

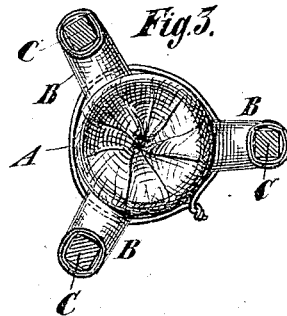
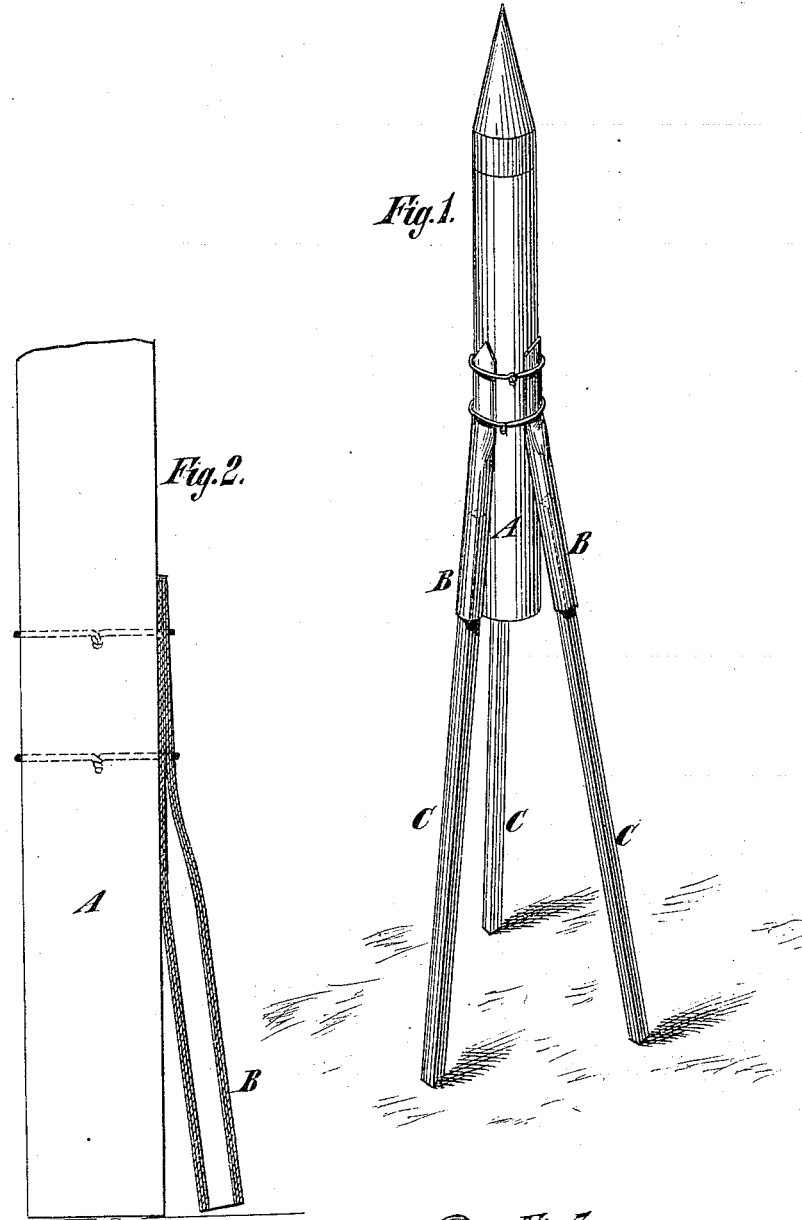
(No Model.)

J. J. DETWILLER.

ROCKET.

No. 276,007.

Patented Apr. 17, 1883.



Witnesses
James K. Bowen.
T. J. Keane

Inventor
Jacob J. Detwiler
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UNITED STATES PATENT OFFICE.

JACOB J. DETWILLER, OF JERSEY CITY, NEW JERSEY.

ROCKET.

SPECIFICATION forming part of Letters Patent No. 276,007, dated April 17, 1883.

Application filed November 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. DETWILLER, of Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Rockets, of which the following is a specification.

My improvement relates to those rockets in which the sticks are detachably connected to the bodies to facilitate shipment.

10 The improvement consists in the combination, with a rocket-body, of sockets made of paper, suitable in size to receive sticks, and secured at or near their upper ends to the exterior of the rocket-body, at some distance
15 above the lower end of the latter, so as to extend at angles therefrom, the lower ends of said sockets being capable of yielding relatively to the rocket-body. The elasticity of these paper sockets allows of their being pressed
20 close to the rocket-body to facilitate packing, and of their yielding to admit of the sticks adjusting themselves to the proper angle in the flight of the rocket.

25 The improvement also consists in the combination, with a rocket-body, of sockets made of paper, suitable in size to receive sticks, and having their upper ends flattened and secured to the exterior of the rocket-body, at some distance above the lower end of the latter, the
30 lower ends of the sockets being capable of yielding relatively to the rocket-body. In a very simple manner I thus cause the sockets to extend from the rocket-body at proper angles.

35 The improvement also consists in the combination, with a rocket-body, of sockets made of paper, suitable in size to receive sticks, and having their upper ends flattened and secured by means of adhesive substance and by wire
40 bound round them and the rocket-body to the rocket-body, at some distance above the lower end of the latter, the lower ends of the sockets being capable of yielding relatively to the rocket-body.

45 In the accompanying drawings, Figure 1 is a side view of a rocket embodying my improvement. Fig. 2 is an enlarged sectional view taken lengthwise of the body of the rocket and one of the sockets, and showing a stick in
50 the latter; and Fig. 3 is a transverse section of one of the sockets and a stick inserted therein.

Similar letters of reference designate corresponding parts in all the figures.

A designates the rocket-body. It may be of the usual or any other suitable construction, and charged and primed in any approved manner.

B designates a number of sockets, forming detachable connections between the rocket body and sticks C. These sockets may be of any suitable number—three will be sufficient. The sockets are of cylindrical form, and the sticks are shown as square. They will preferably be triangular, square, or polygonal, and will be held firmly in the sockets. The sockets are made entirely independent of the rocket-body, and they may be produced by winding paper on a core, former, or mandrel, and securing the coils against unwinding by means of an adhesive substance. The upper portions are flattened and laid against the rocket-body at some distance above its lower end. They are secured to the rocket-body by means of glue or other adhesive substance, and preferably also by wires bound around them and the rocket-body. They may then be bent so that they will lie close to the rocket-body, and hence facilitate the packing of the rockets for transportation; but they have a tendency to spring or extend outward at angles relatively to the rocket-body. These sockets are light and cheap, and secure the sticks firmly within them. They are less apt to cause injury to anything which they may strike. Their resilience or flexibility enables them to yield, so that the sticks can assume the most desirable angles in the flight of the rocket through the air. The flattening of the sockets makes them internally tapering, so that they will grip and secure the sticks firmly.

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

1. The combination, with a rocket-body, of sockets made of paper, suitable in size to receive sticks, and secured near their upper ends to the exterior of the rocket-body, at some distance above the lower end of the latter, so as to extend at angles therefrom, the lower ends of said sockets being capable of yielding relatively to the rocket-body, substantially as specified.

2. The combination, with a rocket-body, of

sockets made of paper, suitable in size to receive sticks, and having their upper ends flattened and secured to the exterior of the rocket-body, at some distance above the lower end of the latter, the lower ends of said sockets being capable of yielding relatively to the rocket-body, substantially as specified.

3. The combination, with a rocket-body, of sockets made of paper, suitable in size to receive sticks, and having their upper ends flattened and secured by means of adhesive sub-

stance and by wire bound around them and the rocket-body to the rocket-body, at some distance above the lower end of the latter, the lower ends of the sockets being capable of yielding relatively to the rocket-body, substantially as specified.

JACOB J. DETWILLER.

Witnesses:

T. J. KEANE,
JAMES R. BOWEN.