A. WINKLER.

PORTABLE FIRE ESCAPE.

APPLICATION FILED JULY 25, 1914.

1,167,239.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

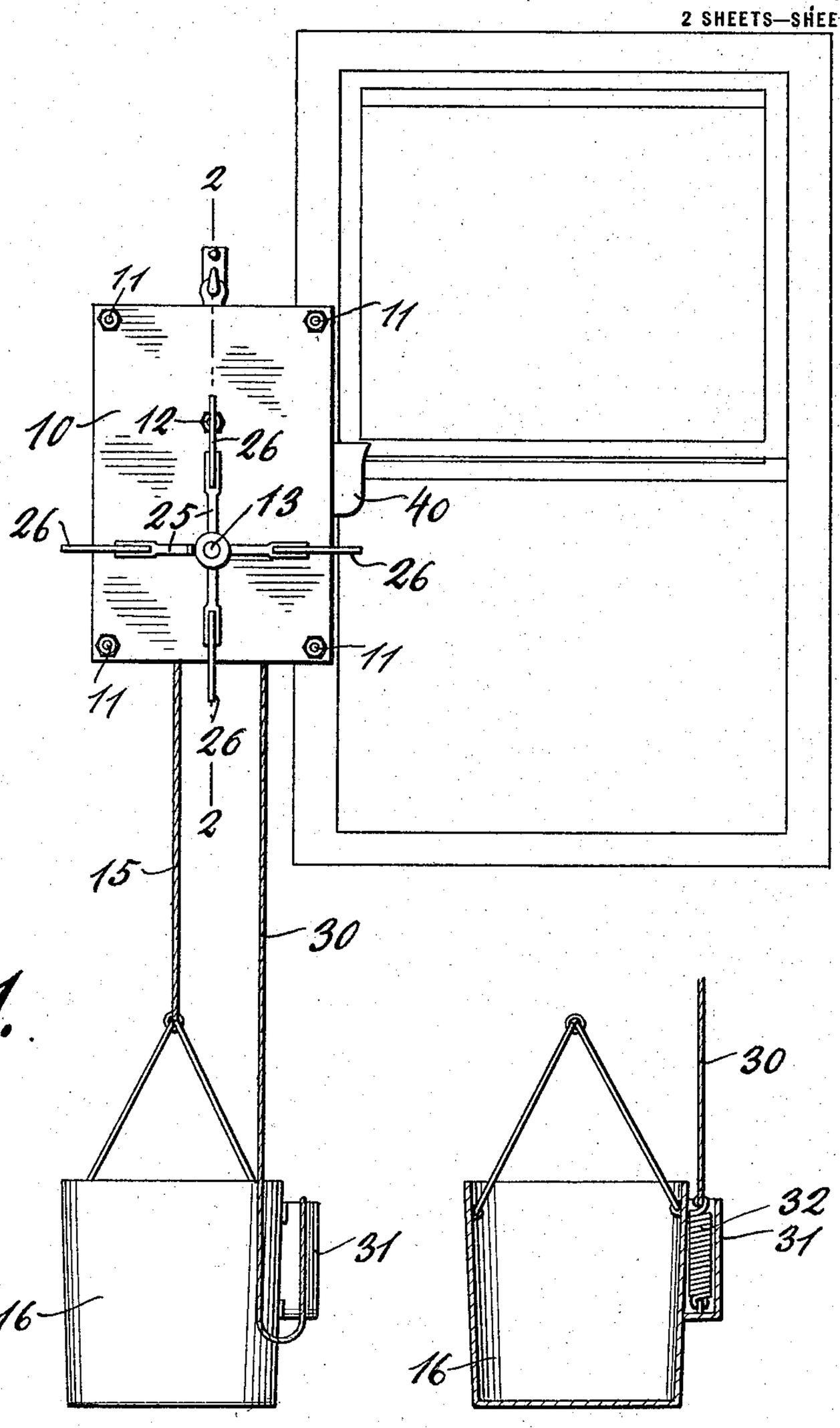

Fig. 1.

Fig. 4.

Witnesses

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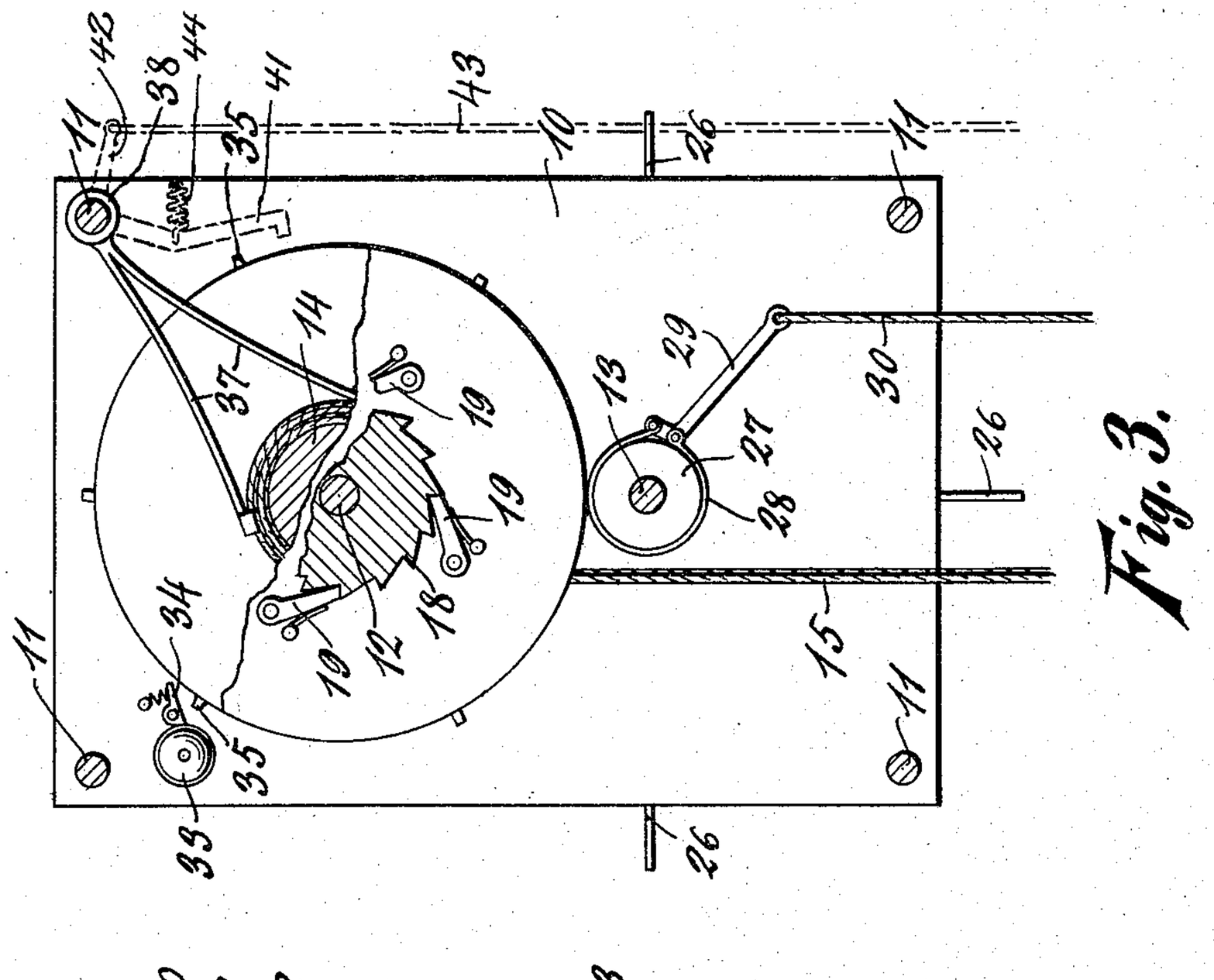

Fig. 3.

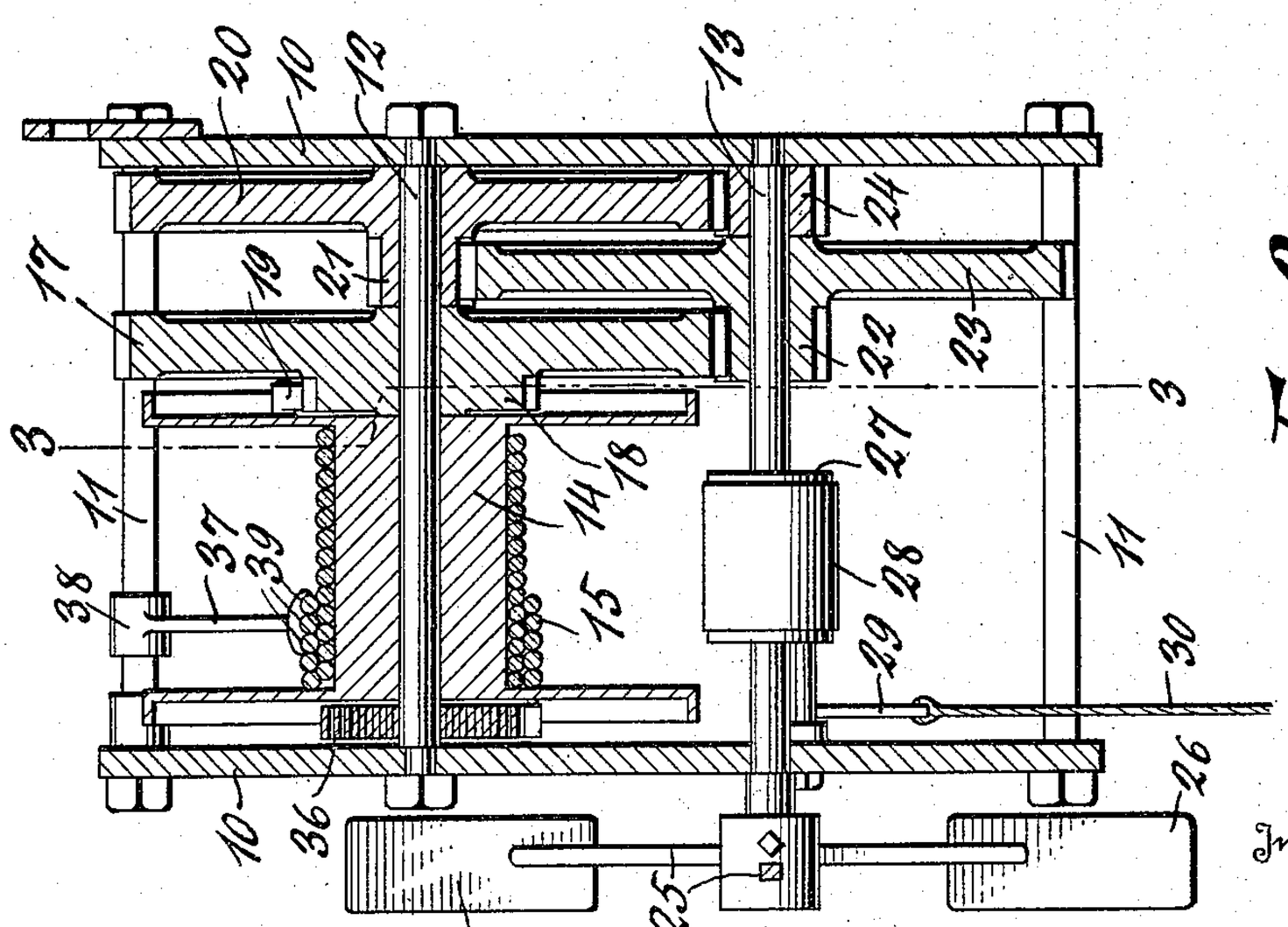

Fig. 2.

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UNITED STATES PATENT OFFICE.

ABRAHAM WINKLER, OF CHICAGO, ILLINOIS.

PORTABLE FIRE-ESCAPE.

1,167,239. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed July 25, 1914. Serial No. 853,118.

To all whom it may concern:

Be it known that I, ABRAHAM WINKLER, a subject of the Emperor of Russia, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Portable Fire-Escapes, of which the following is a specification.

This invention relates to fire-escape apparatus in which a rope carrying a basket, a sling or other suitable carrier, is wound on a drum supported in a portable frame.

The invention has for its object to provide in an apparatus of the kind stated novel and improved means for controlling the unwinding of the rope from the drum, and to this end it consists in a combination and arrangement of parts to be hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the apparatus; Fig. 2 is a vertical cross-section on the line 2—2 of Fig. 1; Fig. 3 is a cross-section on the line 3—3 of Fig. 2, and Fig. 4 is a cross-section of the carrier.

Referring specifically to the drawing, the supporting frame of the apparatus comprises two plates 10 secured in laterally spaced relation by four corner rods or bolts 11. Supported by these plates, and extending therebetween, are two parallel shafts 12 and 13, respectively, the former being stationary and the latter free to rotate.

On the shaft 12 is rotatably mounted a drum or spool 14 on which is wound a rope 15 from which a basket or other suitable carrier 16 is suspended, the same being lowered by paying the rope off the drum. In order to check and control the descent of the carrier, the following mechanism is provided: On the shaft 12 is loosely mounted a large gear wheel 17 carrying on one side a ratchet wheel 18 engageable by pawls 19 carried by one end of the drum 14, whereby the rotary motion of the latter, in a direction to pay out the rope 15, is transmitted to the gear wheel; whereas, when the drum rotates in the other direction, the pawls slip and no motion is transmitted to the gear wheel. On the shaft 12 is also a loose gear wheel 20 having on one side a pinion 21, which may be integral with said gear wheel or made fast thereto to turn therewith. On the shaft 13 is loose a pinion 22 which is formed integral with or made fast to a gear wheel 23. On the shaft 13 is also fast a pinion 24. The gear wheel 17 is in mesh with the pinion 22; the gear wheel 23 is in mesh with the pinion 21, and the gear wheel 20 meshes with the pinion 24. Thus, it will be seen that the rotation of the drum in a direction to pay out the rope 15 is transmitted at an increased rate of speed to the shaft 13. The shaft 13 projects at one end from one of the plates 10 and said end carries radial arms 25 having vanes 26 at their outer ends, which, when they are in motion, by reason of the air resistance, check the speed of rotation of the drum, and thus prevent the rope from being paid out too fast. A friction brake is also provided, the same comprising a brake drum 27 on the shaft 13, engageable by a brake band 28, to the operating lever 29 of which is connected a line 30 of sufficient length to reach the carrier 16, in order to enable the occupant thereof to operate the brake and thus control the speed of descent. A means is also provided for applying the brake gradually as the carrier reaches its destination, in order to eliminate the jolt which would result from a sudden stoppage. On the side of the carrier is mounted a receptacle 31 in which is fastened one end of a coiled spring 32, to the other end of which spring the line 30 is made fast. When the carrier reaches a short distance from the ground, the line gets taut, whereupon the spring 32 is placed under tension and the brake is gradually applied. It is, of course, to be understood that the length of the line must be properly proportioned to the height from which the carrier descends. The periphery of the drum ends may be flanged as shown, to permit the employment of another brake band, if desired or deemed necessary.

On one of the plates 10 is mounted a bell or other audible signal device 33, the hammer 34 of which is in the path of tappets 35 on the adjacent drum end, so that the occupants of the building may be warned if an intruder is using the apparatus to escape from the building.

On the shaft 12 is fastened one end of a spring 36, the other end of which is made fast to the drum 14. This spring serves to turn the drum in a direction to wind the rope 15 back thereon. A device is also provided for guiding the rope 15 so that it is evenly wound on the drum. This device comprises a pair of spring arms 37 extending from a sleeve 38 which is slidably mounted on one of the rods 11. The spring arms

are vertically spaced at their outer ends to straddle the drum, and the upper arm has a widened extremity shaped to form separate seats 39 for several strands of the rope. The extremity of the lower arm is flat and smooth. When the layers of rope accumulate on the drum, the spring arms 37 spread, and the pressure of the upper arm on the strands will properly lay them side by side on the drum, the spring arms sliding back and forth on the rod 11. A small basket or other suitable receptacle 40, hung from one of the plates 10, serves to hold loose rope. The supplemental brake shown dotted in Fig. 3 may also be provided, the same comprising a lever 41 fulcrumed on the rod 11 which carries the sleeve 38, said lever having a hook-shaped free end designed to come in the path of the tappets 35. The lever has a projecting arm 42 to which an operating line 43 is connected. A spring 44 connected to the lever 41 retracts the same to take it out of the path of the tappets 35 when the pull on the line 43 is released.

I claim:

The combination of a drum and a line to be wound thereon, of a pair of spring arms straddling the drum and slidable in the direction of the length thereof, one of said arms having seats for a plurality of strands of the line.

In testimony whereof I affix my signature in presence of two witnesses.

ABRAHAM WINKLER.

Witness:
SOLOMON KATZ,
ABRUM TENENBAUM.