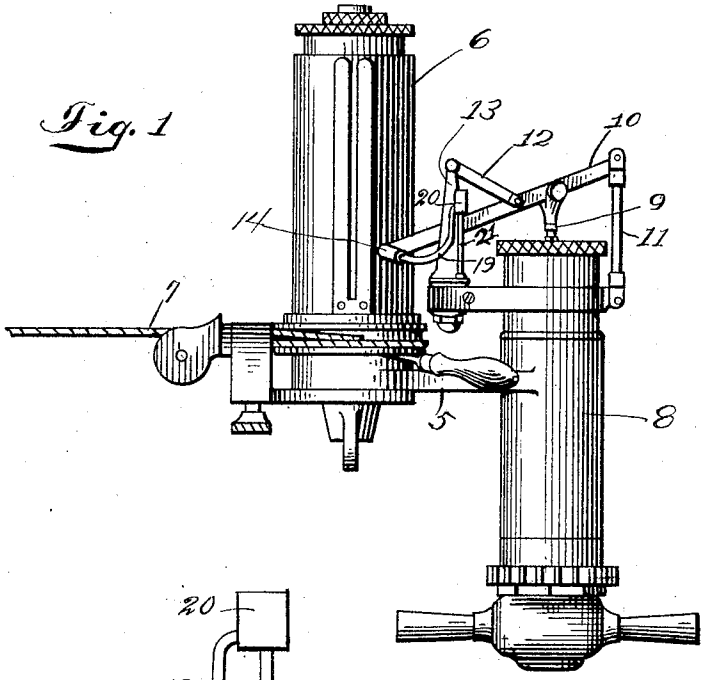
D. H. HULL.

RECORDING INSTRUMENT.

APPLICATION FILED SEPT. 13, 1912.

1,179,925. Patented Apr. 18, 1916.

Fig. 1



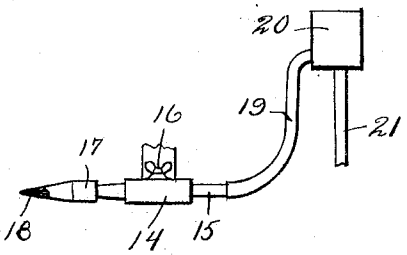
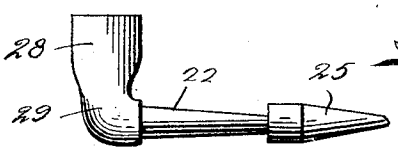


Fig. 2.

Fig. 3.



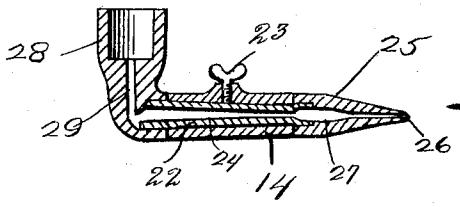


Fig. 4.

Inventor

D. H. Hull

Witnesses

J. Milton Jester.

B. B. Hubbard

By C. H. Parker.

Attorney

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

DABNEY H. HULL, OF ASYLUM, MISSISSIPPI.

RECORDING INSTRUMENT.

1,179,925. Specification of Letters Patent. Patented Apr. 18, 1916.

Application filed September 13, 1912. Serial No. 720,190.

To all whom it may concern:

Be it known that I, DABNEY H. HULL, a citizen of the United States, residing at Asylum, in the county of Hinds and State of Mississippi, have invented certain new and useful Improvements in Recording Instruments, of which the following is a specification.

My invention relates to recording instruments and has particular reference to a novel form of recording pen.

An important object of this invention is to provide a recording pen which is simple in construction, reliable in operation and cheap to manufacture.

A further object of my invention is to provide a recording pen of the above mentioned character having means for holding a large amount of ink which is properly fed to the pen point, whereby the device will operate continuously for a long time.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side view of an engine indicator showing my improved recording pen applied thereto, Fig. 2 is a side view of the recording pen removed, Fig. 3 is a similar view of a slightly different form of recording pen, and, Fig. 4 is a central vertical longitudinal sectional view through the same.

In the drawings wherein is illustrated a preferred embodiment of my invention, the numeral 5 designates a suitably supported stationary body portion, upon which is pivotally mounted a drum 6, having its lower portion engaged by a cable 7 which turns the drum for a complete revolution in one direction. A suitable spring (not shown) returns the drum 6 to its normal position when the cable is released, which occurs upon the back stroke of the piston. A record leaf (not shown) is suitably mounted upon the drum 6.

Rigidly connected with the stationary body portion 5 is a cylinder 8, having communication with the engine cylinder through the medium of a pipe (not shown). It is thus seen that when a charge is exploded in the engine cylinder, the pressure is conducted through the pipe to the cylinder 8. Mounted to reciprocate within this cylinder is a spring pressed piston (not shown), which is connected with an upwardly extending piston rod 9. The piston rod 9 is pivotally connected with an indicator arm 10, which is pivotally connected at one end with a vertically swinging supporting arm 11. Pivotally connected with the indicator arm 10 is a link 12, having one end pivoted with a stationary support 13, as shown. At its free end the indicator arm 10 is provided with an enlarged apertured head 14.

My improved recording pen comprises a tubular body portion 15, which is inserted through the apertured head 14 and held against displacement by clamping bolt 16. Suitably mounted upon one end of the tubular body portion 15 is a contracted tapered tip or point 17 provided at its extreme end with a small orifice 18. Connected with the opposite end of the tubular body portion 15 is a flexible hose 19, connected with a reservoir or tank 20, holding the ink. This reservoir is rigidly mounted upon a stationary vertical post 21.

In Figs. 3 and 4 I have shown a different form of recording pen. In these figures the numeral 22 designates a tubular body portion, which is adapted for insertion through the apertured head 14 and is held against displacement by the clamping bolt 23. The tubular body portion 22 has its opening 24 tapered toward its forward end, as clearly shown in Fig. 4. Suitably mounted upon one end of the tubular body portion 22 is a tapered tip or point 25, provided at its extreme end with a small orifice 26, which leads into an enlarged chamber 27, having free communication with the opening 24. Suitably mounted upon the opposite end of the tubular body portion 22 is a main reservoir or tank 28, having communication with the tubular body portion 22 through the medium of a port 29.

The operation of the device is as follows:—At the same time that pressure is introduced into the cylinder 8, the cable 7 turns the drum 6. The point 17 engages the record sheet and draws the desired curve. I have found that the operation of the recording pen, (shown in Figs. 3 and 4) is particularly advantageous, as the ink is supplied to the orifice 26 evenly and continuously, whereby a smooth regular curve is drawn. It is believed that the successful operation of this form of recording pen is due to the employment of the enlarged

chamber 27 in combination with the other elements. It is essential that the several elements be readily separable so that they may be cleaned of the dried or thickened ink. It is also important that the connection between the tubular body portion and swinging arm be strong and rigid.

It is to be understood that the forms of my invention herewith shown and described are to be taken as preferred examples of the same and that certain changes in the shapes, sizes and arrangement of parts may be resorted to without departing from the spirit of my invention and the scope of the subjoined claim.

Having fully described my invention, I claim:—

The combination with a tubular head open at both ends and serving as a support, of a tube mounted therein and extending at both ends a substantial distance beyond the ends of the head, means to clamp the tube in place within the head, a tubular point provided at its inner end with a counter-bore for receiving one end of the tube and engaging the head at a point substantially inwardly spaced from the free end of the tube whereby the tube overlaps the juncture between the tubular point and head, and a supply receptacle provided with a tubular neck having a counter-bore to receive the opposite end of the tube and engaging the opposite end of the head at a point substantially inwardly spaced from the last named end of the tube whereby said tube overlaps the juncture between the tubular neck and head.

In testimony whereof I affix my signature in presence of a witness.

DABNEY H. HULL.

Witness:

LAURA LU LOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."