No. 665,922. Patented Jan. 15, 1901.

S. R. MUNSON.

PRICE SCALE.

(Application filed Jan. 16, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

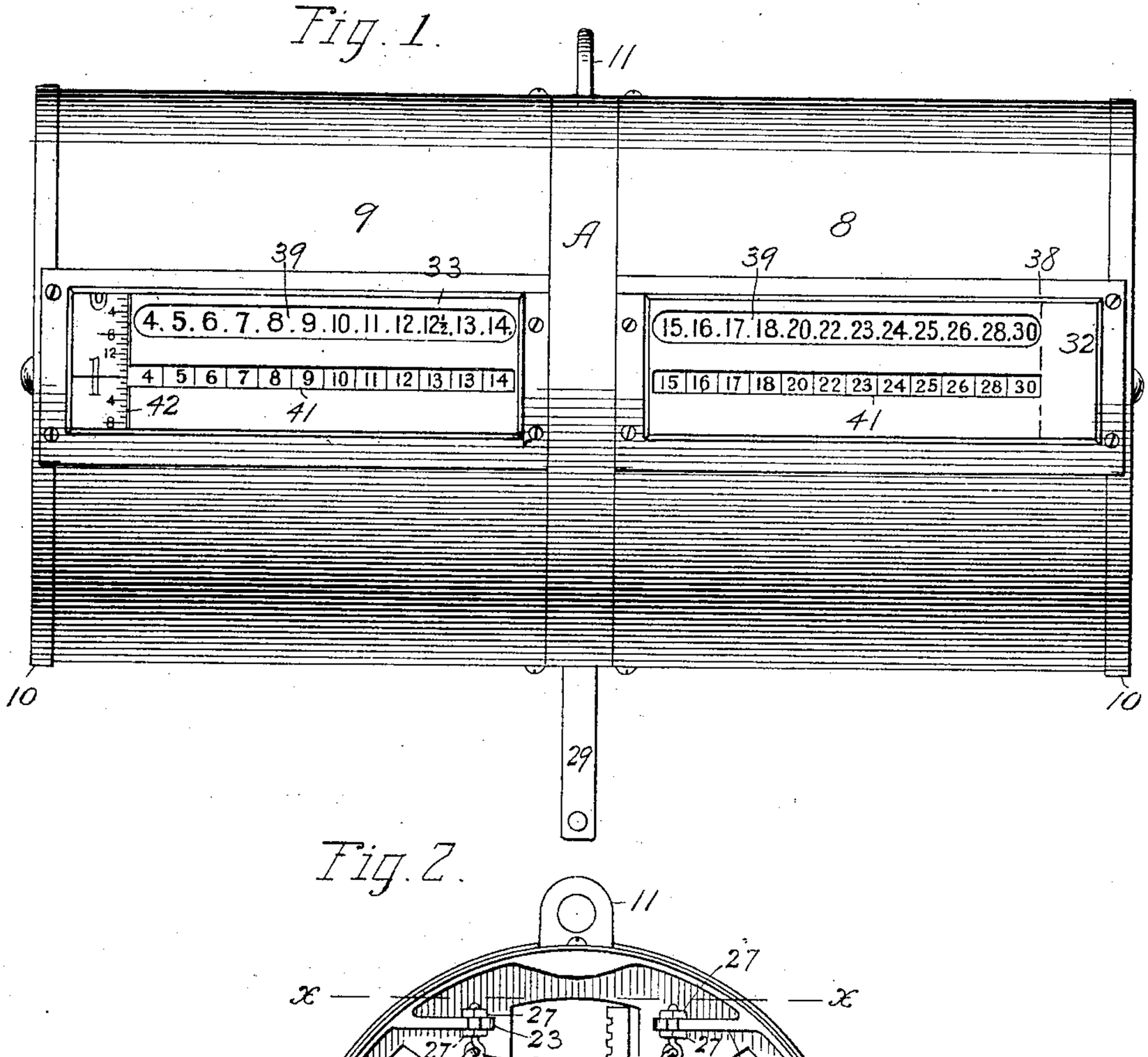

Fig. 2.

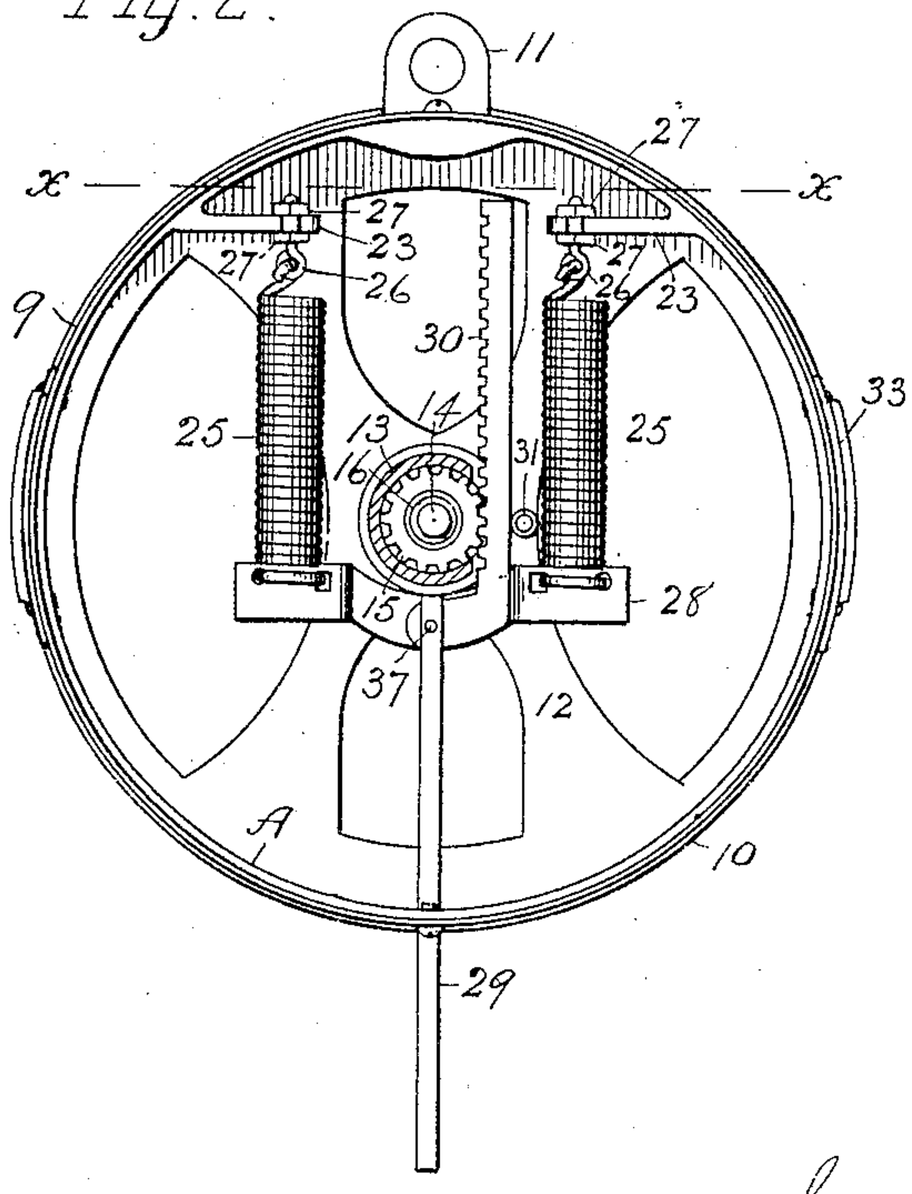

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Fig. 3.

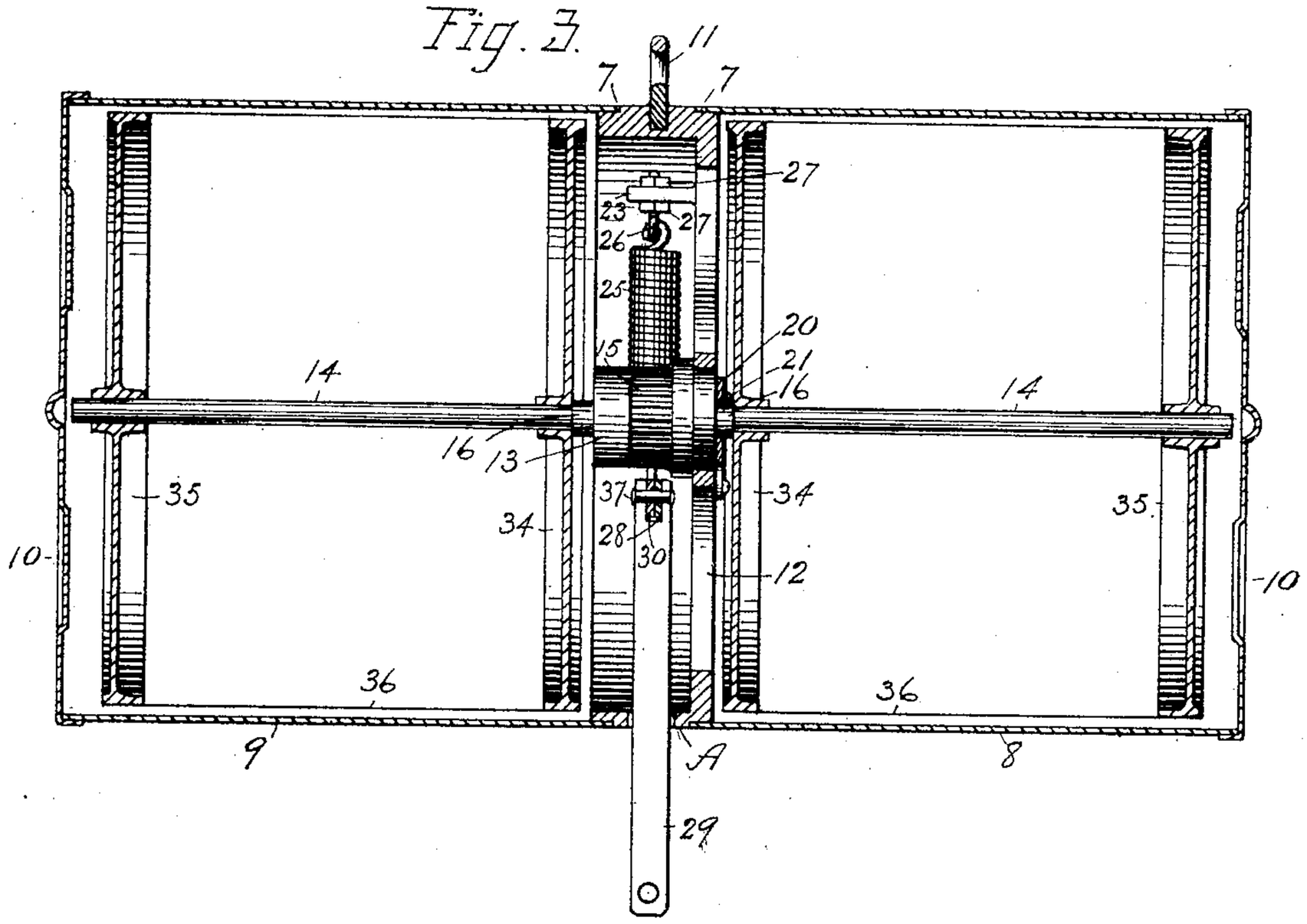


Fig. 4.

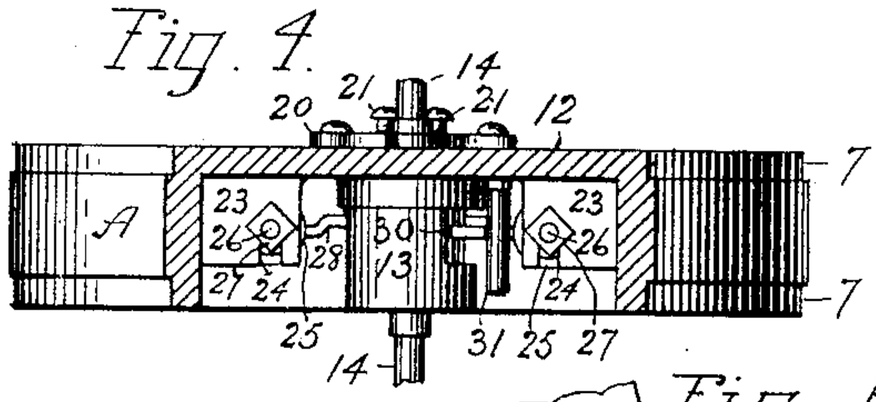


Fig. 5.

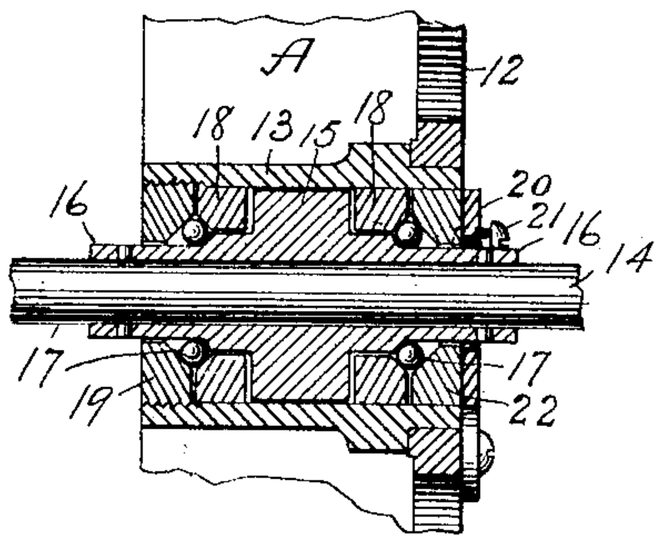
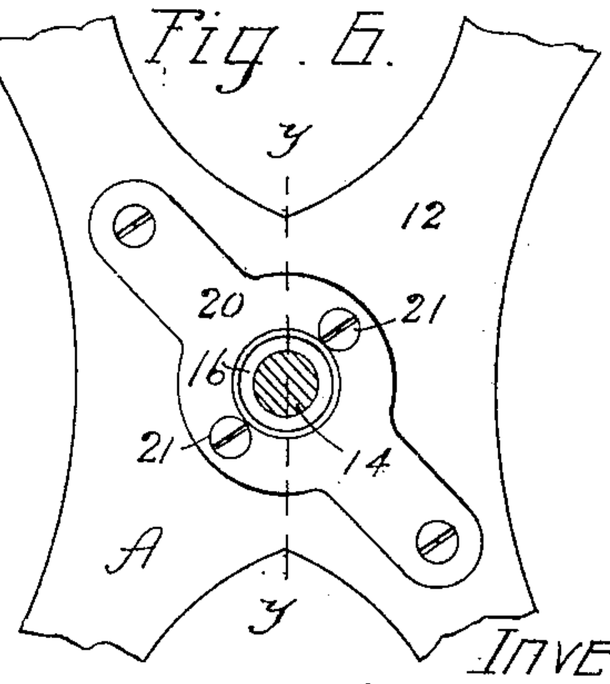


Fig. 6.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 7.

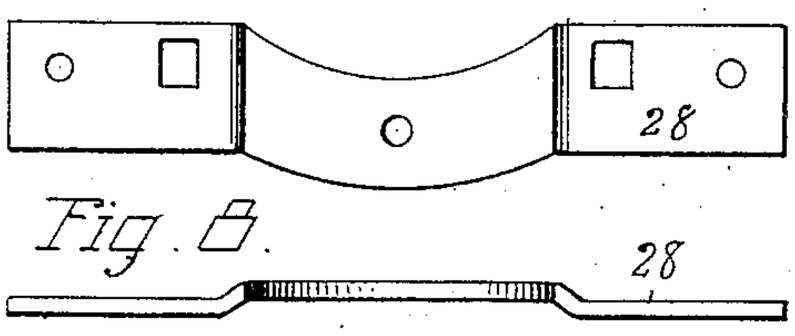


Fig. 8.

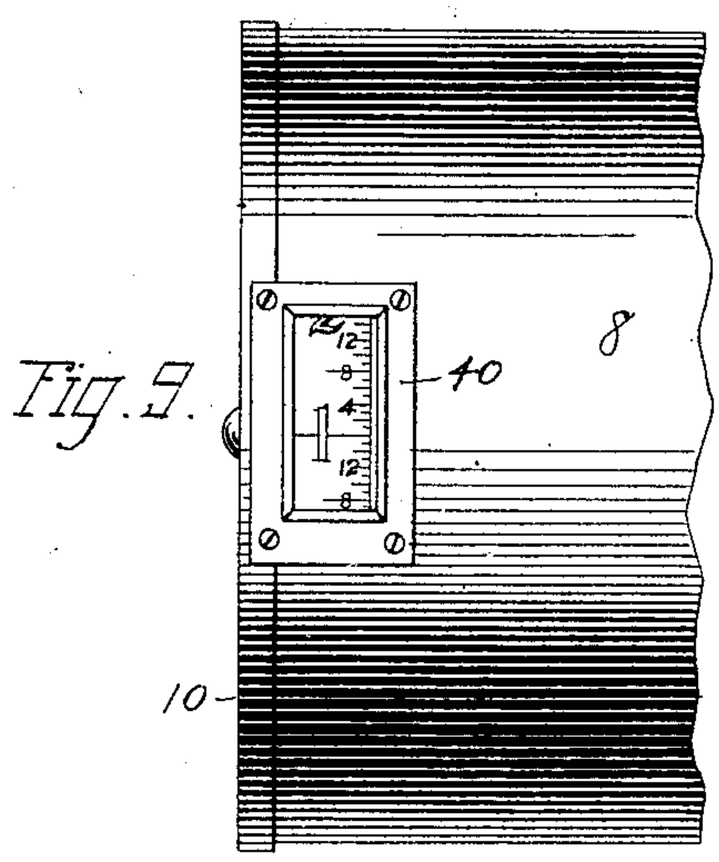
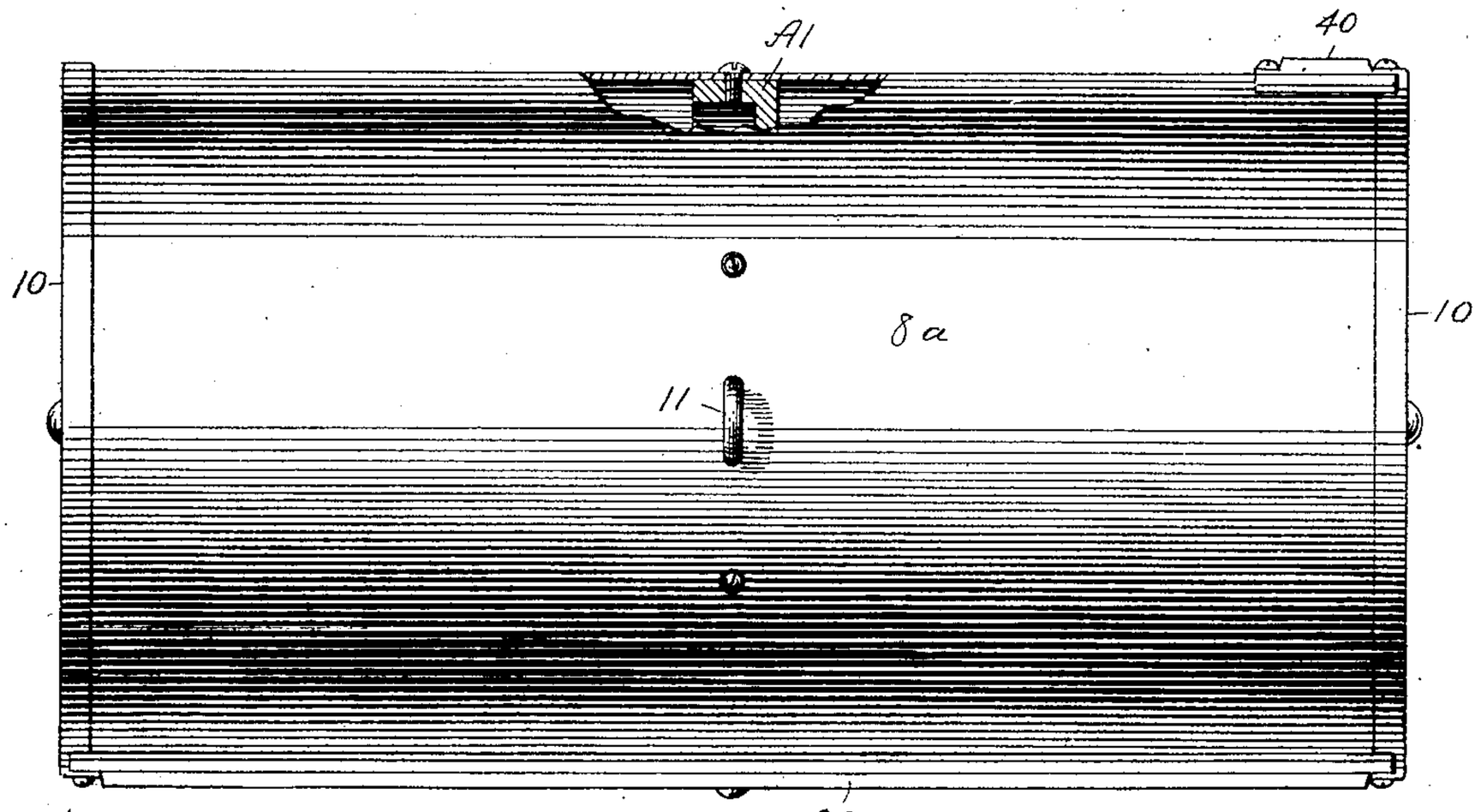


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE.

SAMUEL R. MUNSON, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE LANDERS, FRARY & CLARK, OF SAME PLACE.

PRICE-SCALE.

SPECIFICATION forming part of Letters Patent No. 665,922, dated January 15, 1901.

Application filed January 16, 1900. Serial No. 1,661. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. MUNSON, a citizen of the United States, residing in New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Price-Scales, of which the following is a specification.

My invention relates to improvements in price-scales; and the objects of my improvement are simplicity and economy in construction and efficiency in operation.

In the accompanying drawings, Figure 1 is a front elevation of my scales with the cylinders in the position to indicate one pound. Fig. 2 is a side elevation of the same with the left-hand end piece of the case removed and with the case for the ball-bearings in transverse section. Fig. 3 is a central longitudinal and vertical section of the same with the cylinder-shaft, ball-bearing case, and sliding bar in elevation. Fig. 4 is a sectional plan view of the middle portion on the line $x\ x$ of Fig. 2, the cylinders and main portions of the case being removed and the ends of the cylinder-shaft broken off. Fig. 5 is an enlarged central longitudinal and vertical section of the bearings on the line $y\ y$ of Fig. 6, the shaft and balls being shown in side elevation. Fig. 6 is a side elevation of the middle portion of the frame, the cylinder and pinion shaft being shown in transverse section. Fig. 7 is a detached side elevation of the yoke for the springs. Fig. 8 is a plan view of the same. Fig. 9 is a rear elevation, on a reduced scale, of that portion of my scales which is at the right-hand end in Fig. 1. Fig. 10 is a plan view, partly in horizontal section, of my scales with a modified form of case and frame.

A designates the frame, upon which the entire scale is supported. It has a ring-shaped rim, with a rabbet 7 at each edge to receive the cylindrical portions 8 9 of the case, both of which portions are provided with end pieces 10 at their outer ends. This frame is or may be provided with any suitable perforated lug or eye 11, preferably cut out of sheet metal and cast in the frame and by which the frame may be hung on any suitable support. The frame is also provided with a transverse supporting-web 12, preferably skeletonized, to receive the case 13 for the bearings of the cylinder-shaft 14 and pinion 15. The frame is bored centrally, and the bearing-case 13 is fitted thereto and made rigid therein.

I prefer to employ ball-bearings, in which case I may form the pinion 15 with a hub 16 at each end to form one of the bearing-surfaces for the series of balls 17, the case 13 being large enough to receive the pinion and permit it to revolve freely. At each end of the pinion I secure within the case 13 a pair of bearing-rings having properly-formed bearing-faces for the series of balls 17, which rings are commonly termed "cones." The rings may be secured and adjusted in any desired manner. I have shown the rings 18 as snugly fitting and filling the case, so that they may be secured by merely forcing them into the case. The ring 19 at the left-hand end of the case 13 is provided with a screw-thread on its periphery, and the case is correspondingly threaded, whereby said ring may be secured in place. At the other end of the bearing I secure a bracket 20 to the skeleton or web 12, and two screws 21 extend through threaded holes in said bracket into shallow holes in the side of the ring 22, as indicated by broken lines in Fig. 5, for the upper one of the said screws. This will not only prevent the ring 22 from turning within the case, but the screws may be used for adjusting the said ring.

In the upper part of the frame A, on the transverse skeleton or web 12, are the spring-supporting lugs 23, with open slots 24, Fig. 4, and the two springs 25 are mounted on an eye having a threaded shank provided with the nuts 27—one above and one below the said lugs 23—whereby the springs may be readily adjusted and secured in place. The lower ends of the springs are secured to the yoke 28, to which the sliding bar 29 and rack 30 are pivoted, the said rack engaging the pinion 15, while back of the rack is the roller 31 to hold the rack and pinion in proper engagement. The pinion 15 being within the bearing-case 13, it is evident that the said case must be slotted or cut away at one side suffi-

ciently to permit the rack to engage the said pinion, as shown in Figs. 2, 3, and 4. The sliding bar extends through an opening in the lower part of the frame, and any desired form of pan or hook may be secured to the lower end of the said bar.

I make the bar and yoke separately of sheet or plate metal and connect them by means of the pin 37, which pin also serves to secure the rack 30 to the said yoke. The middle portion of the yoke is offset, as best shown in Figs. 7 and 8, so that the short arm of the rack may lie flat upon the side of the yoke within the said offset middle portion, and the rack will be in the same plane as the ends of the yoke that are secured to the springs 25.

The cylindrical portion 8 of the case at the right-hand end is provided at its front with an escutcheon 32 and at its rear with an escutcheon 40, with such openings as I propose to use, and the cylindrical portion 9 with the escutcheon 33, with somewhat-different openings. The cylinder and pinion shaft 14 may be provided with any ordinary or desired form of cylinders. I have shown the cylinders as constructed of two wheels 34 35 and a circumferential shell 36, upon which may be printed any desired marks, figures, or scales, according to the particular thing or things that may be desired to be accomplished by said marks and figures.

In the particular form shown the upper openings 39 in the two front escutcheons show the price per pound from four to thirty, while the lower openings 41 and end opening 42 show figures and scales on the cylinder the same or similar to other scales of this class. The pound-marks, with a graduated scale for ounces, &c., show through the end opening 42, while the amount of the weight at any given price per pound shows through the openings 41. As before stated, the cylinder as shown stands in a position to indicate one pound in weight, and hence the amount and price per pound correspond.

On the rear side of the scales, diagonally opposite the end opening 42, is an escutcheon 40, having an opening similar to the end opening 42, the cylinder on the portion that travels in front of this opening having pound-marks, with a graduated scale for ounces, &c., substantially like those first described as presented to the end opening 42, only the said marks and scale are arranged so as to show the same figures through the opening in the rear escutcheon 40 that are shown through the end opening 42 at the front, as illustrated in Figs. 1 and 9. The position of the opening in the rear escutcheon 40 is indicated in Fig. 1 by the broken line 38, in connection with the adjoining full lines at the right thereof, which full lines, in connection with said broken line, form a rectangular figure.

In Fig. 10 I have shown the frame A′ without the rabbets 7 to receive the two cylindrical portions 8 9 of the case, and I form the body of the case of one cylindrical portion 8^a, extending substantially the length of the complete case. I make this portion 8^a surround and fit the periphery of the frame A′. All other parts of the scales are or may be the same as first described.

It is apparent that some changes from the specific construction herein disclosed may be made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. In price-scales, the combination of the frame with the bearing-case mounted on the said frame, a cylinder and pinion shaft mounted within the said bearing-case, a pinion on the said shaft, and bearings within the said bearing-case at each end of the said pinion, substantially as described.

2. In price-scales, the combination of frame with the bearing-case mounted on the said frame, a cylinder and pinion shaft mounted within the said bearing-case, the two series of balls, and the bearing-rings secured in the opposite ends of the said bearing-case, substantially as described.

3. In price-scales, the combination of the frame having a ring-shaped rim and transverse web, with a ball-bearing case secured to the central portion of the said transverse web, a cylinder and pinion shaft mounted within the said case, the two series of balls, the bearing-ring 19 at one end of the said case, the bearing-ring 22 at its opposite end, the bracket 20 secured to the said web and the screws 21, substantially as described.

4. In price-scales, the combination of the frame having a ring-shaped rim and a web extending across the said rim, a cylindrical case fitted to the said rim of the frame, the bearings of the cylinder and pinion shaft mounted on the central portion of the said web portion of the frame, and the cylinder and pinion shaft mounted in the said bearings, substantially as described.

5. In spring-scales, the combination of a frame with the two springs, the yoke having the offset middle portion and end portions the latter being connected with the said springs, a pinion mounted in the said frame, a rack engaging the said pinion with one end resting against the side of the offset portion of the said yoke with its body portion in substantially the same plane as the ends of the said yoke, and the sliding bar pivoted to the middle portion of the said yoke, substantially as described.

6. In price-scales, the combination of a frame, the bearing-case 13 mounted on the said frame, a cylinder and pinion shaft mounted within the said case, a pinion on the said shaft and mainly inclosed within the said case, bearings at each end of the said pinion and within the said case, the sliding bar, yoke, springs, and rack, the said rack engaging the

pinion through an opening at one side of the said case near the middle of the length thereof, substantially as described.

7. In price-scales, the combination of the frame having a ring-shaped rim with rabbets at each edge and a transverse web, the bearings of the cylinder and pinion shaft mounted on the central portion of the web of the said frame, and the two cylindrical portions of the case with their inner ends secured to the rabbeted edges of the rim of the said frame, substantially as described.

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Witnesses:
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MARTHA A. PARSONS.