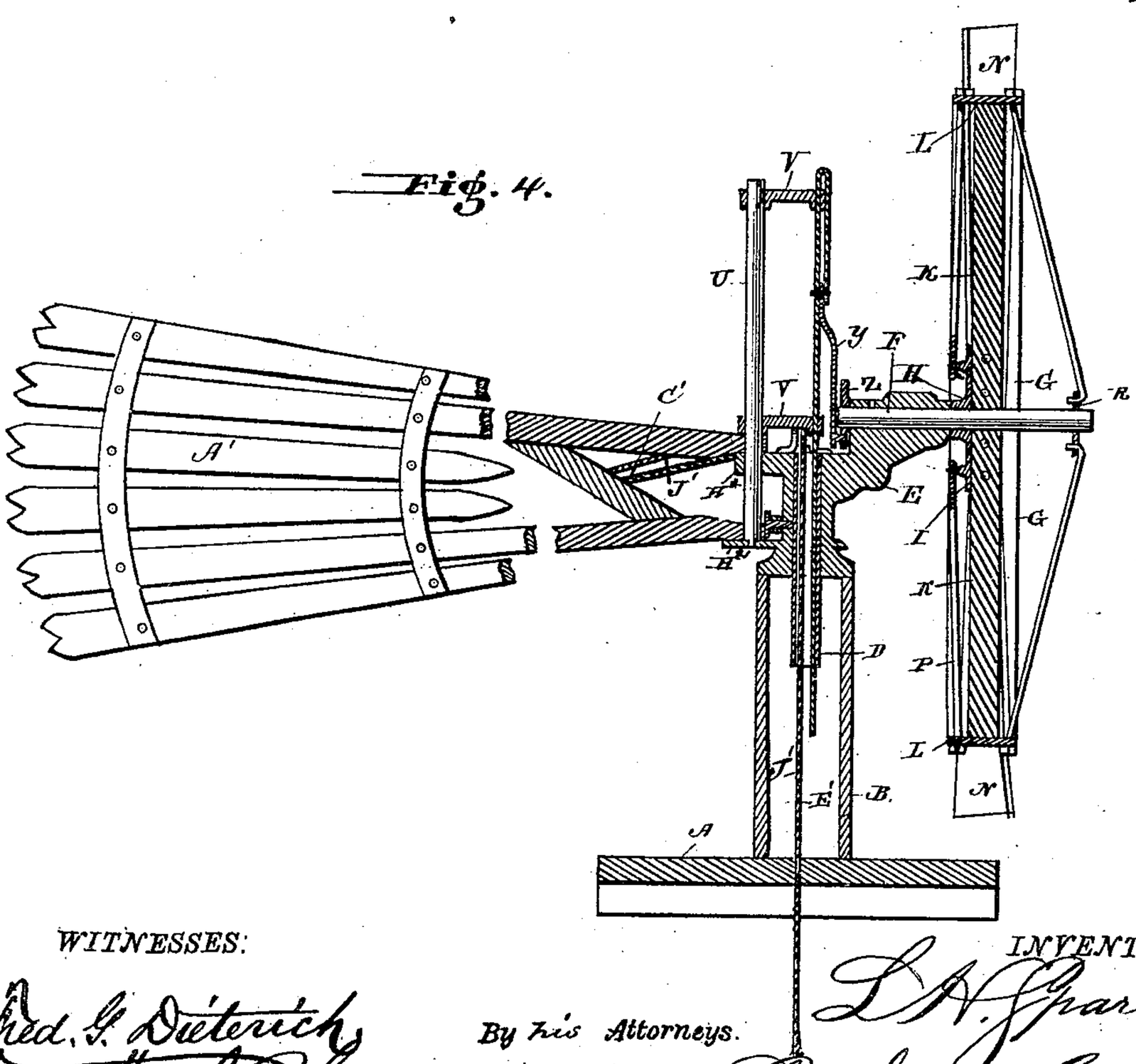


Fig. 4.



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UNITED STATES PATENT OFFICE.

LORENZO H. SPARKS, OF TRIUMPH, OHIO.

WIND-ENGINE.

SPECIFICATION forming part of Letters Patent No. 246,427, dated August 30, 1881.

Application filed March 21, 1881. (Model.)

To all whom it may concern:

Be it known that I, LORENZO H. SPARKS, of Triumph, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Wind-Engines; and I do 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, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a front view. Fig. 2 is a side view. Fig. 3 is a top plan. Fig. 4 is a longitudinal vertical sectional view.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to wind-engines; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents the standard or frame of the engine, which is provided with a vertical tubular bearing, B, for the frame C, which is provided with a sleeve, D, by which it is mounted upon the said bearing.

The body or sleeve D of frame C is provided with a forward-projecting bracket, E, forming a box or bearing for the main shaft F of the wind-wheel G. The latter consists of a hub, H, having inward-projecting brackets I, formed with sockets for the radiating spokes K. Two or more rims, L, are used, having diagonal slots to accommodate the vanes N, which are firmly wedged in the said diagonal slots. Mortises are also provided in the rims L for the accommodation of the spokes K. The outer ends of the brackets I of hub H are connected by braces E with the outer rim L of the wheel, and similar braces connect the outside of said outer rim with a disk, R, fixed upon the outer end of the main shaft F, thus bracing and strengthening the wheel.

H′ H² are brackets projecting rearward from the frame C and supporting a vertical pivotal rod, U, to which a pair of brackets, V V, projecting in a forward direction, are firmly secured. The upper bracket V is braced to the forward-projecting bracket E by means of connecting-rods W, as shown. The brackets V V are provided with bearings for the vertically-sliding pump-rod X, the upper end of which is curved in a forward and downward direction over the upper bracket V, thus forming a U-shaped bail, serving as a guide to steady the motion of the upper end of the pump-rod. Between the end of the U-shaped guide and the body of the pump-rod or pitman is pivoted a connecting-rod, Y, connecting the said rod with a crank-disk, Z, at the inner end of the main shaft F, from which motion is thus communicated.

A′ is the vane, which is hinged by means of straps B′ upon the vertical rod U, upon which it may turn in the direction indicated by the arrow, it being prevented from turning in the opposite direction by a cord or chain, C′, by which it is connected to a bracket, S, projecting laterally from the frame or turn-table C. A rope or chain, J′, secured to the same side of the vane, is passed over a pulley, F′, mounted upon the bracket S, and over a vertical pulley suitably mounted upon the turn-table. From thence the said cord passes down through the sleeve D to a point where it may be readily reached and manipulated by a person standing upon the ground, who is thus enabled to so adjust the vane as to throw the wheel out of the wind in case of high wind or whenever it is desired to slacken the motion. The opposite side of the vane is provided with a bracket, H⁴, having an eye or bearing, I′, for a rope or chain, J², secured to this side of the vane and passed over a pulley, K′, mounted in a block, L′, pivoted to a bracket, T, projecting laterally from the frame or turn-table.

The end of rope J² is attached to an eye, N′, formed upon a rod, O′, pivoted to the side of the frame, and bent or curved as shown. The rod O′ is threaded, so as to receive an adjustable weight, P′, by which the vane is thus counterbalanced and held in its proper position, while any sudden or jerking motion is obviated when the wheel is in the act of turning to the wind.

The bracket E of the frame C is provided with a laterally-extending rod, Q′, at right angles to the axis of the wheel, and carrying at its outer end a vane, R′, adjusted just behind the rim of the wheel. In the event of any sudden or strong gust of wind this vane will be

acted upon, thus turning the wheel partly out of the wind and preventing that sudden and jerking increase of speed which is so injurious to the machinery of ordinarily-constructed wind-engines.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. It is simple, inexpensive, durable in construction, and easily managed in case of high wind.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The wheel G, formed of the hub H, having brackets I, the disk R, the radial spokes, the brace-rods upon either side connecting with the outer ring L, and the vane-leaves N, secured in the transverse slots in the duplex rings L, all combined and operating as set forth.

2. The tie C′, to limit the action of the main vane in one direction, the bracket S, rope J′, wheel G, and vane A′, combined with the rope J^2, weighted lever O′ P′, and safety-vane Q′ R′, as and for the purposes set forth.

3. The looped pump-rod X, braces W, and pitman Y, combined with the piece V, crank Z, and shaft F, as and for the purposes set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LORENZO H. SPARKS.

Witnesses:

WILBUR J. PILSON,

EDWIN WINCHEL.